

Two new earwigs (Dermaptera: Anisolabididae) from Bi Dup – Nui Ba National Park, Vietnam

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Две новые уховертки (Dermaptera: Anisolabididae) из национального парка Бидуп – Нуйба, Вьетнам

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Abstract. Two new representatives of the genus *Mongolabis* Zacher, 1911 are described from Bi Dup – Nui Ba National park, South Vietnam. A detailed morphological description of *M. tarbinskyi* **sp. nov.** and *M. dilatatus* **sp. nov.** are given. The material studied, including holotypes of the new species, is kept at the collection of the Zoological Institute, Russian Academy of Sciences, Saint Petersburg.

Key words. Earwigs, Dermaptera, Anisolabididae, taxonomy, morphology, new species, South-East Asia.

Резюме. Два новых представителя рода *Mongolabis* Zacher, 1911 описываются из национального парка Бидуп – Нуйба, Южный Вьетнам. Для новых видов *M. tarbinskyi* **sp. nov.** и *M. dilatatus* **sp. nov.** дается подробное морфологическое описание. Весь изученный материал, включая голотипы новых видов, хранится в коллекции Зоологического института РАН в Санкт-Петербурге.

Ключевые слова. Уховертки, Dermaptera, Anisolabididae, таксономия, морфология, новые виды, Юго-Восточная Азия.

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Introduction

The genus *Mongolabis* Zacher, 1911 includes wingless earwigs of a similar appearance, which cannot be reliably identified without studying the structure of the male genitalia. The geophilic mode of life and winglessness apparently limits the ability to spread and contributes to the formation of a large number of species with a local distribution.

The author follows the previously described methods (Anisyutkin, 2020; Anisyutkin, Think, 2022). All earwigs were collected, studied and kept in 70 % ethanol. All studied earwig specimens, including the holotypes, are deposited at the collection of the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg (ZIN).

Systematics

Family Anisolabididae Verhoeff, 1902

Subfamily Anisolabidinae Verhoeff, 1902

Genus *Mongolabis* Zacher, 1911

Type species: *Gonolabis woodwardi* Burr, 1906, by subsequent designation (Burr, 1911).

Note. I principally follow Srivastava (1999) in understanding the genus *Mongolabis*, with the clarifications used by me earlier (Anisyutkin, 2020).

Mongolabis tarbinskyi sp. nov.

<https://zoobank.org/6E889CB1-F00C-49D8-8207-69E1B969AB19>

(Figs 1–12)

Type material. *Holotype*: male, VIETNAM, Lam Dong Prov., Lac Duong Distr., Bi Dup – Nui Ba Nature Reserve, 12°10' N, 108°40' E, 1400–1900 m, 1–22.IV.2008 (D. Fedorenko) [expedition of Russia-Vietnam Tropical Centre] (ZIN). *Paratype*: 1 female, same data as for holotype (ZIN).

Description. *Male* (holotype). General colour yellowish-brown with following pattern: head from above, partly abdomen and cerci slightly darker, dark reddish brown; thoracic tergites and partly abdomen reddish-brown; eyes black; antennae, maxillary and labial palpi, paranotalia, thoracic sternites and proximal parts of femora dirty brown but partly yellowish; distal parts of femora, tibiae and tarsi dirty yellowish. Surfaces of body smooth and shining; meso-, metanotum as well as abdominal tergites and sternites densely but very finely punctate.

