Descriptions of Three New Cantharid Species Related to *Themus* (*Themus*) Senensis (Pic, 1922) (Coleoptera: Cantharidae)

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DESCRIPTIONS OF THREE NEW CANTHARID SPECIES RELATED TO *THEMUS* (*THEMUS*) *SENENSIS* (PIC, 1922) (COLEOPTERA: CANTHARIDAE)

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Abstract.— *Themus* (*T.*) *senensis* (Pic, 1922) is redescribed and three new species related to it are described, *T.* (*T.*) *senensomimus* **sp. nov.** (China, Thailand), *T.* (*T.*) *bilobatus* **sp. nov.** (Laos, Vietnam) and *T.* (*T.*) *dalatensis* **sp. nov.** (Vietnam). Each species is provided with illustrations of aedeagus and abdominal sternite VIII of female. *T.* (*T.*) *senensis* is also presented with female genitalia and the new species with habitus of both sexes. A key and a distribution map of the above four species are presented.

Key words.— Taxonomy, *Themus* (*T.*) *senensis*, new species, key, distribution map, Oriental Region.

INTRODUCTION

Themus Motschulsky, 1858, with *T. cyanipennis* originally designated as the type species, is one of the largest cantharid genera and comprises over 230 species in the world. It consists of 4 subgenera (Wittmer 1973, 1997), of which diagnoses were redefined by Švihla (2008). In the nominotypical subgenus, it includes about 100 species now, which are widely distributed in the Oriental and eastern Palaearctic regions (Švihla 2008). During our study, three new species of this subgenus were recently discovered. They are similar to *T.* (*T.*) *senensis* (Pic, 1922), but differ one from another in the shape of aedeagus. Here, the new species are described under the names of *T.* (*T.*) *senensomimus* sp. nov., *T.* (*T.*) *bilobatus* sp. nov. and *T.* (*T.*) *dalatensis* sp. nov. These species are widely distributed in the Oriental Region (Map 1).

This paper is dedicated to the memory of the late Dr. Michel Brancucci (Naturhistorisches Museum Basel, Switzerland) who unfortunately passed away in October 2012, for his great achievement on studies of Coleoptera.

MATERIALS AND METHODS

The specimens are deposited in the following collections:

cAK – collection A. Kopetz, Eischleben, Germany;
cAW – collection A. Weigel, Wernburg, Germany;
IZAS – Institute of Zoology, Chinese Academy of Sciences, Beijing, China;
MHBU – Museum of Hebei University, Baoding, China;
MNHN – Muséum national d'Histoire naturelle, Paris, France;
NHMB – Naturhistorisches Museum Basel, Switzerland;
NKUM – Institute of Entomology, College of Life Sciences, Nankai University, Tianjin, China;
NMEG – Naturkundemuseum Erfurt, Germany;
NMPC – National Museum, Praha, Czech Republic;
NWAFU – Entomological Museum, Northwest A & F University, Yangling, China.

The genitalia of both sexes and abdominal sternites VIII of females were dissected and cleared in 10% KOH

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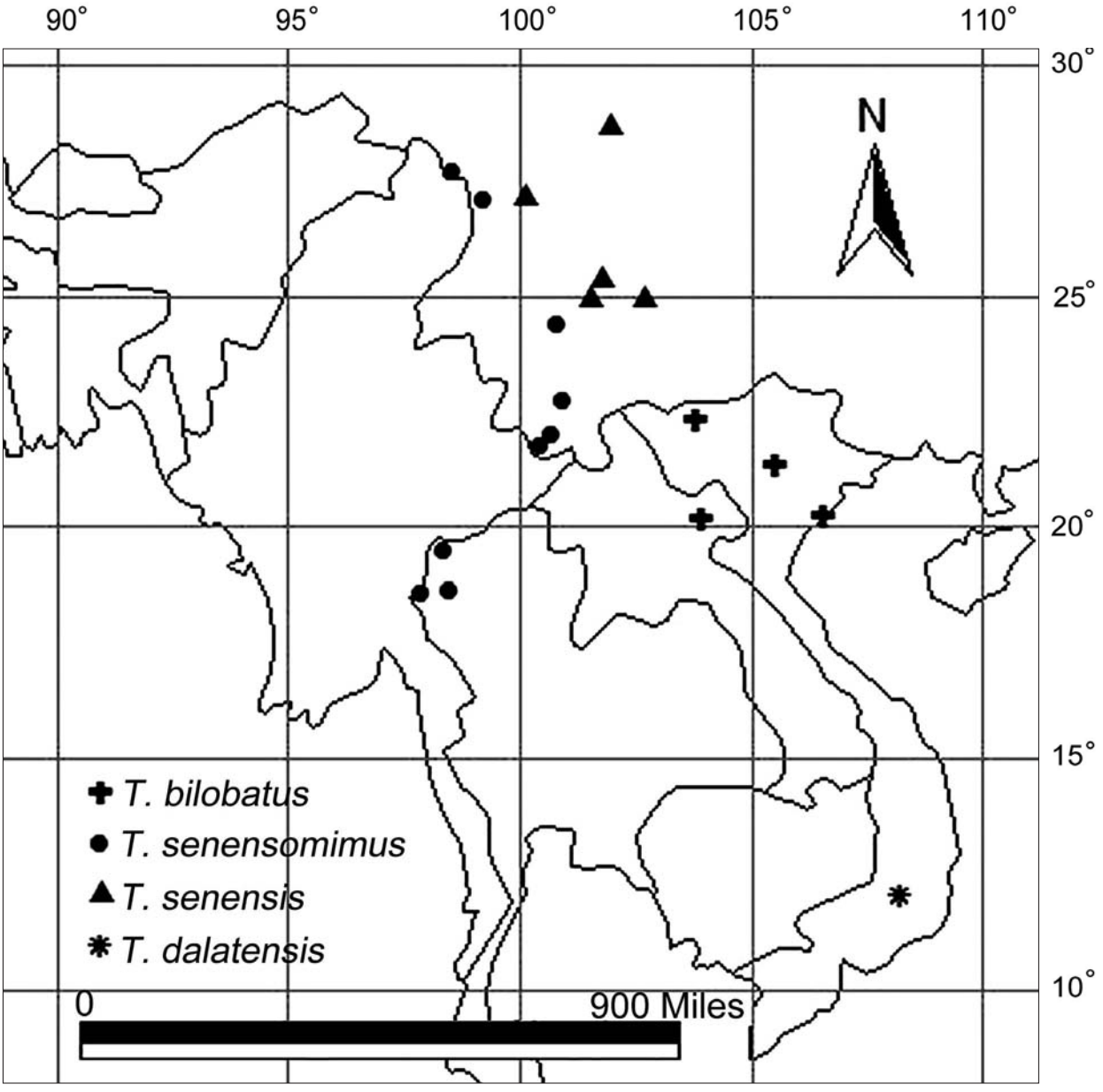
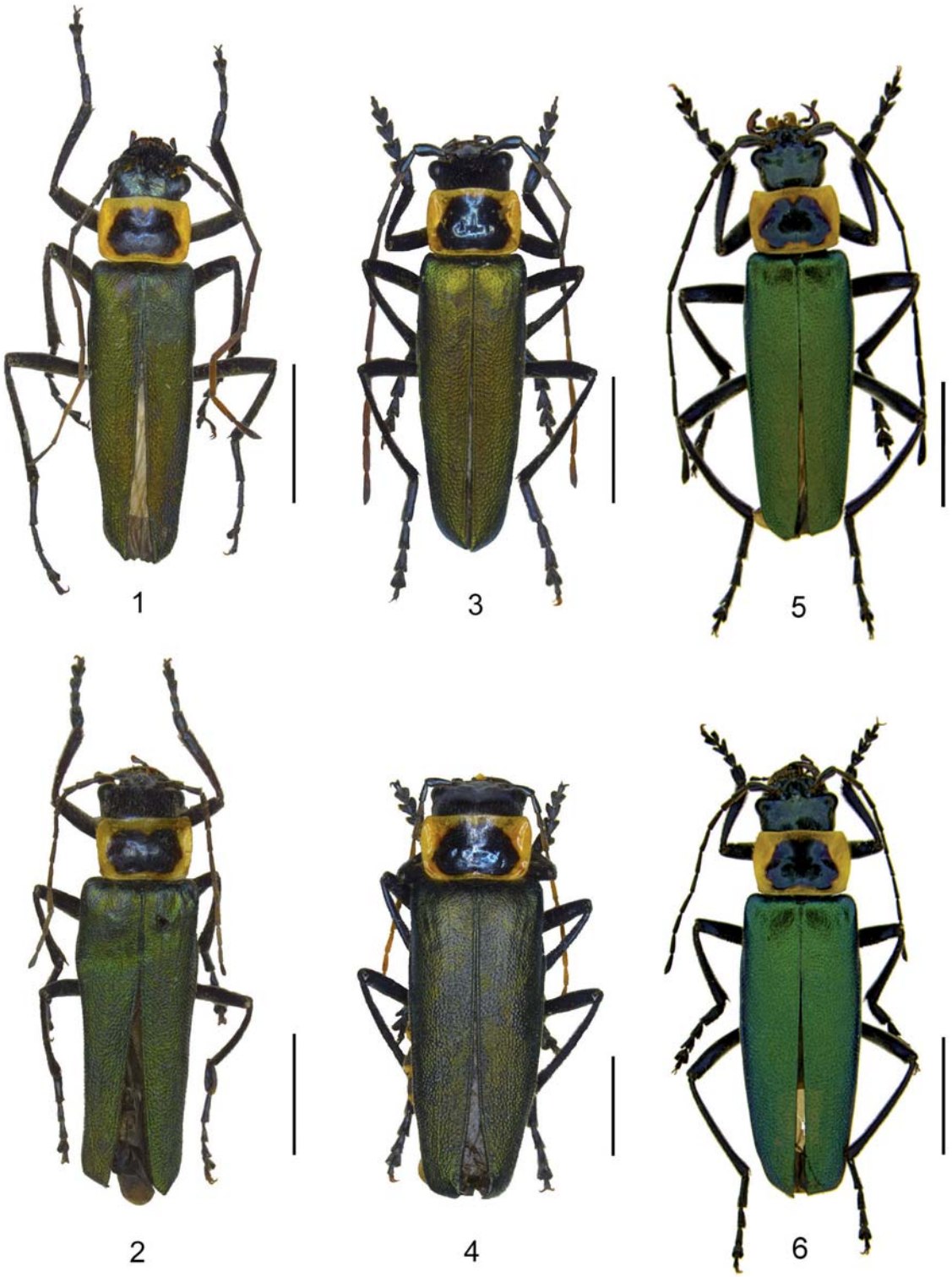
solution, and the female genitalia was dyed with hematoxylin. Habitus photos were taken by a Leica M205 A and Leica Z6 APO A microscope respectively, multiple layers were stacked using Combine ZM (Helicon Focus 5.3). The photos of aedeagi were taken with Philips XL 30 ESEM. Line drawings were made with the aid of camera lucida attached to a Leica MZ12.5 stereomicroscope, then edited in CorelDRAW 12 and Adobe Photoshop 8.0.1. Distribution map was prepared using the geographic information system software ArcView 3.2 (ESRI, Redlands, CA, USA), based on localities of the specimens examined for this study.

