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Two new species of *Trigonodemus* from China (Coleoptera: Staphylinidae: Omaliinae)

Dva nové druhy rodu *Trigonodemus* z Číny (Coleoptera: Staphylinidae: Omaliinae)

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Taxonomy, Coleoptera, Staphylinidae, Omaliinae, *Trigonodemus*, Palaearctic region

Abstract. Two new species of the genus *Trigonodemus* LeConte, 1863, from China (northern Yunnan and Shaanxi) are described, illustrated and compared to other species of the genus occurring in China. A new key to the species of *Trigonodemus*, replacing the recently published key (Smetana 1996), is included.

INTRODUCTION

During recent field work in China, undertaken by the author together with J. Farkač and P. Kabátek, a remarkable new species of the genus *Trigonodemus* LeConte, 1863 was discovered in the high montane forest of the mountain range Xue Shan in northern Yunnan. One specimen of another new species, collected by M. Schülke, Berlin, in Shaanxi was also almost simultaneously forwarded for study. A review of all known species of *Trigonodemus* was published just recently (Smetana 1996) that included two new species, one from mainland China and one from Taiwan. The discovery of two additional new species in China is somewhat surprising and confirms again the enormous richness of the staphylinid fauna of the Chinese mountains. In the following, I describe and illustrate the two new species and present a new key to the species of *Trigonodemus* that includes the new species.

TAXONOMIC PART

Trigonodemus montanus sp. n.
(Figs 1-4)

Description. Piceous-brown to piceous-black, with elytral humeri indefinitely, vaguely paler, and with head becoming slightly paler anteriad; mouthparts, legs and first four antennal segments pale testaceous, remaining antennal segments piceous; entire dorsal surface without microsculpture.

Head moderately protracted anteriad; furrows on disc markedly diverging anteriad, deeply engraved, finely, rather densely and somewhat rugosely punctate, remaining portions of head with only a few moderately coarse punctures; anterior portion of head between furrows markedly convex; ocelli situated rather far apart, distance separating them distinctly larger than distance separating each ocellus from posterio-medial margin of eye (ratio 2.03); eyes very convex and large, tempora shorter than length of eyes from above (ratio 0.75). Antenna fairly long and strong, seg-

ment 3 distinctly longer than segment 2 (ratio 1.35), segment 4 slightly longer than wide, outer segments moderately longer than wide.

Pronotum in basal half moderately and in almost straight line, in apical half markedly and slightly arcuately, narrowed anteriad, anterior margin considerably narrower than basal margin (ratio 0.58); disc of pronotum on posterior half with two variably developed, irregular, mostly slightly impressed, rows of punctures diverging anteriad, rest of disc with variably developed, irregularly situated punctures; anterio-medial portion of disc distinctly convex, posterio-lateral corners of pronotum markedly flattened.

Scutellum with a few punctures on basal portion.

Elytra with striae in general distinctly engraved, gradually becoming deeper toward apex, strial punctation in general coarse, gradually becoming even coarser toward apex, intervals slightly convex on basal portion of elytra, gradually becoming more convex toward apex of elytra.

Male. Abdominal sternite 8 slightly, evenly subarcuate apically (Fig. 1); tergite 8 with distinct, obtusely triangular, medio-apical emargination (Fig. 2).

Aedoeagus (Figs 3, 4) with median lobe markedly, almost in straight line, narrowed toward apex, anteriorly with somewhat differentiated, short, triangular apical portion with narrowly arcuate apex; parameres robust, slightly curved toward median lobe anteriorly, markedly exceeding apex of median lobe, each narrowed into subacute apex bearing two apical setae (one seta rarely missing), two usually smaller setae at medial margin below apex; apical portion of each paramere with sparse, short, tooth-like structures, each bearing a minute seta, noticeable particularly at lateral margin and appearing there almost as very fine crenulation; internal sac very small and simple, without larger sclerotized structures, as in Fig. 4.

Female. Abdominal sternite 8 slightly prolonged medio-apically, with narrowly arcuate apex; tergite 8 markedly narrowed toward narrowly arcuate apex.