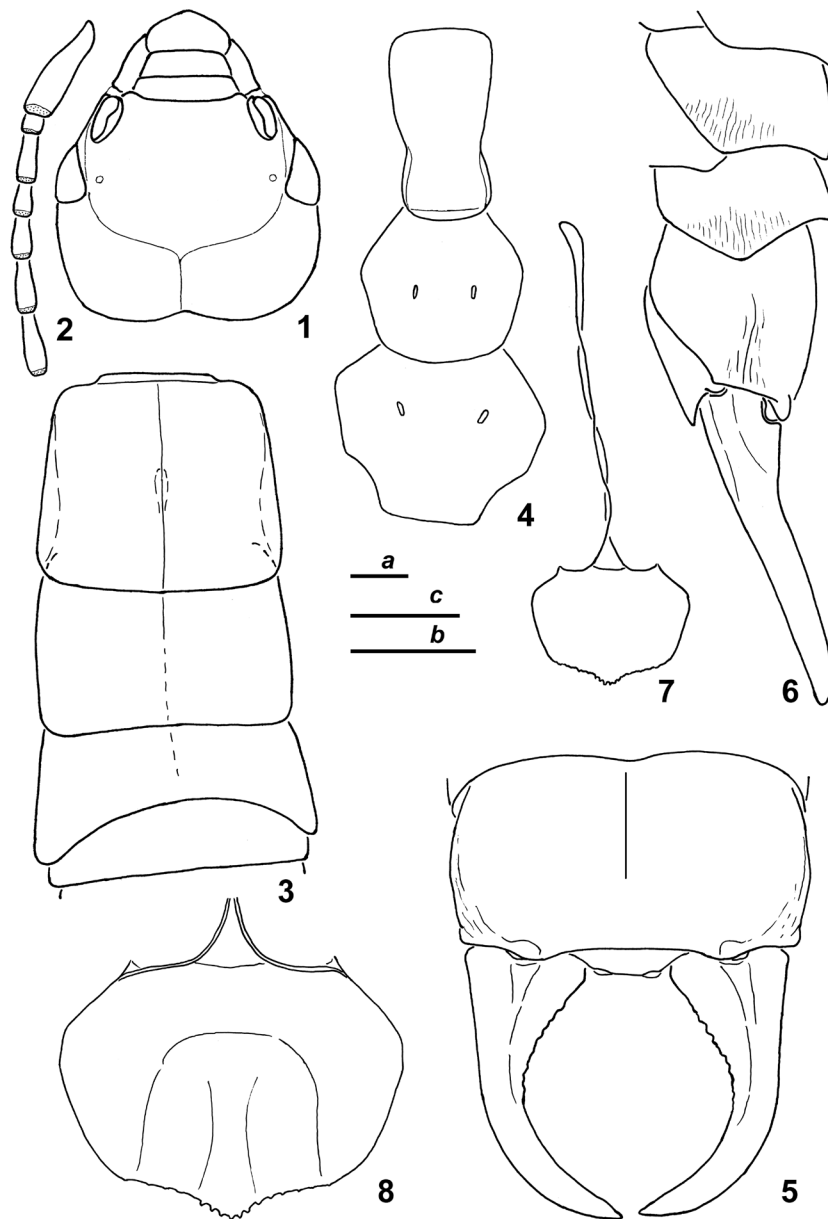
Head slightly longer than wide (Fig. 1), moderately convex; frons and vertex weakly separated; epicranial sutures [= coronal and frontal cleavage *sensu* Neubert et al. (2017)] weak but distinct; eyes small, about half as long as postocular space; ocelli in shape of small light round spots; posterior margin of head weakly emarginate. Preserved parts of left and right antennae (their apical parts broken) with 12 and 15 segments, respectively; scapus (Fig. 2) almost as long as distance between antennal sockets; protrusion for articulation of scapus with pedicellus present; pedicellus subquadrate; all other antennal segments elongated; length ratio of 1st–7th segments about 6.8 : 1.0 : 3.0 : 2.0 : 2.4 : 3.2 : 3.6, but succeeding segments about as long as 7th segment and approximately equal in length.

Pronotum slightly wider than long, with pro- and metazone not separated (Fig. 3); anterior and lateral edges nearly straight, but posterior margin very weakly rounded; median groove weak but distinct, with one slight elongated depression in middle. Tegmina and wings absent. Meso- and metathorax without lateral carinae. Mesothorax with subobsolete median groove and straight posterior margin (Fig. 3). Metathorax shorter and wider (Fig. 3) as compared with mesothorax, with median groove indistinct. Thoracic sternites (Fig. 4): prosternum elongate, with anterior margin nearly straight, anterolateral angles rounded, lateral margins converging approximately to posterior 1/3 of sternite length, posterior margin widely rounded, and furcal pits indistinct; mesosternum almost as long as wide, with posterior margin rounded, and furcal pits distinct; metasternum wider than long, with posterior margin truncate, and furcal pits distinct. Fore femora weakly thickened.

