

A New Species of the Genus *Themus* Motschulsky, 1858, *T. (Haplothemus) fissus* sp. n., and a Redescription of *T. (H.) particularis* Pic, 1929 (Coleoptera, Cantharidae)

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Abstract: A new species of the subgenus *Haplothemus* Wittmer, 1973 of the genus *Themus* Motschulsky, 1858 is described: *T. (H.) fissus* sp. n. (China: Yunnan; Myanmar: Kachin). *Themus (H.) particularis* Pic, 1929 is redescribed and re-assigned from the nominotypical subgenus *Themus* to the subgenus *Haplothemus*. Its distribution is verified to be confined to Vietnam and, therefore, it has been excluded from the Chinese fauna. The descriptions presented are complemented with photos of habitus and female genitalia and illustrations of aedeagus and female abdominal sternites VIII.

Key Words: Taxonomy, *Themus*, new subgeneric assignment, new species, China, Myanmar, Vietnam

Introduction

During our study on the genus *Themus* Motschulsky, 1858, the type of a poorly known species, *T. particularis* Pic, 1929, was located in the Muséum national d'Histoire naturelle, Paris, France. Examination of the type showed that this species should be assigned from the subgenus *Themus* to the subgenus *Haplothemus* Wittmer, 1973 (sensu ŠVIHLA 2008). Moreover, an additional specimen from the type locality in Vietnam allowed us to redescribe and illustrate this species. Furthermore, a remarkable new species collected from both China and Myanmar, which is similar to *T. (H.) particularis* and *T. (H.) rufoscutus*, was described here under the name of *T. (H.) fissus* sp. n. The differences between the new species and the two previously known species are summarised below.

Materials and Methods

The material studied is preserved in the following collections, and the primary types were returned to the collections from which they were borrowed or were otherwise deposited in public museums.

CAK – private collection of Andreas Kopetz, Eischleben, 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;

ZIN – Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia.

The study method and description for-

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mat follow that of YANG, SU and KOPETZ (2014). Morphological terminology of female genitalia follows BRANCUCCI (1980) and abbreviations in the figures are listed as follows: ag - accessory gland; co - coxite; di - diverticulum; tg9 - abdominal tergite IX; sp - spermatheca; ov - median oviduct; va - vagina; sr - sclerotised ring.

Results

Themus (Haplothemus) particularis Pic, 1929, new subgeneric assignment

(Figs. 1A–B, 2E, 3)

Themus particularis Pic, 1929: 75.

Themus (s.str.) *particularis*: Delkeskamp, 1977: 38.

Type material examined. Holotype, female (MNHN): [p] “CHAPO. prov. de \ Laokey. Ht-Tonkin” [VIETNAM, Lao Cai province, Sa Pa], [h] “*Themus \ particularis \ n. sp.*”, [h] “type”, [p] “HOLOTYPUS”.

Additional material examined. One female (ZIN): “ВЬЕТНАМ горы у ША-ПА, 1600–2000, 7.8.1962г, Кабаков” [VIETNAM: Sa Pa, 1600–2000 m, 7.VIII.1962, Kabakov].

Redescription. Female (Figs. 1A–B). Head metallic dark blue, mouthparts dark brown, antennae black, antennomeres I–II metallic dark blue on dorsal sides, I orange on ventral sides, prothorax yellow, pronotum with two large metallic dark blue markings on the convex part of posterolateral parts of disc and separated on both sides of middle line, scutellum yellow. Elytra yellowish - brown, blue at humeral and apical parts, with weak shine. Legs metallic dark blue; coxae, trochanters and basal parts of femora yellow; meso- and metasterna and abdomen yellow. Body densely covered with decumbent light brown pubescence, mixed with slightly long, erect pubescence on elytra and a few long hairs along the anterior margin of clypeus.

Head rounded, sparsely and finely punctate, surface lustrous; eyes moderately protruding; head breadth across eyes slightly wider than anterior margin of pronotum; terminal maxillary palpomeres widest near the middle, arcuate and sharp at apical half parts of inner margins, rounded at apices. Antennae simple, almost extending to basal one-third length of elytra, antennomeres II about 4 times as long as wide, about 1.5 times as long as III, IV nearly as long as III, from V to XI gradually shortened in length, XI pointed at apices.