Complete label data are cited for type specimens, using square brackets "[ ]" for our remarks and comments, quotation marks to separate data from different labels.

Body length was measured from the anterior margin of the clypeus to the elytral apex and body width across the humeral part of elytra. Morphological terminology of female genitalia follows that of Brancucci (1980).



Map 1. Distribution of the *Themus* (*T.*) *senensis* (Pic) and its related species.



Figures 1–6. Habitus (1, 3, 5. male; 2, 4, 6. female), dorsal view: (1–2) *Themus* (*T.*) *senensomimus* sp. nov.; (3–4) *T.* (*T.*) *bilobatus* sp. nov.; (5–6) *T.* (*T.*) *dalatensis* sp. nov. Scale bars: 4.0 mm.

TAXONOMY

Key to *Themus* (*T.*) *senensis* (Pic) and its related species (males)

1. Aedeagus: conjoint dorsal plate shorter than ventral processes of parameres **2**
–. Aedeagus: conjoint dorsal plate longer than or nearly as long as ventral processes of parameres **3**
2. Aedeagus: dorsal part of laterophyses distinctly shorter than ventral part, distinctly widened in middle, rectangular in apical view ..... ***T.* (*T.*) *senensomimus*** sp. nov.
–. Aedeagus: dorsal part of laterophyses slightly shorter than ventral part, slightly widened in middle, triangular in apical view ..... ***T.* (*T.*) *dalatensis*** sp. nov.
3. Aedeagus: ventral part of laterophyse acute at apex, distinctly shorter than dorsal part ..... ***T.* (*T.*) *bilobatus*** sp. nov.
–. Aedeagus: ventral part of laterophyse truncate at apex, nearly as long as dorsal part ..... ***T.* (*T.*) *senensis*** (Pic)

Themus (*T.*) *senensis* (Pic)
(Figs 7, 11–14, 27, 31–32)

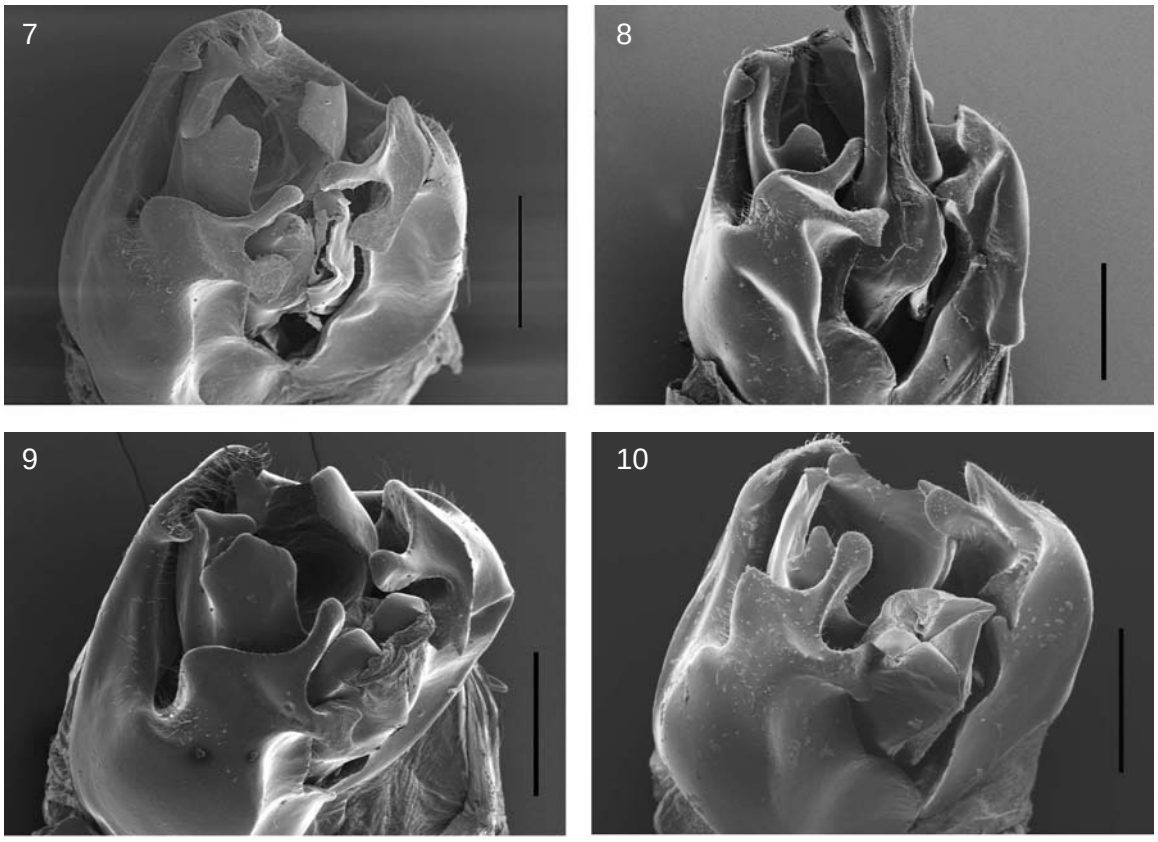
Cantharis senensis Pic, 1922a: 32.
Cantharis infraterna Pic, 1922b: 1. Synonymized by Wittmer, 1983: 212.
Themus senensis: Wittmer 1961: 363.
Themus infraternus: Wittmer 1961: 363.
Themus (s. str.) *senensis*: Wittmer 1983: 212, figs 21, 84.