Abdomen moderately flattened, gradually widened from 1st to 4th segments, but more distally with almost parallel sides. Tergites II and III without lateral tubercles. Lateral parts of tergites VII–IX striated relief (Fig. 6). Tergite X transverse (Fig. 5), flattened, rugose laterally (Fig. 6), with distinct lateral carinae; small processes of Xth tergite located above bases of cerci, posterior margin of this tergite nearly straight between processes, and with weak median groove on dorsal side of Xth tergite. Cerci short, longer than abdominal tergite X, nearly straight in lateral view (Figs 5, 6), symmetrical and roundly arcuate; both cerci with weak obtuse denticles in basal half of inner margin. Genital plate with long manubrium, about 3.0 times as long as genital plate (Fig. 7); genital plate almost widely oval in shape (Fig. 8), widening in proximal third, narrowing in rest part, almost truncated posteriorly and with small posteromedian projection having very small trigonal denticles.

Male genitalia well sclerotized, symmetrical (Figs 9, 10). Proximal stalk long, more than 5.0 times as long as meta- and proparameres combined, basally widened, with a pair of elongate basal vesicles. Metaparameres short and wide, slightly longer than wide; their outer margins with distinct angular protrusion; their caudolateral margins (between apices and angular protrusions) weakly convex; their apices barely attenuate. Proparameres more heavily sclerotized laterally, separated along about 1/5 of their length, with distinct sclerite situated along line of their junction. Genital lobes (in everted station) slightly shorter than proparameres, with two small sclerites at base of each lobe; right genital lobe (everted in holotype) with internal numerous denticles or papillae; left genital lobe (partly retracted into proparamere in holotype) with unclear internal structure. Virga visible in only right genital lobe and proparamere (Fig. 10, *vi.*), without visible accessory sclerotized structures.

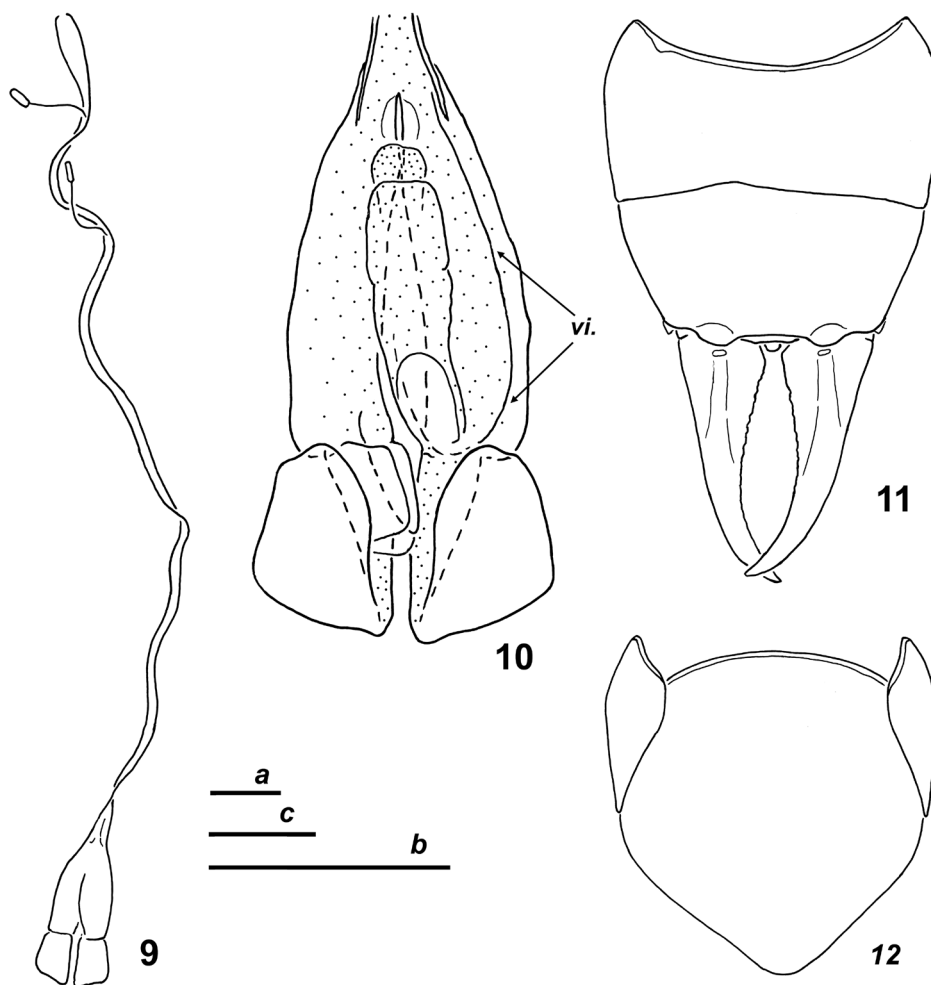
Female. Similar to male, but with some differences: lateral margins of abdominal tergites VII–IX not striated; abdominal tergite X distinctly narrowed caudally (Fig. 11), without lateral carinae and striations; cerci more weakly curved (Fig. 11); distal half of genital plate triangular in shape, with narrowly rounded apex (Fig. 12).