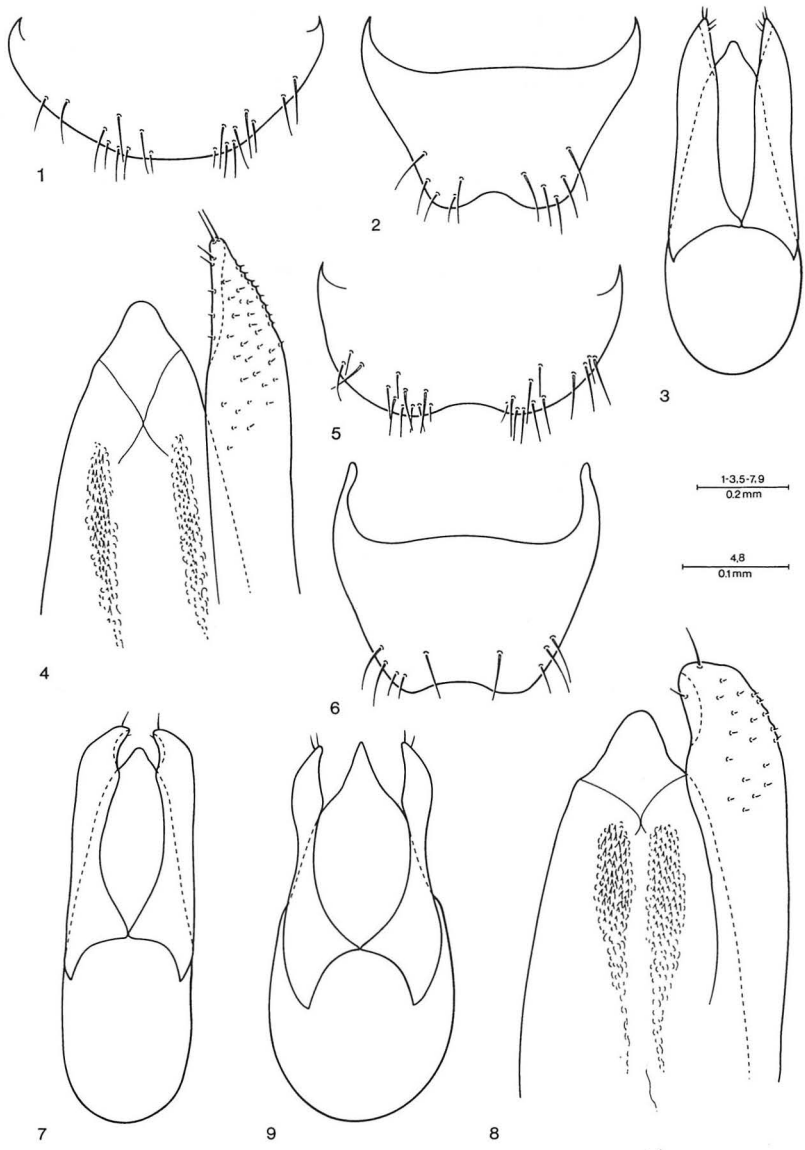
Length 3.9-4.7 mm.

Type material. Holotype (male): CHINA: "CHINA N Yunnan, Xue Shan nr. Zhongdian 4000-4100 m 23.VI.96 27 49N 99 34E C36"/"collected by A. Smetana, J. Farkač and P. Kabátek". In the collection A. Smetana, Ottawa, Canada. Allotype (female): CHINA: "CHINA N Yunnan, Xue Shan nr. Zhongdian 4050 m 24.VI.1996 27 49N 99 34E C 40"/"collected by A. Smetana, J. Farkač and P. Kabátek". In the collection A. Smetana, Ottawa, Canada. Paratypes: 4 same data as holotype but elevation 4050 m and date 24.VI.1996; 1 same data as allotype. In the collection A. Smetana, Ottawa, Canada.

Geographical distribution. *Trigonodemus montanus* sp. n. is at present known only from the Xue Shan mountain range in northern Yunnan.