Type locality. China: Yunnan, Kunming.

Type material. *Cantharis senensis*: Lectotype, male (MNHN): "China, Yunnanfou [Kunming]", "senensis n. sp.", "type", "LECTOTYPUS", "Themus s.str. senensis (Pic), det. W. Wittmer". Paralectotype: 1 female (MNHN): same data as lectotype.

Cantharis infraterna: Holotype, male (MNHN): "Yunnan", "infraterna n. sp.", "type", "HOLOTYPUS", "Themus s. str. senensis (Pic), det. W. Wittmer".

Other material examined. **CHINA**: 2 males (NWAFU): Yunnan, Kunming, Wenquan, 1900m, 3.–4.vii.1974, leg. Yao Zhou & Feng Yuan; 2 males, 2 females (NWAFU): Yunnan, Zhongdian, Hutiaoxia, Yangjiahe, 1910 m, 14.vi.2007, leg. Xiao-Chen Zhang;



Figures 7–10. Aedeagi, lateroapical views: (7) *Themus* (*T.*) *senensis* (Pic); (8) *T.* (*T.*) *senensomimus* sp. nov.; (9) *T.* (*T.*) *bilobatus* sp. nov.; (10) *T.* (*T.*) *dalatensis* sp. nov. Scale bars: 0.5 mm.

1 female (NWAFU): same data as the latter 17.vi.2007; 1 male (NKUM): Yunnan, Zhongdian, Hutiaoxia, 2050 m, light trap, 10.vi.1996, leg. Le-Yi Zheng; 1 female (NKUM): same data as the latter, leg. Wen-Jun Bu; 1 male (MNHN): Yunnan; 1 female (MNHN): Yunnanfou [Yunnan, Kunming]; 1 male (MNHN): Env. de Yunnanfou [Yunnan, Kunming]; 1 male (MNHN): Sud Yunnan, Tche-Ping-Tcheou; 2 males (NHMB): Yunnan, Vallis flumin, Soling-ho. [now Chuxiong, Longchuan Jiang river]; 1 male, 1 female (1 male: cAK; 1 female: NHMB): Yunnan, Beçu de Lou-Nan, 1931; 1 male, 1 female (NMCP): Sichuan pr., San Ya, 2732 m, 28°43.4'N 101°57.0'E, 11.vi.2005, leg. R. Sehnal & M. Trýzna.

Redescription. Male. Head metallic dark blue, mouthparts black, apices of mandibles dark brown, antennomere I metallic dark blue, II metallic dark blue dorsally and orange ventrally, III–X orange, more or less darkened dorsally, XI orange and darkened apicad, pronotum yellow, with a large metallic dark blue marking in center of disc, scutellum metallic dark blue, elytra metallic blue or green, legs metallic dark blue, prosternum yellow, meso- and metaventrites and ventral side of abdomen metallic dark blue, lateral and posterior margins of abdominal sternites II–VIII and entire sternite IX yellow, or sometimes abdomen yellow, abdominal sternites II–VIII each with a small round metallic dark blue marking on either side. Body densely covered with light yellow short pubescence, sparsely mixed with long erect pubescence on clypeus.

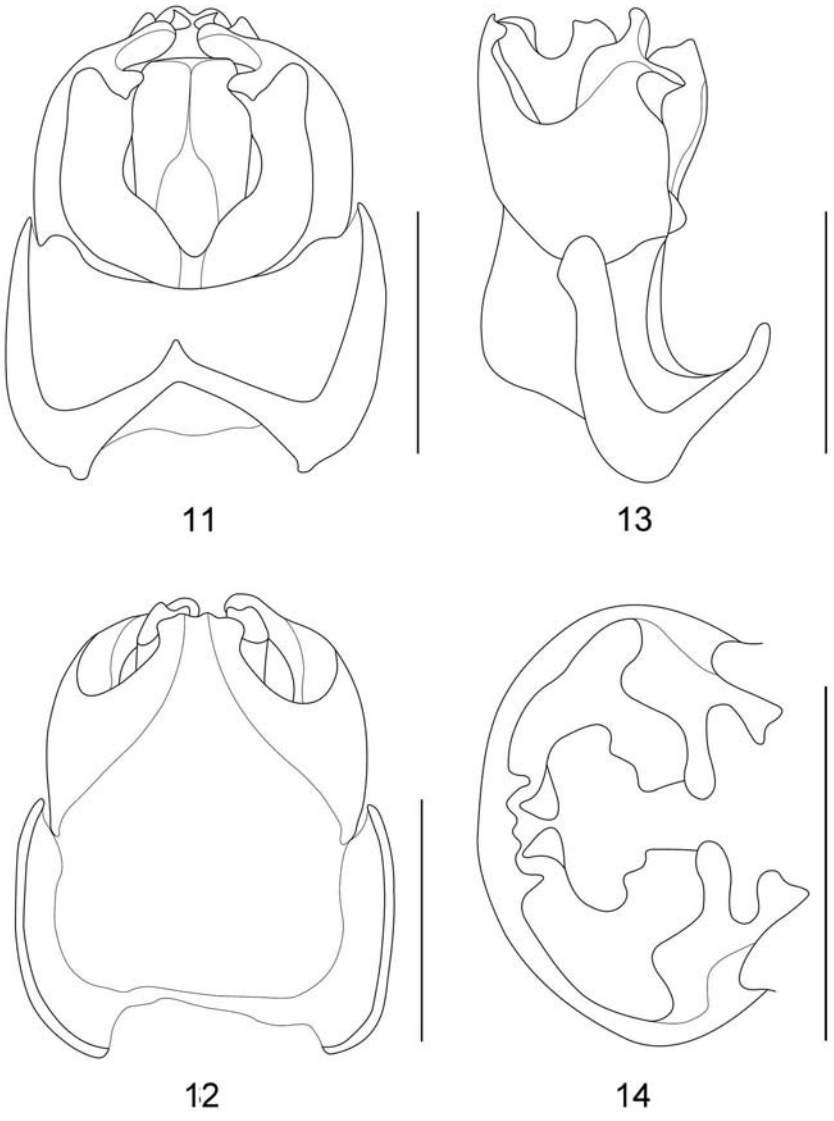
Head rounded, breadth across eyes slightly wider than anterior margin of pronotum, surface lustrous, finely and densely punctate, eyes moderately protruding, apical maxillary palpomeres nearly long-triangular, widest at apical one-third, rounded at apices, antennae subfiliform and slightly flattened, almost extending to basal two-thirds length of elytra, antennomere II about twice longer than wide at apex, III about one-third shorter than II, IV longest, about twice as long as III, from IV to XI gradually shortened, XI pointed at apex, IV–XI each with short narrow, smooth longitudinal or oval groove at apical part of outer margin.