Figs 1–8. *Mongolabis tarbinskyi* sp. nov., holotype, male: 1 – head, dorsal view; 2 – proximal part of left antenna; 3 – thorax and 1st abdominal tergite, dorsal view; 4 – thoracic sternites, ventral view; 5 – abdominal apex, dorsal view; 6 – abdominal apex (hypandrium removed), lateral (from left) view; 7 – hypandrium with manubrium, ventral view; 8 – hypandrium without manubrium, ventral view. Scale bars = 1.0 mm: *a* – for 7; *b* – for 1–4, 8; *c* – for 5, 6.

Measurements in mm. Length of head: male 2.2, female 2.3; width of head: male 2.0, female 2.0; length of pronotum: male 2.0, female 2.1; width of pronotum: male 2.2, female 2.2; width of mesonotum: male 2.4, female 2.3; width of metanotum: male 2.6, female 2.6; length of fore / middle / hind femora: male 1.7 / 2.0 / 2.7, female 1.8 / 1.9 / 2.5; width of abdominal tergite X: male 3.2, female 2.9; length of cerci: male 2.6, female 2.5. Width of head measured in widest place, immediately behind eyes.

Comparison. *Mongolabis tarbinskyi* sp. nov. readily differs from all its congeners in peculiar shape of the male genital plate: its posterior margin is with a posteromedian projection having a few denticles (Figs 7, 8). The new species is similar to *M. woodwardi* Burr, 1908, described from Australia (Sakai, 1987), but differs from it in shape of the male genital plate (“broad and rounded” in *M. woodwardi*; Burr, 1908, cited after Sakai, 1987). *Gonolabis minor* Borelli, 1926, known from Java (Sakai, 1987), has somewhat



Figs 9–12. *Mongolabis tarbinskyi* sp. nov., holotype, male (9, 10) and paratype, female (11, 12): 9 – genitalia with proximal stalk; 10 – genitalia without proximal stalk, dorsal view; 11 – abdominal apex, dorsal view; 12 – genital plate and lateral parts of abdominal tergite VII, ventral view. Membranous areas dotted. Scale bars = 1.0 mm: *a* – for 9; *b* – for 10; *c* – for 11, 12.

similar shape of the male genital plate, but this species differs from *M. tarbinskyi* sp. nov. in the absence of denticles on this plate (Sakai, 1987). Symmetrical and arcuate cerci seem to be more characteristic of the genus *Gonolabis* (see Sakai, 1987), but according to the male genitalia structures (Srivastava, 1999) the new species undoubtedly belongs to the genus *Mongolabis*.

Etymology. The new species is named after famous Russian orthopterologist S.P. Tarbinsky (1902–1942).