Pronotum subquadrate, about 1.19 times as wide as long; anterior margin arcuate, lateral margins slightly diverging posteriorly, posterior margin arcu-

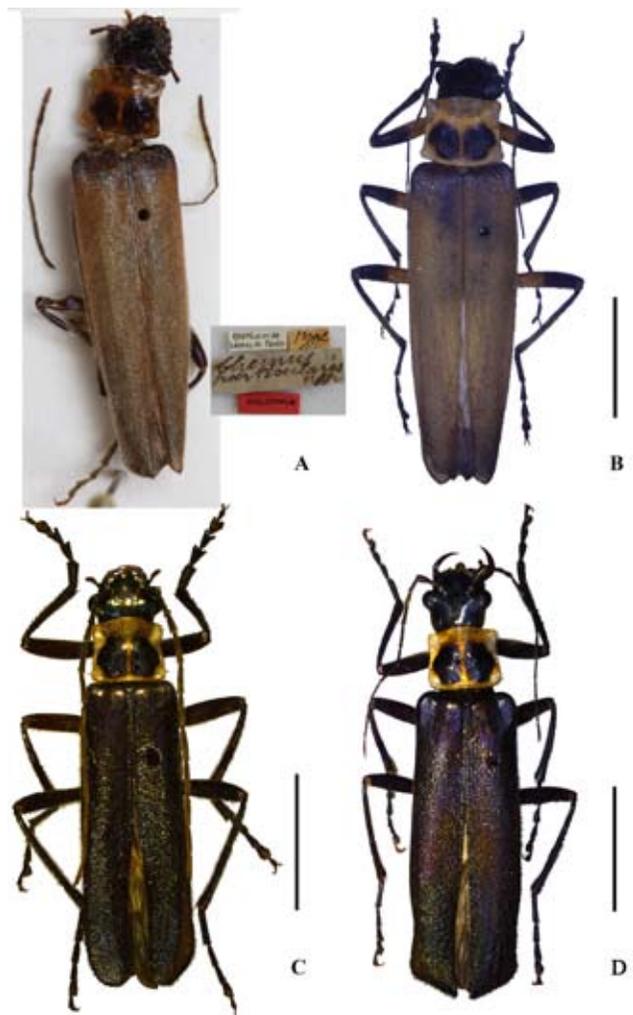


Fig. 1. Habitus, dorsal view (A, B, D. female; C. male): (A–B) *Themus (Haplothemus) particularis* Pic, 1929 (A. holotype; B. non-type); (C–D) *T. (H.) fissus* sp. n. Scale bars: 5.0 mm

ate and narrowly bordered. Anterior angles rounded, posterior angles triangular, anterior and posterior angles slightly protruding, disc slightly convex at posterolateral parts, sparsely and finely punctate like that on head, surface lustrous.

Elytra about 4 times longer than pronotum, 3 times longer than humeral width, with lateral margins nearly parallel, apex of each elytron rounded, disc densely and coarsely punctate, surface lustrous.

Abdominal sternite VIII (Fig. 2E) triangularly emarginated in middle and roundly emarginated on both sides of posterior margin. The middle emargination deeper than the lateral ones, the portions between middle and lateral emarginations rounded at apices.

Internal reproductive organ of genitalia (Fig. 3): vagina stout, with diverticulum and spermatheca situated at apex and median oviduct in middle of ventral side. Spermatheca sac-shaped and rounded