Pronotum about 1.2 times as wide as long, anterior margin bisinuate, lateral margins arcuate and slightly converging posteriorly, posterior margin arcuate and narrowly bordered, anterior angles nearly rectangular, posterior angles rounded, disc convex at posterolateral parts, surface lustrous, slightly finely and sparsely punctate than that on head.

Elytra about 5.0 times longer than pronotum, 3.0 times longer than humeral width, lateral margins distinctly converging posteriorly, apex of each elytron rounded, disc coarsely and densely punctate, semilustrous.

Legs with tarsomeres IV of all tarsi distinctly bilobate, remaining tarsomeres nearly parallel-sided.

Abdominal sternite IX slender. Aedeagus (Figs 7, 11–14): ventral process of each paramere bifurcated in about 45 degrees at apex, with the apex of digitation-like



Figures 11–14. Aedeagus of *Themus* (*T.*) *senensis* (Pic): (11) ventral view; (12) dorsal view; (13) lateral view; (14) apical view. Scale bars: 1.0 mm.

part pointed horizontally; conjoint dorsal plate of parameres strongly narrowed apicad, nearly as long as ventral processes, slightly emarginate in middle of apical margin, lateral angles nearly triangular, bent ventrally and opposite to the apices of laterophyses; laterophyse with ventral part distinctly protuberant and truncate at apex, dorsal part nearly as long as ventral part, normal, slightly separated or leaning to each other in middle, triangular in apical view.

Female. Similar to male, but the abdomen yellow, abdominal sternites II–VIII each with small round dark blue marking on either side, head breadth across eyes nearly as wide as anterior margin of pronotum, eyes less protruding, antennae filiform, extending to basal one-third length of elytra, antennomeres IV–XI without grooves, pronotum slightly wider, about 1.5 times as wide as long, elytra with lateral margins slightly converging posteriorly, abdominal sternite VIII (Fig. 27) slightly emarginate in middle and strongly emarginate on both sides of posterior margin, each side with nearly inverse-trapezoid depression on posterior part, of which inner margins are sclerotized and conjoint in middle at apex, their intersection into about 30 degrees, lateral angles widely rounded at apices. Internal reproductive organ of genitalia (Figs 31–32): spermatheca sac-shaped and rounded at apex, distinctly expanded apicad and bent in middle, provided with long and thin accessory gland at base; diverticulum horn-shaped and bent dorsally, slightly narrowed apicad, distinctly wrinkled along middle line on ventral surface; spermatheca and diverticulum surrounded with strongly sclerotized ring at base, which is confluent in middle and extending to median oviduct on ventral side.

Body length: 15.0–18.0 mm; width: 3.5–4.5 mm.

Distribution. China (Yunnan, Sichuan).

Notes. After our examination of the type material of *T. senensis* and its synonymized species, we discovered that the specimens of Tsekou [China: Yunnan, Gongshan, Cikai] and Chapa [Vietnam: Sa Pa], which are deposited in MNHN, and a large number of additional material at our disposal, belong to three new species described below, *T.* (*T.*) *senensomimus* sp. nov., *T.* (*T.*) *bilobatus* sp. nov. and *T.* (*T.*) *dalatensis* sp. nov. The new species are similar to *T. senensis*, but definitely they differ one from another in the shape of aedeagus, of which the differences are beyond intraspecific variability, not as indicated by Wittmer (1983).

Themus (*T.*) *senensomimus* Y. Yang et Kopetz, sp. nov.
(Figs 1–2, 8, 15–18, 28)

Themus senensis (Pic, 1922): Wittmer 1983: 213 [part, misidentification].

Type locality. China: Yunnan, Jingdong, Wuliang Shan, Shangchanghe.

Type material. Holotype, male (IZAS): **CHINA**: "Yunnan, Jingdong, Wuliang Shan, Shangchanghe, 2200 m, 24.v.2001, leg. Wen-Jun Bu". Paratypes: **CHINA**: 1 male (NKUM): same data to holotype; 1 male (NKUM): "Yunnan, Jingdong, Wuliang Shan, Manwan, 500 m, light trap, 28.v.2001, leg. Qiang Xie"; 1 female (IZAS): "Yunnan, Wuliang Shan, Qincaitang, 1900 m, light trap, 23.v.2001, leg. Qiang Xie"; 1 male (NHMB): "Yunnan, Jingdong, 1170 m, 8.vi.1956, leg. Kryzhanovskij", "21", "senensis", "Naturhist. Museum Basel, coll. W. Wittmer"; 1 female (NKUM): "Yunnan, Simao, Laiyanghe, Luoluoxinzhai Shan, light trap, 1500 m, 26.v.2000, leg. Wen-Jun Bu"; 1 male (MHBU): "Yunnan, Weixi, 2175 m, 23.–25.vii.2008, leg. Ji-Shan Xu & Zhen-Hua Gao"; 1 male (MHBU): "Yunnan, Weixi, Dashuigou, 15.vii.2011, leg. Hao-Yu Liu"; 1 female (IZAS): "Yunnan, Weixi, Pantiange, 2500 m", "25.vii.1981, leg. Shu-Yong Wang" [the above are transliterated from Chinese labels]; 5 males, 1 female (4 males, 1 female: MNHN; 1 male: NHMB): "Tse Kou [now Yunnan, Gongshan, Cikai], 1895, R.P. Dubernard"; 1 male (MNHN): "Tse Kou [now Yunnan, Gongshan, Cikai], 1895, J.A. Soulië"; 6 males, 2 females (3 males, 1 female: cAW; 3 males, 1 female: cAK): "CHINA: S-YUNNAN, (Xishuangbanna), 45 km SW Jinghong, vic. Bangzhang vill., N21°44.37 E100°27.02, 16–1700 m, 03.–05.V.2009, leg. A. Weigel blüh. Cast."; 1 male (cAW): "CHINA: S-YUNNAN, P: Xishuangbanna, 26 km W Jinghong, vic. Meng Song (NNNR), N22°04.65 E100°38.98, 14–1600 m, 30.V.2008, leg. A. Weigel, at flowers of Castanopsis trees"; 2 males, 1 female (NMEG): "S-CHINA, S-YUNNAN, 18 km NW Jinghong, Meng Song, 3.VI.2008, 1300 m, St. Floßmann leg., Castanopsis-Blüte"; 1 male (NHMB): "Szetschwan [Sichuan], China", "coll. Richard Hicker, Wien", "Naturhist. Museum Basel, coll. W. Wittmer"; 1 male (NHMB): "Szetschwan [Sichuan], China", "Themus imperalis Gorh., Det. Rich. Hicker", "Naturhist. Museum Basel, coll. W. Wittmer". **THAILAND**: 2 males (1 male: NHMB; 1 male: cAK): "NW THAILAND, 9.–16.5.1991, Mae Hong Son, Ban Huai Po, 1600m, leg. Pachlatko"; 1 male (NHMB): "THAI, 10–13.5.1993, 19.27N 98.20E, Soppon, 1550 m, L. Bocák lgt."; 2 male (NHMB): same data, Vit Kubáč leg.; 1 female (NHMB): "THAI, Mae Hong Son prov., 19°27'N 98°20'E, 1500 m, Soppong, 7.–12.v., Vit Kubáč leg. 1996"; 1 male (NHMB): "THAI., 1.–8.v.1993, Soppong Pai, 1800 m, Pacholatko & Dembincky leg."; 1 male (NHMB): "Mt. Doe [Doi] Inthanon, 1000 m, N. Thailand, 12-V-1982, T. Shimomura leg."; "senensis", "Naturhist. Museum Basel, coll. W. Wittmer"; 2 males (NHMB): "Chiang Mai, 300m, N. Thailand, 19.V.1988"; 1 male (NMEG): "THAILAND, NW, Prov. Chiang Mai, Dei [Doi] Inthanon, 1500 m, 25.–28.IV.2006, leg. T. Ihle".