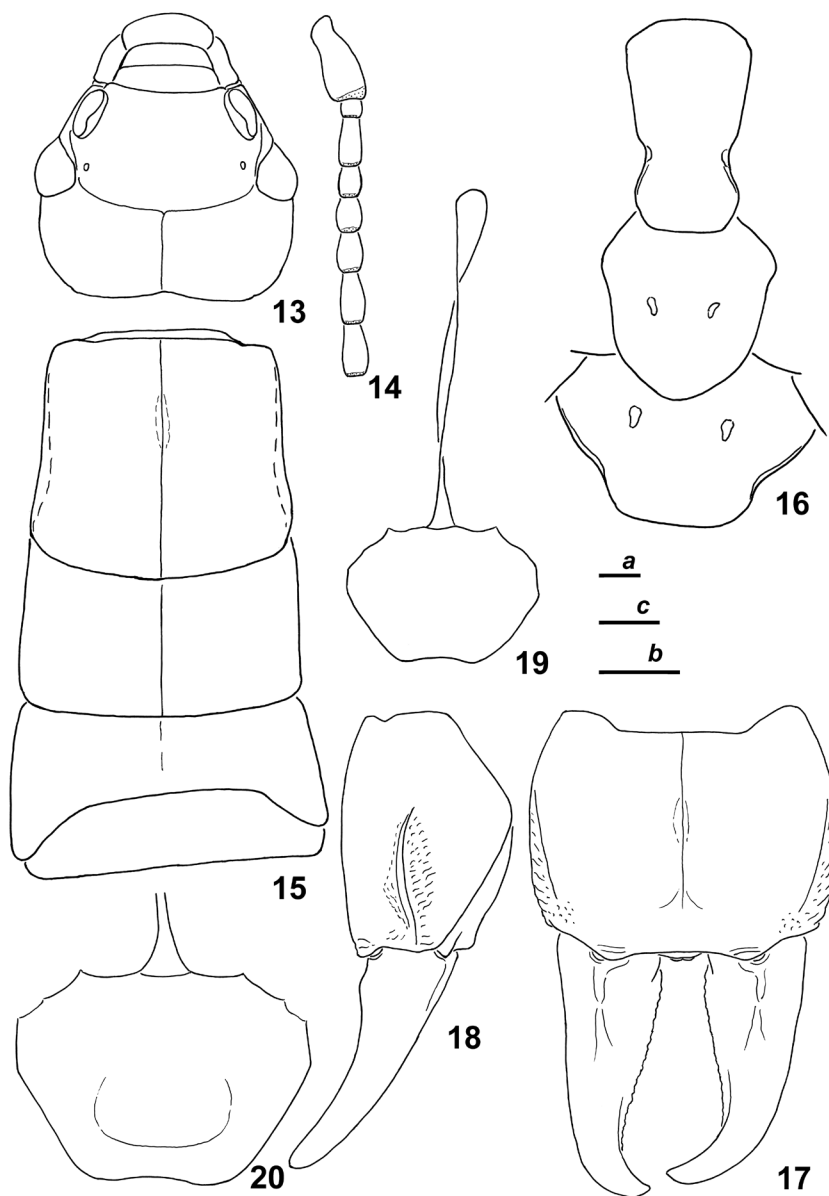
***Mongolabis dilatatus* sp. nov.**

<https://zoobank.org/D231931B-7950-4DB5-AD18-B84DD099ED45>

(Figs 13–24)

Type material. *Holotype*: male, VIETNAM, Lam Dong Prov., Lac Duong Distr., Bi Dup – Nui Ba Nature Reserve, 5 km NE of Long Lanh Village, Giang Ly Forest Station, 12°10'58.62" N, 108°40'48.96" E, 1400 m, 20.VI–4.VII.2022 (L. Anisyutkin) (expedition of Russia-Vietnam Tropical Centre). *Paratypes*: 1 female, same data as for holotype (ZIN); 1 male, same data but 12°11'01" N, 108°40'53" E, 1660 m, 11–21.VI.2018 (ZIN).

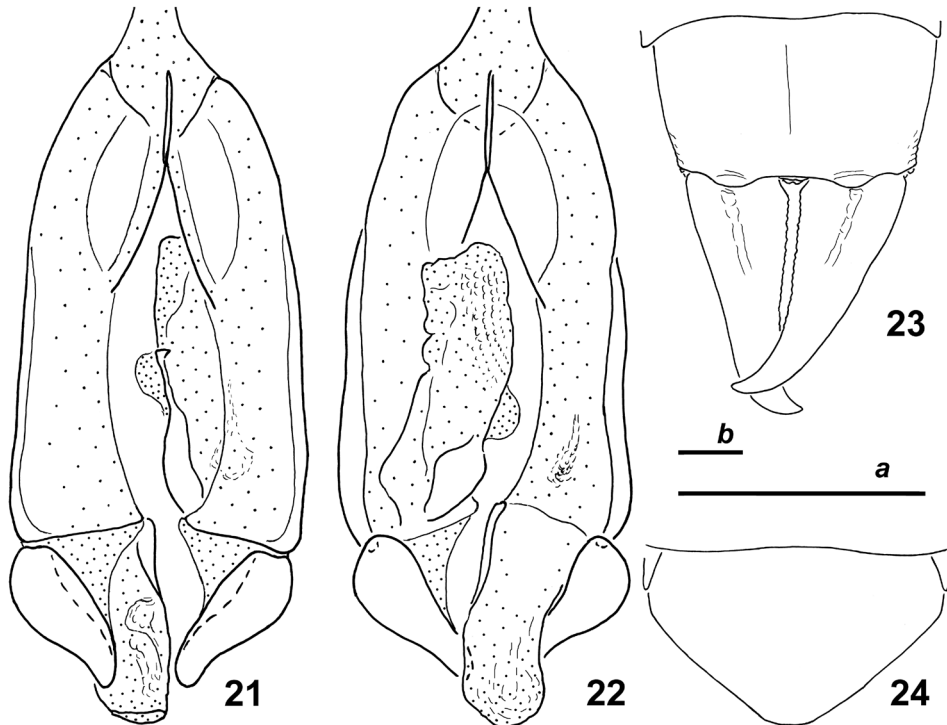
Description. *Male* (holotype). General colour dark reddish-brown with some marks: head from above, pro- and mesonotum as well as abdominal tergite X with cerci blackish; eyes black; scapus dark brown, rest part of antennae (except for pale