Bionomics. The specimens of the original series were collected by sifting the forest floor litter in the high montane, predominantly coniferous forest with intermixed rhododendrons; it seemed to be particularly numerous in rhododendron leaf litter. It occurred in this habitat together with numerous ground beetles, such as *Bhutanotrechus farkaci* Deuve, 1994, *Nebria* sp., several species of *Leistus* Fröhlich, 1799 and *Pterostichus* Bonelli, 1810, etc., and with several species of the staphylinid genus *Quedius* Stephens, 1829.

Comparisons and comments. *Trigonodemus montanus* sp. n. appears to be closely related to *T. lebioides* (Kraatz, 1877) from Japan, but it may be easily distinguished, in addition to the different aedoeagus, by the almost uniformly piceous-brown to piceous-black coloration of the body and by the coarser strial punctation on the elytra. *Trigonodemus mirabilis* (Hlisnikovský 1962), occurring in Fujian, differs by the bicolored body, with the uniformly pale yellow elytra, con-



Figs 1-9. *Trigonodemus montanus* sp. n.: 1 - apical portion of male sternite 8. 2 - male tergite 8. 3 - aedoeagus, ventral view. 4 - apical portion of median lobe and apex of right paramere. 5-8. *T. schuelkei* sp. n.: 5 - apical portion of male sternite 8. 6 - male tergite 8. 7 - aedoeagus, ventral view. 8 - apical portion of median lobe and apex of right paramere. 9. *T. lebioides*: aedoeagus, ventral view (simplified from Watanabe 1990).

Obr. 1-9. *Trigonodemus montanus* sp. n.: 1 - apikální část 8. abdominálního sternitu samce. 2 - abdominální tergit 8 samce. 3 - aedoeagus, pohled z ventrální strany. 4 - apikální část mediálního lobu a pravé paramery. 5-8. *T. schuelkei* sp. n.: 5 - apikální část 8. abdominálního sternitu samce. 6 - abdominální tergit 8 samce. 7 - aedoeagus, pohled z ventrální strany. 8 - apikální část mediálního lobu pravé paramery. 9. *T. lebioides*: aedoeagus, pohled z ventrální strany (zjednodušeno podle Watanabeho 1990).

trasting with the dark pronotum and head. The remaining two species of *Trigonodemus*, occurring in China and Taiwan (*T. fungicola* Smetana, 1996 and *T. audax* Smetana, 1996) differ from *T. montanus* sp. n. by the coloration alone (see Smetana (1996) for details). The minute tubercles on the apical portions of the parameres (see the description and Fig. 4) also occur in other species of the genus; however, they are still smaller and hardly noticeable. *Trigonodemus montanus* is at present the largest, stoutest species of the genus.

Etymology. The specific epithet is the Latin adjective *montanus*, *-a*, *-um* (of mountains). It refers to the occurrence of this species at high mountain elevations.

Trigonodemus schuelkei sp. n.

(Figs 5-8)

Description. In all characters, including coloration, similar to *T. lebioides*, but different as follows: size slightly smaller than most (female) specimens of *T. lebioides;* pronotum entirely rufotestaceous; pronotum narrower, with lateral margins each narrowed anteriad already from base, although only slightly so in basal half (lateral margins of pronotum run almost parallel to each other in basal half in *T. lebioides*); elytra with strial punctures somewhat coarser, base of elytra around scutellum with additional punctures in intervals more numerous and coarser.

Male. Abdominal sternite 8 and tergite 8 both moderately, arcuately emarginate medio-apically (Figs 5, 6).

Aedoeagus (Figs 7, 8) with median lobe slightly, evenly narrowed toward apex in middle portion, anteriorly rather abruptly constricted into short apical portion with rather obtuse apex. Parameres robust, distinctly curved toward median lobe apically, each with lateral margin straight, medial margin unevenly bisinuate (anterior sinuation much shorter than posterior); each narrowed into obtuse apex distinctly exceeding apex of median lobe and bearing one seta at apex and one much smaller seta at medial margin below apex; internal sac without larger sclerotized structures, as in Fig. 8.

Female. Unknown.

Length 4.1 mm.