Description. Male (Fig. 1). Head metallic dark blue, mouthparts black, apices of mandibles dark brown, antennomere I metallic dark blue, II metallic dark blue dorsally and orange ventrally, III–X orange, more or less darkened dorsally, XI orange and darkened apicad, pronotum yellow, with a large metallic dark blue marking in center of disc, scutellum metallic dark blue, elytra metallic green, legs metallic dark blue, prosternum yellow, meso- and metaventrites and ventral side of abdomen metallic dark blue, lateral and posterior margins of abdominal sternites II–VIII and entire sternite IX yellow. Body densely covered with light yellow short pubescence, sparsely mixed with long erect pubescence on clypeus.

Head rounded, breadth across eyes slightly wider than anterior margin of pronotum, surface lustrous, finely and densely punctate, eyes moderately protruding, apical maxillary palpomeres nearly long-triangular, widest at apical one-third, rounded at apices, antennae subfiliform and slightly flatted, almost extending to basal two-thirds length of elytra, antennomere II about twice longer than wide at apex, III about one-third shorter than II, IV longest, about twice as long as III, from IV to XI gradually shortened, XI pointed at apex, IV–XI each with a short narrow smooth longitudinal or oval groove at apical part of outer margin.

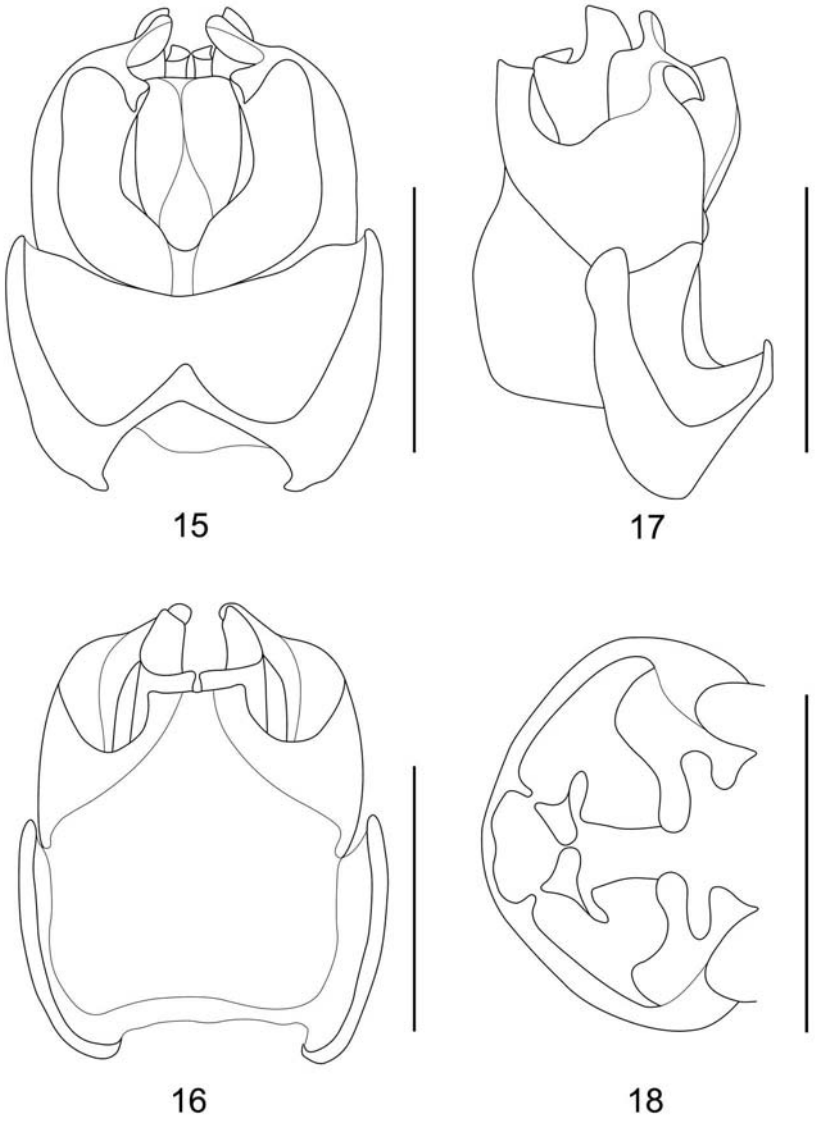
Pronotum about 1.4 times as wide as long, anterior margin bisinuate, lateral margins arcuate and slightly converging posteriorly, posterior margin arcuate and narrowly bordered, anterior angles nearly rectangular, posterior angles rounded, disc convex at posterolateral parts, surface lustrous, more finely and sparsely punctate than that on head.

Elytra about 5.0 times longer than pronotum, 3.0 times longer than humeral width, lateral margins distinctly converging posteriorly, apex of each elytron rounded, disc coarsely and densely punctate, semilustrous.

Legs with tarsomeres IV of all distinctly bilobate, remaining tarsomeres nearly parallel-sided.

Abdominal sternite IX slender. Aedeagus (Figs 8, 15–18): ventral process of each paramere bifurcated in about 60 degrees at apex, with the apex of digitation-like part pointed vertically; conjoint dorsal plate of parameres strongly narrowed apicad, distinctly shorter than ventral processes, with apical margin nearly straight, lateral angles nearly triangular, bent ventrally and opposite to the apices of laterophyses; laterophyse with ventral part distinctly protuberant and tapered apicad, dorsal part distinctly shorter than ventral part, distinctly thickened and widened in middle and leaning to each other in middle, rectangular in apical view.

Female (Fig. 2). Similar to male, but head breadth across eyes nearly as wide as anterior margin of pronotum, eyes less protruding, antennae filiform, extending to basal one-third length of elytra, antennomeres IV–XI without grooves, pronotum slightly wider, about 1.6 times as wide as long, with lateral margins distinctly converging posteriorly, elytra with lateral margins slightly converging posteriorly, legs



Figures 15–18. Aedeagus of *Themus* (*T.*) *senensomimus* sp. nov.: (15) ventral view; (16) dorsal view; (17) lateral view; (18) apical view. Scale bars: 1.0 mm.

also with protarsomeres III distinctly bilobate, abdominal sternite VIII (Fig. 28) slightly emarginate in middle and strongly emarginate on both sides of posterior margin, each side with nearly inverse-trapezoid depression on posterior part, of which inner margins are sclerotized and conjoint in middle, their intersection into about 60 degrees, lateral angles widely rounded at apices. Genitalia similar to that of *T. senensis*.

Body length: 12.0–18.0 mm; width: 3.0–4.5 mm.

Differential diagnosis. This species is similar to *T. senensis*, but can be distinguished from the latter by the shape of aedeagus: ventral process of each paramere with the apex of digitation-like part pointed vertically, conjoint dorsal plate distinctly shorter than ventral processes, with nearly straight apical margin, laterophyse with ventral part distinctly protuberant and tapered apicad, dorsal part distinctly shorter than ventral part, distinctly thickened and widened in middle; abdominal sternite VIII of female with the inner margins of depressions intersected into about 60 degrees.