Figs 13–20. *Mongolabis dilatatus* sp. nov., holotype, male: 13 – head, dorsal view; 14 – proximal part of right antenna; 15 – thorax and 1st abdominal tergite, dorsal view; 16 – thoracic sternites, ventral view; 17 – abdominal apex, dorsal view; 18 – abdominal apex (hypandrium removed), lateral (from right) view; 19 – hypandrium with manubrium, ventral view; 20 – hypandrium without manubrium, ventral view. Scale bars = 1.0 mm: a – for 19; b – for 13–16, 20; c – for 17, 18.

14th segment) greyish brown; mouthparts (except for yellowish apical parts of 3rd and 4th segments of maxillary palps) brownish; thoracic sternites and legs yellowish. Surfaces of body smooth and shining; abdominal tergites I–IX and sternites densely but finely punctate; abdominal tergite X with sparsely punctation.

Head about as long as wide (Fig. 13); frons moderately convex; frons and vertex weakly separated; epicranial sutures [= coronal and frontal cleavage *sensu* Neubert et al. (2017)] weak but distinct; eyes small, in length about 0.8 as postocular space; ocelli in shape of small light round spots; posterior margin of head weakly emarginate. Preserved parts of left and right antennae (their apical parts broken) with 12 and 19 segments, respectively; scapus (Fig. 14), slightly shorter than distance between antennal sockets; protrusion for articulation of scapus with pedicellus present; pedicellus subquadrate; right antenna with 3rd segment elongated, as well as 4th and 5th segments short and subspherical (length ratio of 1st–7th segments about 4.0 : 1.0 : 2.0 : 1.2 : 1.4 : 1.8 : 2.0); left antenna abnormal (see Notes), with 3th–7th segments more elongated (length ratio of 1st–7th segments about 4.0 : 1.0 : 2.6 : 1.8 : 2.0 : 2.4 : 2.6), but succeeding segments about as long as 7th segment and approximately equal in length.



Figs 21–24. *Mongolabis dilatatus* sp. nov., holotype, male (21, 22) and paratype, female (23, 24): 21, 22 – genitalia, ventral (21) and dorsal (22) views; 23 – abdominal apex, dorsal view; 24 – genital plate and lateral parts of abdominal tergite VII, ventral view. Membranous areas dotted. Scale bars = 1.0 mm: *a* – for 21, 24; *b* – for 23, 24.

Pronotum slightly wider than long, gradually widened caudally, with pro- and metazone not separated (Fig. 15), anterior edge straight, lateral edges very weakly concave, and posterior margin rounded; median groove weak but distinct, with a slight elongated depression in the middle. Tegmina and wings absent. Meso- and metathorax without lateral carinae; mesothorax with distinct median groove and barely rounded posterior margin (Fig. 15); metathorax shorter and wider than mesothorax (Fig. 15), with median groove indistinct. Thoracic sternites (Fig. 16): prosternum elongate, with anterior margin nearly straight, anterolateral angles truncated, lateral margins converging approximately to posterior 1/3 of sternite length, posterior margin straight, and furcal pits indistinct; mesosternum almost as long as wide, with posterior margin rounded and projecting, and furcal pits distinct; metasternum wider than long, with posterior margin truncate, and furcal pits distinct. Fore femora thickened.