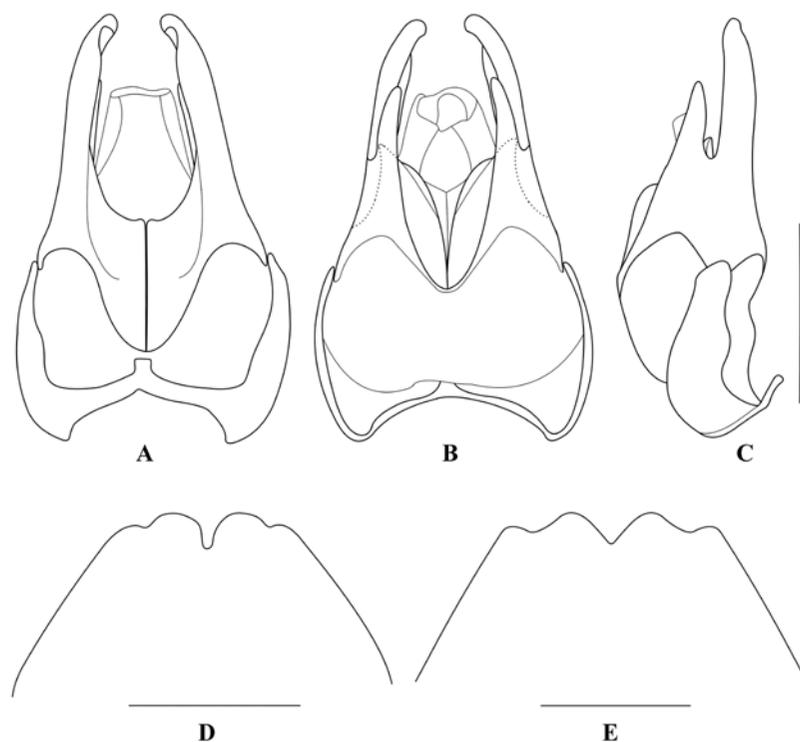


Fig. 2. (A–C) Aedeagus (A. ventral view; B. dorsal view; C. lateral view); (D–E) abdominal sternite VIII of female, ventral view: (A–D) *Themus (Haplothemus) fissus* sp. n.; (E) *T. (H.) particularis* Pic, 1929. Scale bars: 1.0 mm

at apex, distinctly expanded apically and bent in middle, provided with a moderately long and thin accessory gland at base. Diverticulum stout, hat-shaped, with apex pointed vertically. Spermatheca and diverticulum surrounded by a strongly sclerotised ring at base, which is confluent in the middle and extends to median oviduct on ventral side, the opening of spermatheca arising from the middle of the sclerotised ring on the dorsal side.

Body length (non-type female) 17.5 mm; width 4.5 mm.

Male unknown.

Distribution. Vietnam.

Remarks. During our study, the type specimen of *Themus particularis* Pic, 1929 was located in MNHN. Examination of the type showed that this species should be transferred from the subgenus *Themus* to *Haplothemus* according to the defining characters presented by ŠVIHLA (2008), including the body colouration, shapes of pronotum and elytra, which are nearly parallel-sided or slightly dilated posteriorly in females.

Moreover, according to the label information of the type and the original publication (Pic 1929), this species was collected in Vietnam, but it was recorded as occurring in China (Yunnan) by KAZANTSEV and BRANCUCCI (2007). Obviously, the distribution data in the latter study was erroneous and *T. (H.) par-*

ticularis is excluded from the Chinese fauna at the moment.

Furthermore, except for the poor original description, this species has not been treated by any studies and no more information was added to it until now. In the present study, the type and an additional specimen were available and this allowed us to redescribe and illustrate it.

***Themus (Haplothemus) fissus* Y. Yang et Kopetz, sp. n.**

(Figs. 1C–D, 2A–D, 4)

Type material. Holotype, male (MHB): China: Yunnan, Lincang, Wulaoshan Forestry, 23.910°N, 100.185°E, 2371 m, 9.–10.VII.2009, leg. Ji-Shan Xu & Jian-Xiong Zhang. Paratypes: China: three males, three females (MHB): same data as holotype; one male, two females (MHB): Yunnan, Zhenyuan, Jiujiu, 24.279°N, 101.246°E, 2160 m, 1.–3.VIII.2009, leg. Ji-Shan Xu & Jian-Xiong Zhang; two females (MHB): Yunnan, Mangkuan, Baihualing, 23.–27.VIII.2013, leg. Yang-Ju Dong; one female (MHB): Yunnan, Laoshan east slope, 8.VIII.2005, leg. Ben-Yong Mao & Ji-Shan Xu; 1 female (MHB): Yunnan, Lushui, Laowo, 1500 m, 26.–28.VII.2008, leg. Ji-Shan Xu & Zhen-Hua Gao; one female (MHB): Yunnan, Longling, Longxinheishan, 2300 m, 23.–25.VII.2008, leg. Ji-Shan Xu & Zhen-Hua Gao; 1 female (MHB):