Etymology. The specific name is derived from the Latin *mimus* (similar, imitating something), referring its similarity to *T.* (*T.*) *senensis* (Pic).

Distribution. China (Yunnan, Sichuan), Thailand (Mae Hong Son, Chiang Mai).

Themus (*T.*) *bilobatus* Y. Yang et Kopetz, sp. nov.
(Figs 3–4, 9, 19–22, 29)

Themus senensis (Pic, 1922): Wittmer 1983: 213 [part, misidentification].

Type locality. Laos: Houa Phan Prov., Ban Saluei–Phou Pane Mt.

Type material. Holotype, male (NHMB): "**LAOS**-NE, Houa Phan Prov., 20°12'13.5''N, 103°59.5'– 104°01'E, Ban Saluei–Phou Pane Mt., 1340–1870 m, 15.IV.–15.V. 2008, leg. Lao collectors". Paratypes: 19 males, 14 females (1 male, 1 female: IZAS; 3 males, 2 females: NHMB; 14 males, 10 females: NMPC; 1 male, 1 female: cAK): same data as holotype; 41 males, 24 females (38 males, 22 females: NMEG; 3 males, 2 females: cAK): "NE-LAOS, Hua Phan Prov., Ban Saleui, Phou Pan (Mt.), 20°12'N, 104°01'E, 1300–1900 m NN, 11.IV.–15.V. 2012, leg. C. Holzschuh"; 7 males, 6 females (NHMB): "LAOS-NE, Houa Phan Prov., ~20°13'N, 104°00'E, PHOU PANE Mt., 1.–16.vi.2009, 1350–1500, M. Brancucci leg.", "NHMB Basel, NMPC Prague LAOS 2009 Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubáč"; 1 male (NHMB): "LAOS-NE, Hua Phan prov., ~20°12'N, 104°01'E, PHU PHAN Mt., 1500-1900 m, 17.v.–3.vi.2007, M. Brancucci leg.", "NHMB Basel expedition to Laos, 2007". **VIETNAM**: 1 male (MNHN): "Tonkin, Chapa, 27.iv.1918, Jeanvoine", 1 female (MNHN): "Tonkin, Chapa, 26.iv.1918, Jeanvoine"; 1 male (MNHN): "Tonkin, Chapa, 4.vi.1917, Jeanvoine"; 1 female (NHMB): "Tonkin, Chapa, 29.iv.1918, Jeanvoine", "Naturhist. Museum Basel, coll. W. Wittmer"; 1 male (MNHN): "Tonkin, Chapa, v.1912, R. Vitalis de Saìvaza"; 2 males (NHMB): "Tonkin, Chapa", "Naturhist. Museum Basel, coll. W. Wittmer"; 1 male, 1 female (NHMB): "Tonkin, Montes Mauson, April,Mai, 2-3000', H. Fruhstorfer", "Naturhist. Museum Basel, coll. W. Wittmer"; 1 male, 1 female (cAK): same data; 1 female (NHMB): "N Vietnam, 16.v.1995, Lao Cai prov., Deo O Quy Ho, 1750m, Sa Pa, A. Shinohara"; 1 female (NHMB): "N Vietnam, 17.v.1995, Lao Cai prov., Deo O Quy Ho, 1750 m, Sa Pa, Y. Nishikawa"; 1 female (NHMB): "Vietnam N, 1990, Sa-Pa, 11.-19.VI., 1500m, Hoang Lien Son prov., Strnad Jan lgt."; 1 male (NMPC): "Vietnam N 1989 Tam Dao 12.-24.5.,Vinh Phu prov., Strnad Jan lgt.", "compared with coll. Wittmer", "Themus (s.str.) senensis (Pic), Vl. Švihla det. 1991"; 1 female (NMPC): "N Vietnam 1986 prov. Vinh Phu Tam Dao 27.5.–2.6.,V. Švihla lgt.".

Description. Male (Fig. 3). Head metallic dark blue, mouthparts black, apices of mandibles dark brown, antennomere I metallic dark blue, II metallic dark blue dorsally and orange ventrally, III–X orange, more or less darkened dorsally, XI orange and darkened apicad, pronotum yellow, with a large metallic dark blue marking in center of disc, scutellum metallic dark blue, elytra metallic green, legs metallic dark blue, prosternum yellow, meso- and metaventrites and ventral side of abdomen metallic dark blue, lateral and posterior margins of abdominal sternites II–VIII and entire sternite IX yellow. Body densely covered with light yellow short pubescence, sparsely mixed with long erect pubescence on clypeus.

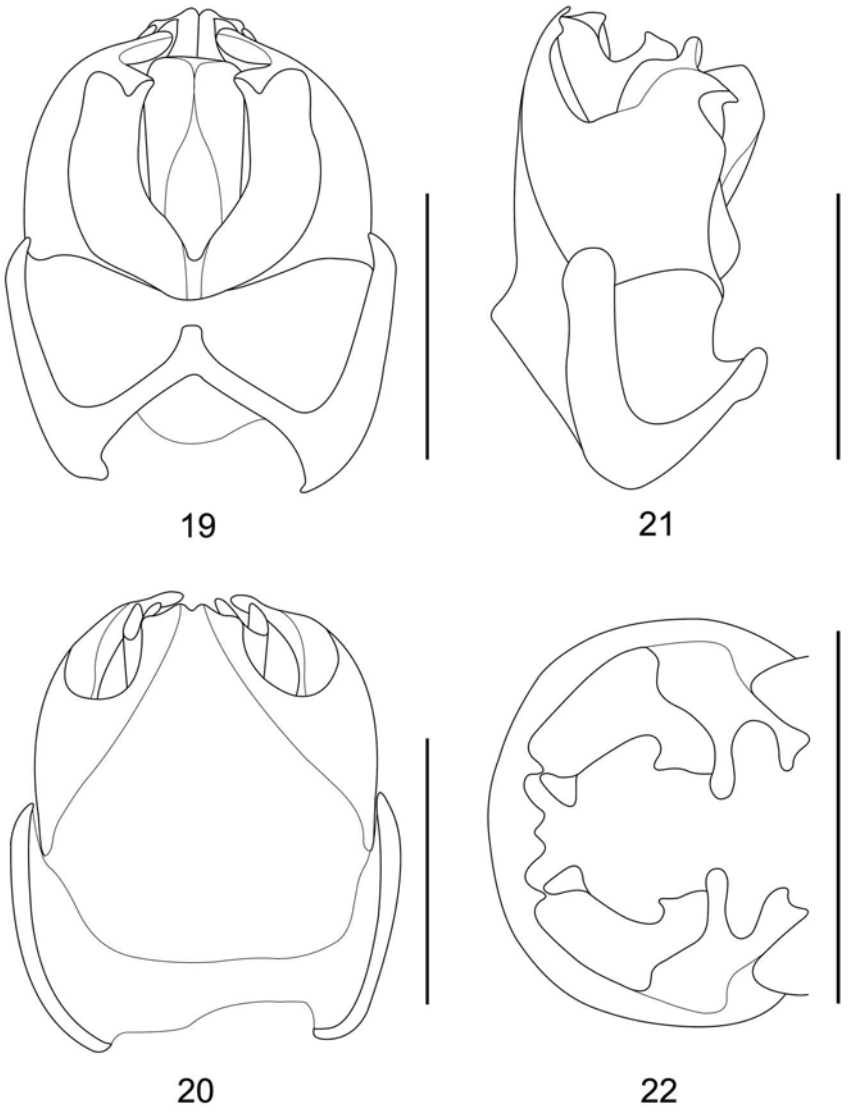
Head rounded, breadth across eyes slightly wider than anterior margin of pronotum, surface lustrous, finely and densely punctate, eyes moderately protruding, apical maxillary palpomeres nearly long-triangular, widest at apical one-third, rounded at apices, antennae subfiliform and slightly flattened, almost extending to apices of elytra, antennomere II about twice longer than wide at apex, III about one-third shorter than II, IV longest, about twice as long as III, from IV to XI gradually shortened, XI pointed at apex, IV–XI each with short narrow, smooth longitudinal or oval groove at apical part of outer margin.