Abdomen moderately flattened, gradually widened caudally. Tergites II and III without lateral tubercles. Lateral margins of tergites VII–IX weak striated relief. Tergite X transverse (Figs 17, 18), moderately flattened, rugose laterally (Fig. 18), with distinct lateral carinae, small processes located above bases of cerci, posterior margin nearly straight between processes, and distinct median groove. Cerci short, almost as long as abdominal tergite X, barely curved in lateral view (Fig. 18), with roundly curved and slightly asymmetrical distal parts (in dorsal view), and weak dentition along inner margins (Fig. 17). Genital plate with long manubrium, which almost 2.3 times longer than rest of genital plate (Fig. 19); genital plate subtrapezoidal in shape (Fig. 20), narrowed caudally, with wide shallow depression ventrally, and posterior edge almost truncate but shallowly and widely emarginated.

Male genitalia well sclerotized, symmetrical (Figs 21, 22). Proximal stalk long, broken out in holotype, basally widened, with a pair of elongate basal vesicles. Metaparameres slightly longer than wide; their outer margins widely rounded; their caudolateral margins (between apices and rounded protrusions) distinctly concave; their apices distinctly attenuate. Proparameres more heavily sclerotized laterally, separated along about 1/4 of their length, with distinct sclerite situated along line of their junction. Genital lobes shorter than proparameres, with two sclerites at base of each lobe; left genital lobe (everted in holotype) with medial membranous lobule and internal numerous denticles or papillae; right genital lobe (partly retracted into proparamere in holotype) with unclear internal structure. Virga in both genital lobes and proparameres indistinct, without visible accessory sclerotized structures.

Variation. Male paratype is distinctly smaller in size and more lightly coloured (general colour reddish brown) than holotype; proximal stalk more than 10.0 times as long as meta- and proparameres combined.

Female. Similar to male, but lateral margins of abdominal tergites VII–IX not striated, abdominal tergite X distinctly narrowed caudally (Fig. 23) as well as without lateral carinae and striations, cerci weakly curved, and genital plate triangular in shape and with narrowly truncated apex (Fig. 24).

Measurements in mm. Length of head: male 2.8–3.2 (3.2), female 3.0; width of head: male 2.4–2.9 (2.9), female 2.8; length of pronotum: male 2.6–3.1 (3.1), female 2.9; width of pronotum: male 2.8–3.2 (3.2), female 3.0; width of mesonotum: male 2.9–3.3 (3.3), female 3.2; width of metanotum: male 3.4–3.7 (3.7), female 3.6; length of fore / middle / hind femora: male 2.2–2.5 (2.5) / 2.5–2.8 (2.8) / 3.2–3.5 (3.5), female 2.4 / 2.7 / 3.4; width of abdominal tergite X: male 4.0–5.0 (5.0), female 4.2; length of cerci: male 3.4–4.5 (4.5), female 4.4. Width of head measured in widest place, immediately behind eyes. Measurements in parenthesis are those of holotype.

Comparison. The peculiar shape of the metaparameres (elongated, with outer margin widely rounded, caudolateral margin between apices and rounded protrusions concave, and apices blunt and distinctly attenuated) in the new species is somewhat similar to those of *M. incurvatus* (Anisyutkin, 1998), *M. nigrocapitatus* (Anisyutkin, 1998), *M. papulosus* (Anisyutkin, 1998) and *M. foveolatus* (Anisyutkin, 1998). *Mongolabis dilatatus* **sp. nov.** readily differs from these species (Anisyutkin, 1998) in the following features:

– from *M. incurvatus*: in uniformly yellow femora (*vs.* bicoloured, with proximal half brown, and distal one yellow), a caudally attenuated mesosternum (*vs.* widely rounded), the absence of lateral keels on the male abdominal tergites VII–IX (*vs.* distinct lateral keels present on the male abdominal tergites VII–IX);

– from *M. nigrocapitatus*: in uniformly dark proximal part of the antennae (*vs.* first three antennal segments yellow), the pronotum distinctly widened caudally (*vs.* pronotum is not widened caudally);

– from *M. papulosus*: in the surfaces with moderate punctation (*vs.* surfaces are with strong punctation), the pronotum subsquare, almost as long as wide (*vs.* transverse), strong lateral carinae on the male tergite X (*vs.* these lateral carinae are absent);

– from *M. foveolatus*: in larger size, the surfaces with only moderate punctation (*vs.* surfaces uneven and granulate), weakly emarginate caudal margin of the male genital plate (*vs.* widely emarginate).

Etymology. The new species is named after shape of the male genital plate caudal margin, from the Latin “dilatatus” (broadened).

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