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A new species of *Cangshanaltica* Konstantinov et al., a moss-inhabiting flea beetle from Thailand (Coleoptera: Chrysomelidae: Galerucinae: Alticini)

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<http://doi.org/10.11646/zootaxa.4107.1.7><http://zoobank.org/urn:lsid:zoobank.org:pub:6F1073DF-DBD6-4A89-BE9B-3A10871FC14D>**A new species of *Cangshanaltica* Konstantinov *et al.*, a moss-inhabiting flea beetle from Thailand (Coleoptera: Chrysomelidae: Galerucinae: Alticini)**ALBERT DAMAŠKA¹ & ALEXANDER KONSTANTINOV²¹Department of Zoology, Faculty of Science, Charles University in Prague, Viničná 7, 128 44 Praha 2, Czech Republic.E-mail: albert.damaska@natur.cuni.cz²Systematic Entomology Laboratory, USDA, ARS, c/o Smithsonian Institution, National Museum of Natural History, MRC 168, Washington DC, USA. E-mail: alex.konstantinov@ars.usda.gov

Moss cushions represent an interesting, but poorly understood habitat, which hosts many species of flea beetles (Coleoptera: Chrysomelidae: Galerucinae: Alticini). However, the diversity of moss-inhabiting flea beetles is not well studied, and collecting in tropical and subtropical locations that were not sampled in the past led to the discovery of many new species (Konstantinov *et al.* 2013). Here, a new species of a moss-inhabiting flea beetle from the genus *Cangshanaltica* Konstantinov *et al.* 2013 is described and illustrated. This genus is one of the recently described moss-inhabiting flea beetle genera and before this study, only one species was known (Konstantinov *et al.*, 2013). This publication raises the number of flea beetle species that are known to occur in moss cushions around the world to 30, distributed among 15 genera.

Material and methods

The specimens were collected by beating semi-dry moss surfaces and cushions on standing and fallen trees in a cloud forest at the highest points of Doi Inthanon, Chiang Mai province, northern Thailand. The material was extracted by using a thermoelector and conserved in pure 96% ethanol. Some specimens were mounted on triangular mounting cards points. One specimen was fully disarticulated and mounted on a microscope slide with Euparal as a mounting medium. Genitalia are preserved on mounting cards beside the specimens in a mounting medium DMHF (dimethyl hydantoin formaldehyde resin). The specimens are deposited in collections of the National Museum, Prague, Czech Republic (NMPC), National Museum of Natural History, Smithsonian Institution, Washington, DC, USA (USNM) and in the personal collection of A. Damaška (ADPC).

Taxonomy***Cangshanaltica siamensis* new species**

(Figs 1, 2)

Description. Habitus. Body length 1.94–2.21 mm, width 1.45–1.62 mm. Body oval in dorsal view, convex in lateral view. Upper side dark brown, without metallic lustre. Abdomen and legs lighter, chestnut brown (Fig. 1).

Head. Head nearly hypognathous. Vertex shiny, lacking wrinkles, with small, sparse punctures and few thin, scattered setae. Antennal calli poorly developed, triangular, their borders barely traceable. Supracallinal, midfrontal and suprafrontal sulci shallow, barely visible. Supraorbital sulcus deep and straight. Interantennal space wide. Labrum black. Maxillary palpomeres chestnut brown with yellow apices. Antennae with 11 antennomeres, antennomeres 1–4 yellow, continually darkening, antennomeres 5–10 brown, antennomere 11 lighter, yellowish-brown. Antennomere 7 with distal protrusion anteriorly. Antennomere 2 oval, ca. 1.4× longer than wide. Antennomeres 3 and 4 very thin, much thinner than antennomeres 1 and 2 each.

Thorax. Pronotum convex, in the middle 1.79 times as wide as long, with small and shallow, sparse punctures. Lateral margin with setiferous pore situated nearly in middle. Elytra convex, humeral calli absent. Punctuation of elytra fine, but coarser than that of pronotum, punctuation confused. Metathoracic wings not developed. Anterior coxal cavity open posteriorly. Third tarsomere of all tarsi long, as long or slightly longer than first tarsomere. Inner side of metatibia

with a row of teeth situated between distal 1/4 and tibial apex. Metafemur pilose. Metatibial apical spine long, reaching ca. 4/5 of first metatarsomere.

PLATE 1. Habitus of *Cangshanaltica siamensis* A—dorsal view; B—side view; C—frontal view; D—detail of antenna with marked distal protrusion on the antennomere 7.

Abdomen with 5 ventrites. Longitudinal ridge on first abdominal ventrite developed only basally and short, almost invisible. Metacoxal cavities very deep, reaching nearly mid length of the first ventrite.

Genitalia. Spermathecal pump long, receptacle narrow, slender. Vaginal palpi slender. Aedeagus long, curved in lateral view, parallel-sided from base nearly to apex, then converging apically. Orificium basale very long, arrow-shaped (Fig. 2).