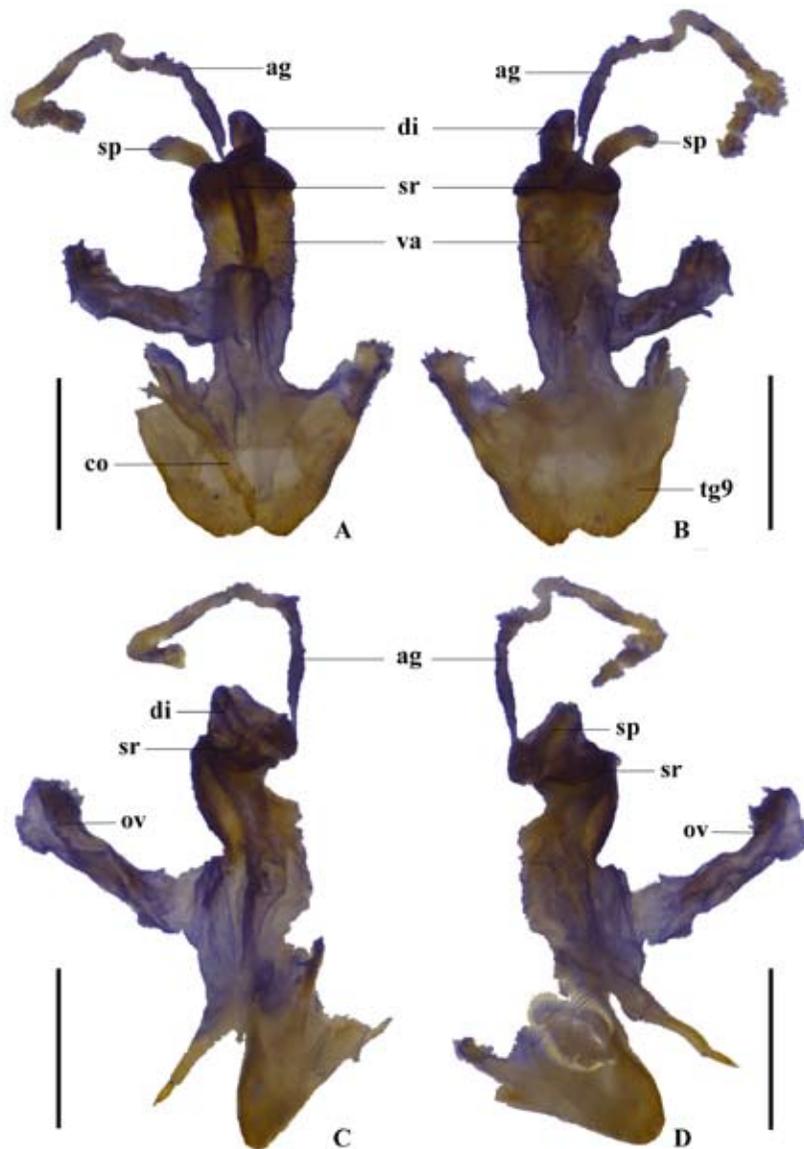


Fig. 3. Female genitalia of *Themus (Haplothemus) particularis* Pic, 1929: (A) ventral view; (B) dorsal view; (C) left lateral view; (D) right lateral view. Scale bars: 1.0 mm

Yunnan, Lushui, Yangjiaping, 25.VII.2005, leg. Ben-Yong Mao & Ji-Shan Xu; 1 female (MHB): Yunnan, Nanjian, Wuliangshan, 17.VIII.2005, leg. Hao-Yu Liu. [the above are all transliterated from Chinese labels]. One male (IZAS): "China, Yunnan, Fugong County, Lumadeng Township, South Fork Yamu He, 1.3 km E of Lao Shibali, 2250 m, 27.08180°N, 98.78670°E, 15 August 2005, beating roadside vegetation, Stop#DHK-2005-088, D.H. Kavanaugh, H.B. Liang, & J.F. Zhang collectors"; one male (IZAS): "China, Yunnan Pro., Fugong. Lumadeng, Laoshibali, plant beating, 27.07831°N, 98.77416°E, 2305 m, 2005.8.15 day, Tang Guo collector, California Academy & IOZ., Chinese. Acad. Sci."; one male (IZAS): "CHINA, Yunnan Prov., Fugong, Lishadi Town, Shibali, plants beating,