Pronotum about 1.4 times as wide as long, anterior margin bisinuate, lateral margins nearly parallel, posterior margin arcuate and narrowly bordered, anterior angles nearly rectangular, posterior angles rounded, disc convex at posterolateral parts, surface lustrous, more finely and sparsely punctate than that on head.

Elytra about 4.6 times longer than pronotum, 2.8 times longer than humeral width, lateral margins distinctly converging posteriorly, apex of each elytron rounded, disc coarsely and densely punctate, semilustrous.

Legs with protarsomeres I slightly widened apicad, pro- and mesotarsomeres II–IV and metatarsomeres III–IV distinctly bilobate, remaining tarsomeres nearly parallel-sided.

Abdominal sternite IX slender. Aedeagus (Figs 9, 19–22): ventral process of each paramere bifurcated in about 45 degrees at apex, with the apex of digitation-like part pointed horizontally; conjoint dorsal plate of parameres strongly narrowed apicad, distinctly longer than ventral processes, slightly emarginate and bent ventrally in middle of apical margin, with a narrow median longitudinal ridge at apical part of inner surface, lateral angles triangular, bent ventrally and opposite to the apices of laterophyses; laterophyse with ventral part slightly protuberant and acute at apex, dorsal part distinctly longer than ventral part, normal, distinctly separated from each other, triangular in apical view.



Figures 19–22. Aedeagus of *Themus* (*T.*) *bilobatus* sp. nov.: (19) ventral view; (20) dorsal view; (21) lateral view; (22) apical view. Scale bars: 1.0 mm.

Female (Fig. 4). Similar to male, but head breadth across eyes nearly as wide as anterior margin of pronotum, eyes less protruding, antennae filiform, extending to basal one-third length of elytra, antennomeres IV–XI without grooves, pronotum slightly wider, about 1.7 times as wide as long, with lateral margins distinctly converging posteriorly, elytra with lateral margins slightly converging posteriorly, legs also with protarsomeres I distinctly bilobate, abdominal sternite VIII (Fig. 29) slightly emarginate in middle and largely emarginate on both sides of posterior margin, each side with nearly inverse-triangular depression on posterior part, of which inner margins are sclerotized and conjoint in middle, their intersection into about 60 degrees, lateral angles narrowly rounded at apices. Genitalia similar to that of *T. senensis*.

Body length: 14.0–18.5 mm; width: 3.0–5.0 mm.

Differential diagnosis. This species is similar to *T. senensis* and *T. senensomimus* sp. nov., but can be distinguished from both these species by distinctly bilobate pro- and meso-tarsomeres I or II–IV and metatarsomeres III–IV; shape of aedeagus: conjoint dorsal plate of parameres distinctly longer than ventral processes, slightly bent ventrally in middle of apical margin, with a narrow median longitudinal ridge at apical part of inner surface, laterophyse with ventral part slightly protuberant and acute at apex, dorsal part distinctly longer than ventral part, normal and distinctly separated from each other; abdominal sternite VIII of female with lateral angles narrowly rounded at apices.

Etymology. The specific name is derived from Latin prefix *bi-* (two) + *lobatus* (lobate), referring to its bilobate tarsomeres.

Distribution. Laos (Houa Phan); Vietnam (Sa Pa, Dak Lak, Vinh Phúc, Lào Cai.).

Themus* (*T.*) *dalatensis Kopetz et Y. Yang, sp. nov. (Figs 5–6, 10, 23–26, 30)

Type locality. Vietnam: Lam Dong.

Type material. Holotype, male (NHMB): "S **VIETNAM**, 12.03N 108.27E, 12 km N of Dalat – Lang Bian, 1580–1750 m, 17.–21.iv.1995, Pacholátko & Dembický leg.". Paratypes: 1 male, 3 females (2 females: NHMB; 1 male, 1 female: cAK): same data as holotype.

Description. Male (Fig. 5). Head metallic dark blue, mouthparts dark brown, apices of mandibles brown, the base paler, antennomeres I and II metallic dark blue dorsally and paler ventrally, III–XI matt black, pronotum yellow, with large metallic dark blue marking in center of disc, scutellum metallic dark blue, elytra metallic green, legs metallic dark blue, prosternum yellow, meso- and metaventrites and ventral side of abdomen metallic dark blue, lateral and posterior margins of abdominal sternites II–VIII and entire IX yellow. Body densely covered with light yellow short pubescence, sparsely mixed with long erect pubescence on clypeus.

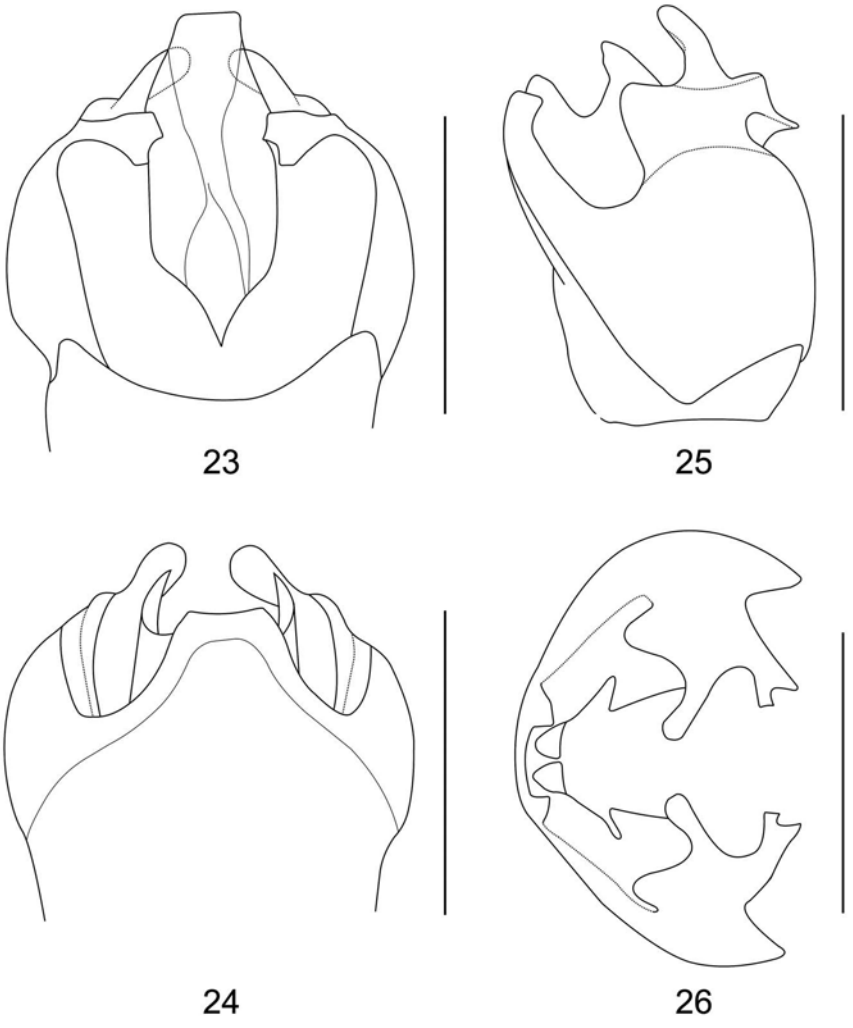
Head rounded, breadth across eyes as wide as anterior margin of pronotum, surface lustrous, finely and densely punctate, eyes moderately protruding, apical maxillary palpomeres nearly long-triangular, widest at apical one-third, rounded at apices, antennae subfiliform and slightly flatted, almost extending to apices of elytra, antennomere II about 2.5 times longer than wide at apex, III about one-third shorter than II, IV about twice as long as III, IV–VII gradually increasing, VII–XI decreasing, XI pointed at apex, IV–IX or X each with a short narrow, smooth longitudinal or oval groove at apical part of outer margin.