Type material. Holotype (male): CHINA: "China: Shaanxi, Qin Ling Shan 107.56 E, 33.45 N Autoroute km 93 S of Zhouzhi, 108 km SW Xian Mountain Forrest, sifted, 1650 m 1.-2.09 1995, leg. M. Schülke"/"Sammlung M. Schülke Berlin" (green paper). In the Schülke collection, Berlin, Germany.

Geographical distribution. *Trigonodemus schuelkei* sp. n. is at present known only from the type locality in Qin Ling Shan in southern Shaanxi.

Bionomics. The holotype was sifted in a montane forest, but no details are known about the habitat.

Comparisons and comments. *Trigonodemus schuelkei* sp. n. differs from *T. lebioides* mainly by the shape of the aedoeagus. The external characters, mentioned above, need to be confirmed with more numerous material. Both *T. fungicola* and *T. audax*, differ from *T. schuelkei* sp. n., in addition to the differences in the development of the aedoeagus, by the short, globular antennal segment 4, etc.

I have not seen any males of *T. lebioides*, but the aedoeagus of the species was illustrated in detail by Watanabe (1990) and the illustrations (Figs 7, 9) show that it is distinctly different from that of *T. schuelkei* sp n..

Etymology. Patronymic, the species is named in honour of my friend Michael Schülke, Berlin, who collected the holotype.

To facilitate the identification of the species of *Trigonodemus*, a new key to the species, replacing the recently published key (Smetana 1996), is presented below.

KEY TO SPECIES OF *TRIGONODEMUS*

1(4) Specimen originating in North America.
2(3) Apex of median lobe of aedoeagus truncate, with apical margin of characteristic shape; apices of parameres hardly exceeding apex of median lobe (fig. 3 in Smetana 1996). Length 3.9-4.8 mm. Eastern North America. .... *T. striatus* LeConte
3(2) Apex of median lobe acute; apices of parameres distinctly exceeding apex of median lobe (fig. 9 in Smetana 1996). Length 3.8-4.0 mm. Western North America. ..... *T. fasciatus* Leech
4 (1) Specimen originating in Asia.
5 (8) Elytra unicolored, either pale yellow, or piceous-brown to piceous-black, without distinct color markings.
6 (7) Elytra uniformly pale yellow, contrasting in color with black head and pronotum (pronotum narrowly paler along hind margin). Aedoeagus as in figs 25, 26 in Smetana 1996. Length 4.4-4.6 mm. Fujian. ..... *T. mirabilis* (Hlisnikovsky).
7 (6) Elytra piceous-brown to piceous-black, not contarsting in color from head and pronotum. Aedoeagus as in Figs. 3-4. Yunnan. ..... *T. montanus* sp. n.
8 (5) Elytra bicolored, with distinct color markings.
9 (12) Antennal segment 4 slightly longer than wide. Larger species, 4.0-4.5 mm long.
10 (11) Parameres of aedoeagus slender, with apices not exceeding apex of median lobe, each with lateral margin distinctly sinuate (Fig. 9). Japan. ..... *T. lebioides* (Kraatz)
11 (10) Parameres of aedoeagus robust, with apices distinctly exceeeding apex of median lobe, each with lateral margin straight (Fig. 8). Shaanxi. ..... *T. shuelkei* sp. n.
12 (9) Antennal segment 4 short, globular. Smaller species, below 4.0 mm. Aedoeagi different (figs 15, 21 in Smetana 1996).
13 (14) Middle portion of pronotum behind front margin with numerous, coarse punctures. Apex of median lobe acute (fig. 15 in Smetana 1996). Length 3.3-3.8 mm. Sichuan. ..... *T. fungicola* Smetana

14 (13) Middle portion of pronotum behind front margin almost impunctate (two punctures present). Apex of median lobe wide, truncate (fig. 21 in Smetana 1996). Length 3.4 mm. Taiwan. ..... *T. audax* Smetana

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SOUHRN

Práce podává popisy dvou nových druhů drabčíků rodu *Trigonodemus* z Číny. Popisy jsou doplněny kresbami důležitých znaků a oba nové druhy jsou porovnány s ostatními druhy, které jsou v současné době známé z Číny. Je připojen klíč k určení všech dosud znamých druhu rodu *Trigonodemus*.