Sexual dimorphism. Males generally smaller than females—male 1.94 mm long and female 2.21 mm long. Females with smoother frons, antennal calli less distinct than in males.

Differential diagnosis. We place this species in *Cangshanaltica* based on the following characters: anterior coxal cavities open posteriorly; setiferous pore placed nearly in middle of lateral pronotal margin; antennomere 7 with a distal anterior protrusion (Fig. 1); male genitalia more or less flat in lateral view with indistinct broad depression ventrally, sides parallel at basal half, gradually narrowing without well-defined denticle at apex (Fig. 2). The new species may be distinguished from *C. nigra* Konstantinov *et. al.*, 2013 based on the following characters: third tarsomeres or all tarsi long (Fig. 2), as long or slightly longer than first (in *C. nigra*, third tarsomere is significantly shorter than first, especially on metatarsi), longitudinal ridge on first abdominal ventrite very short, present only basally and hence nearly indistinct (in *C. nigra*, the ridge is long) (Fig. 2), metatibial apical spine long, reaching ca. 4/5 of first metatarsomere (in *C. nigra*,

metatibial apical spine reaches at most 1/2 of first metatarsomere), upper side of body dark brown (in *C. nigra*, the upper side is black with metallic lustre). *Cangshanaltica siamensis* can be also distinguished by the some features of male genitalia: parallel sides of aedeagus extend further apically, apex only very slightly bent ventrally (in *C. nigra* the bend is more pronounced).

Etymology. The name *siamensis* is derived from the old name for Thailand—Siam.

Type locality and ecology. Specimens of *C. siamensis* were collected by beating moss from tree trunks in a cloud forest in the summit area of Doi Inthanon, ca. at 2 500 m a.s.l. (Fig. 3). Specimens were collected in semi-dry moss during the dry season.

Type material. Holotype male. Labels: (1) THAILAND—Chiang Mai prov., Mae Chaem distr., Doi Inthanon, 18°35'10.36"N, 98°28'57.18"E, cloud forest in dry season, dry moss on trees, 6. iv. 2015, Albert Damaška lgt.; (2) HOLOTYPE *Cangshanaltica siamensis* sp nov., Albert Damaška and Alexander Konstantinov des. 2016. Paratypes have same labels as holotype. Holotype NMPC, paratypes: 1 female NMPC, 3 (1 male, 2 female) USNM, 2 (1 male, 1 female) ADPC.

PLATE 2. Comparison of genitalia and abdomen of *Cangshanaltica siamensis* and *C. nigra* Konstantinov *et al.*, 2013—A—aedeagus of *C. nigra* in dorsal and side view; B—spermatheca of *C. nigra*; C—vaginal palpi of *C. nigra*; D—abdomen of *C. nigra*; E—aedeagus of *C. siamensis* in dorsal and side view; F—spermatheca of *C. siamensis*; G—vaginal palpi of *C. siamensis*; H—abdomen of *C. siamensis*; I—tignum of *C. nigra*; J—tignum of *C. siamensis*; K—hind leg of *C. siamensis*; L—detail of elytral sculpture of *C. siamensis*.

PLATE 3. A, B—Habitat of *Cangshanaltica siamensis* in Doi Inthanon, Chiang Mai, Thailand; C—distribution of *Cangshanaltica* (red—*C. siamensis*, blue—*C. nigra*).

A key to known species of the genus *Cangshanaltica*

- 1 Longitudinal ridge on the first abdominal ventrite very indistinct and short, third tarsomere of all tarsi as long or longer than first, upper side dark brown without metallic lustre. Parallel sides of aedeagus extend further apically, apex only very slightly bent ventrally *C. siamensis*
- Longitudinal ridge on the first abdominal ventrite long, reaching almost apical margin of the ventrite, third tarsomere of metatarsi distinctly shorter than first, upper side black with metallic lustre. Parallel sides of aedeagus shorter, do not extend close to apex, apex strongly bent ventrally *C. nigra*

Discussion. The finding of *Cangshanaltica* in Thailand shows a wider distribution of the genus in southeastern Asia. Further studies are needed to clarify, whether the distributional range is disjunctive, or if it's more continuous. However, because of the fact that moss-inhabiting flea beetles are still vastly understudied, it seems probable that other species of *Cangshanaltica* will be described from southeastern Asia in the future. The map of the known distribution of the genus *Cangshanaltica* is shown in Fig. 3.

The collecting of the specimens in semi-dry moss changes our previous ideas about the phenology of moss-inhabiting flea beetles. During the former moss-inhabiting flea beetle collecting events, it seemed that the collecting success depends on wetter conditions. Collecting of *C. siamensis* shows, that adult stages of moss-inhabiting flea beetles are able to survive the dry season in the moss cushion.

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