27.16520°N, 98.77980°E, 2530 m, 2005.8.10 day, Liang H.B, Zhang J.F., California Academy & IOZ., Chinese. Acad. Sci."; one male (IZAS): "CHINA, Yunnan Prov., Gongshan, Cikai, Qiqi station, light trap, 27.71812°N, 98.56905°E, 2012 m, 2007.10.1, Liang HB, Shi HL coll., California Academy & IOZ., Chinese. Acad. Sci."; one male (cAK): **Myanmar**: "Myanmar (Burma), Provinz Kachin State, ca. 30 km N von Pangwa, 29.-30.IX. + 6.X.2010, N 25°43'52.4", E 098°24'06.0", (H=2255 m; LF), leg. Michael Langer, S. Naumann & S. Löffler".

Description. Male (Fig. 1C). Head metallic dark blue, mouthparts dark brown, yellow at labium except labial palpi. Antennae black, antennomeres I-II metallic dark blue, prothorax light yellow, pronotum with two large metallic dark blue markings

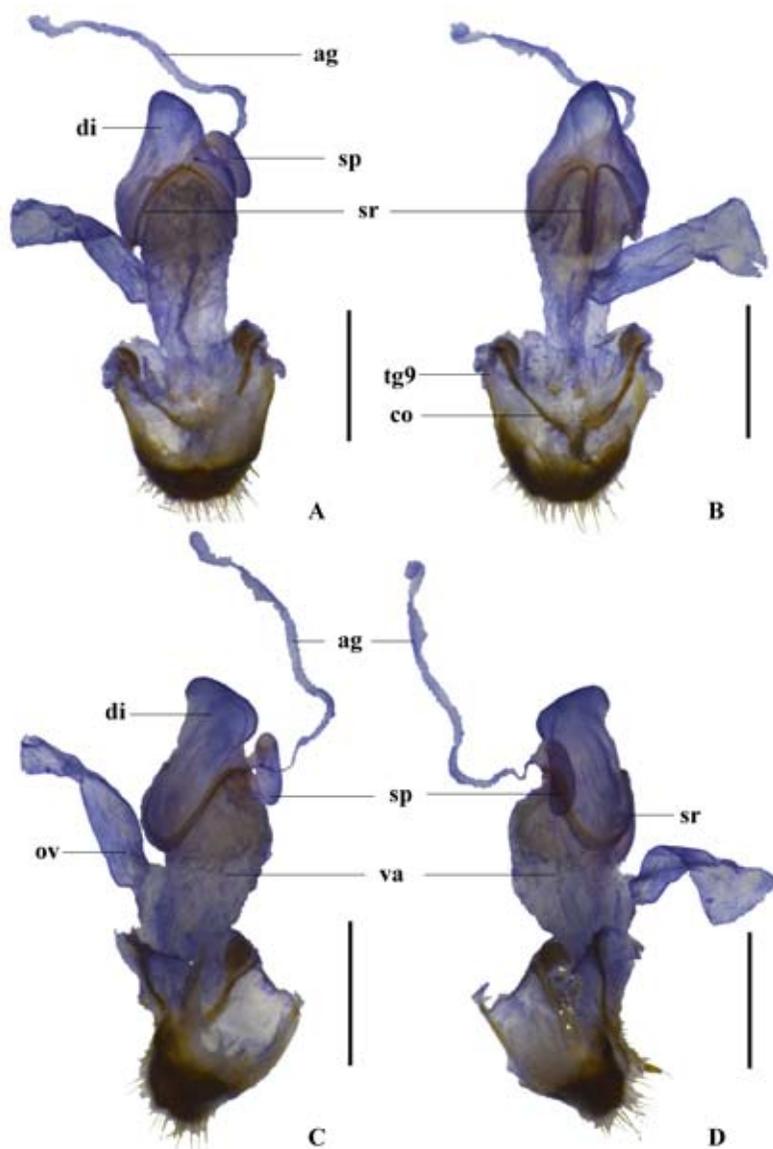


Fig. 4. Female genitalia of *Themus (Haplothemus) fissus* sp. n.: (A) dorsal view; (B) ventral view; (C) left lateral view; (D) right lateral view. Scale bars: 1.0 mm

on the convex part of posterolateral parts of disc and separated on both sides of middle line. Scutellum, elytra, legs and meso- and metasterna metallic dark green. Abdomen black, yellow at posterior margins of ventrites. Body densely covered with decumbent dark brown pubescence, mixed with slightly long, erect pubescence on elytra and a few long hairs along anterior margin of clypeus.