Pronotum about 1.4 times as wide as long, widest before middle, anterior margin bisinuate, lateral margins slightly rounded, posterior margin arcuate and narrowly bordered, anterior angles nearly rectangular, posterior angles rounded to obtuse-angled, disc convex at posterolateral parts, surface lustrous, more finely and sparsely punctate than that on head.

Elytra about 4.2 times longer than pronotum, 2.7 times longer than humeral width, lateral margins distinctly converging posteriorly, apex of each elytron rounded, disc coarsely and densely punctate, semilustrous.

Legs with protarsomeres I–II, meso- and meta-tarsomeres II slightly widened apicad, tarsomeres III–IV distinctly bilobate, remaining tarsomeres nearly parallel-sided.

Abdominal sternite IX slender. Aedeagus (Figs 10, 23–26): ventral process of each paramere bifurcated in about 60 degrees at apex, with the apex of digitation-like part pointed vertically; conjoint dorsal plate of parameres strongly narrowed apicad, slightly shorter than ventral processes, with apical margin nearly straight, lateral angles nearly triangular, bent ventrally and opposite to the apices of laterophyses; laterophyse with ventral part slightly protuberant and tapered apicad, dorsal part slightly shorter than ventral part, distinctly thickened and slightly widened in



Figures 23–26. Aedeagus of *Themus* (*T.*) *dalatensis* sp. nov.: (23) ventral view; (24) dorsal view; (25) lateral view; (26) apical view. Scale bars: 1.0 mm.

middle and leaning to each other in middle, triangular in apical view.

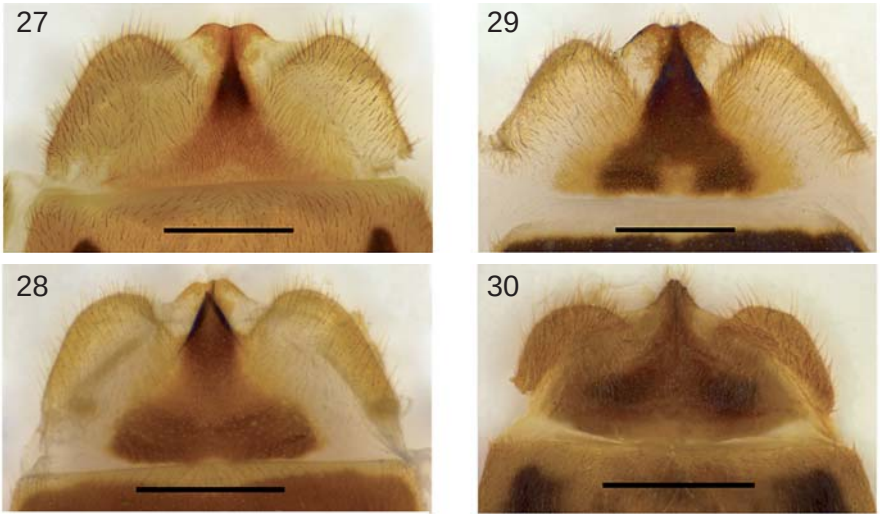
Female (Fig. 6). Similar to male, eyes less protruding, antennae filiform, extending to basal one-third length of elytra, antennomeres IV–X without grooves, pronotum slightly wider, about 1.5 times as wide as long, with lateral margins distinctly converging posteriorly, elytra with lateral margins slightly converging posteriorly, abdominal sternite VIII (Fig. 30) protruding in middle and largely emarginate on both sides of posterior margin, in middle with a sclerotized keel, lateral angles widely rounded at apices. Genitalia similar to that of *T. senensis*.

Body length: 13.1–18.5 mm; width: 3.1–4.8 mm.

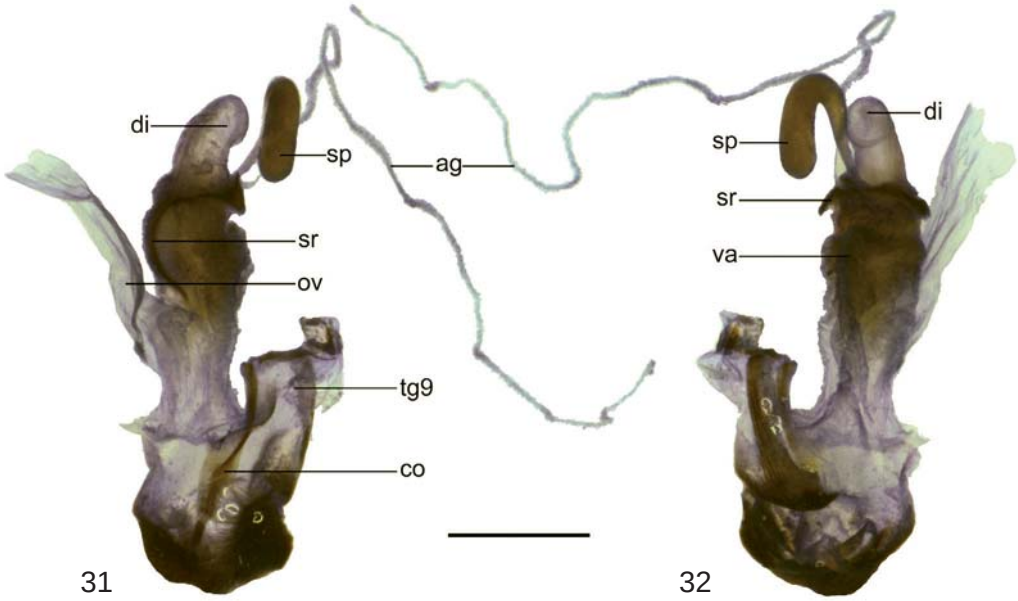
Differential diagnosis. This species is more similar to *T.* (*T.*) *senensomimus* sp. nov., but can be distinguished from the latter species by the shape of aedeagus: conjoint dorsal plate of parameres slightly shorter than ventral processes, dorsal part of laterophyses slightly shorter than ventral part, slightly widened in middle, triangular in apical view; abdominal sternite VIII of female with lateral angles widely rounded at apices and a sclerotized keel in middle.

Etymology. This specific name is derived from the type locality.

Distribution. Vietnam (Lam Dong).



Figures 27–30. Abdominal sternites VIII of female, ventral views: (27) *Themus* (*T.*) *senensis* (Pic); (28) *T.* (*T.*) *senensomimus* sp. nov.; (29) *T.* (*T.*) *bilobatus* sp. nov.; (30) *T.* (*T.*) *dalatensis* sp. nov. Scale bars: 1.0 mm.



Figures 31–32. Female genitalia of *T.* (*T.*) *senensis* (Pic) (ag – accessory gland; co – coxite; di – diverticulum; tg9 – abdominal tergite IX; sp – spermatheca; ov – median oviduct; va – vagina; sr – sclerotized ring): (31) lateroventral view; (32) laterodorsal view. Scale bars: 1.0 mm.

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