Head rounded, sparsely and finely punctate, surface lustrous. Eyes distinctly protruding, head breadth across eyes slightly wider than anterior margin of pronotum; terminal maxillary palpomeres nearly widest in middle, arcuate and sharp at apical half parts of inner margins, rounded at apices. Antennae simple, extending almost to basal two-thirds length of elytra, antennomeres II about 4 times

as long as wide, about 1.5 times as long as III, IV twice as long as III, V slightly longer than IV, VI–IX subequal in length and longer than X, XI slightly longer than X and pointed at apices.

Pronotum subquadrate, about 1.14 times as wide as long, anterior margin arcuate, lateral margins nearly parallel and slightly sinuate at anterior parts, posterior margin bisinuate and narrowly bordered, anterior angles nearly rectangular, posterior angles rounded, disc convex at posterolateral parts, sparsely and finely punctate like that on head, surface lustrous.

Elytra about 4.0 times longer than pronotum, 3.0 times longer than humeral width, lateral margins nearly parallel, apex of each elytron rounded, disc rugulose-lacunose and coarsely punctate, surface lustrous.

Aedeagus (Figs. 2A–C): ventral process of each paramere abruptly narrowed apically and rounded at apex, with inner apical angle slightly hooked in lateral view; conjoint dorsal plate of parameres distinctly shorter than ventral processes, deeply emarginated in middle of apical margin, with lateral parts narrow and acute at apices. Laterophyses distinctly shorter than conjoint dorsal plate, flattened and adhered to dorsal side of median lobe, confluent at basal parts, narrowed apically, with inner margin slightly protuberant in middle and lateroapical angles acute.

Female (Fig. 1D). Similar to male, but eyes moderately protruding; antennae thinner and shorter, roughly extending to basal one-half length of elytra; pronotum slightly wider, about 1.19 times as wide as long; elytra about 3.1 times longer than humeral width. Abdominal sternite VIII (Fig. 2D) deeply and narrowly emarginated in middle, and shallowly and triangularly emarginated on both sides of posterior margin, the portions between middle and lateral emarginations widely rounded at apices. Internal reproductive organ of genitalia (Fig. 4): vagina stout, with diverticulum and spermatheca situated at apex and median oviduct in middle of ventral side. Spermatheca sac-shaped and rounded at apex, distinctly expanded apically and bent in middle, provided with a moderately long and thin accessory gland at base. Diverticulum stout, boot-shaped, with apex pointed ventrally; spermatheca and diverticulum surrounded by a strongly sclerotised ring at base, which is confluent in the middle and extends to median oviduct on ventral side. Opening of the spermatheca arising from the middle of the sclerotised ring on the dorsal side.

Body length (both sexes) 13.0–19.0 mm; width 3.0–4.5 mm.

Differential diagnosis. This species is similar to *T. (H.) particularis* but differs from the latter in

the elytra uniformly metallic dark blue, abdominal sternite VIII of female deeply and narrowly emarginated in middle and shallowly and triangularly emarginated on both sides of posterior margin (while in *T. (H.) particularis*, elytra yellowish brown, blue at humeral and apical parts, with weak shine; abdominal sternite VIII of female triangularly emarginated in middle and roundly emarginated on both sides of posterior margin). It also resembles *T. (H.) rufoscutus* (Pic, 1922), but can be distinguished by the following characters: antennae simple, middle antennomeres without any impressions in male; scutellum, elytra, legs and meso- and metasterna metallic dark green, abdomen black; aedeagus: conjoint dorsal plate of parameres deeply emarginated in middle of apical margin (while in *T. (H.) rufoscutus*, antennomeres V–X each with a round to longitudinal impression near the middle of outer margin in male; scutellum, meso- and metasterna and abdomen orange, legs orange, black at apices of femora, dorsal sides of tibiae and tarsi; aedeagus: conjoint dorsal plate of parameres moderately roundly emarginated in middle of apical margin).

Etymology. The specific name is derived from Latin *fissus* (divided), referring to its aedeagus with the conjoint dorsal plate of parameres deeply emarginated in the middle of the apical margin.

Distribution. China (Yunnan), Myanmar (Kachin).

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