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A new bee species of *Panurginus* from Central China (Hymenoptera, Anthophila, Andrenidae)

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A b s t r a c t : A new bee species of *Panurginus* is described from Central China. *Panurginus nigrichinensis* nov.sp. fits well in the *P. niger* group of small species with characteristic male genitalia with narrow gonostylus and inside bent and triangularly enlarged penis valve.

K e y w o r d s : *Panurginus*, *P. niger* species group, East Palearctic, new bee species

Introduction

The bee genus *Panurginus* NYLANDER, 1848 has a Holarctic distribution, and over 35 species are known in the Palearctic region. The East Palearctic species consist mainly of two groups, the *P. montanus* group and the *P. niger* group. In the latter, six species were included by ROMANKOVA & ASTAFUROVA (2011) and a new one described by HOPFENMÜLLER (2022). The characteristic genitalia with narrow gonostylus and inside bent and triangularly enlarged penis valve can be found in all species of the *P. niger* group except for *P. arsenievi* ROMANKOVA & ASTAFUROVA, 2011 which was only provisionally put in this group (ROMANKOVA & ASTAFUROVA 2011). All the species are quite small (4.5-8 mm) and females of the group are very uniform in appearance with only small differences in most morphological characters. An overview of important characters to distinguish between the species of the *P. niger* group is given in HOPFENMÜLLER (2022).

Material and Methods

During the extensive study of Palearctic *Panurginus* specimens an undescribed species of the *P. niger* group was discovered in the entomological collection of the Oberösterreichisches Landesmuseum Linz (OLML). The extensive series of specimens was found under the label of *Panurginus nigripes* MORAWITZ, 1880 (det. S. Patiny, 2001) but could be easily distinguished from this species with the identification key and drawings of ROMANKOVA & ASTAFUROVA (2011) who did not even place *P. nigripes* in the *P. niger* group. Photographs were made with a Nikon AZ100M camera and images were processed using the software NIS-Elements Microscope Imaging.

Abbreviations used in the text: F = flagellomere, S = sternum, T = tergum.

Results

The study of the *P. niger* group revealed that the species described here can be separated by unique characters within the group, both in males and females. The new species was collected on the same dates and at the same locations as the type material of *Lasioglossum lisa* EBMER, 1998 and *L. tessaranotatum* EBMER, 1998 (only "Ganguyi"), for details see EBMER (1998).

Panurginus nigrichinensis nov.sp. (Figs 1-10)

Type material: Holotype: ♂, China, 17-18.06.1996, Ganguyi, 35 km NE of Yanan, N 36,8° E 110,3°, leg. J. Halada (Coll. OLML). Paratypes (76♂♂, 148♀♀, Coll. OLML): 59♂♂, 116♀♀ same dates as Holotype; 9♂♂, 21♀♀, 29-30.05.1996, Jingangling, 50 km W Linfen, N 36,2° E 111,7°, leg. J. Halada; 8♂♂, 11♀♀, 13-14.05.1996, Suide env., N 37,3° E 110,7°.

Diagnosis: *Panurginus nigrichinensis* nov.sp. fits well in the *P. niger* group with narrow gonostylus and inside bent and triangular enlarged penis valve. The males can be separated by the characters of genitalia and pregenital sterna, especially the margin of sternit 7 that is not bilobed like in the other species of the group but with a single broad extension that is slightly extended at the end. The females of *P. nigrichinensis* nov.sp. are quite similar to *P. niger* NYLANDER, 1848 and *P. muraviowi* ROMANKOVA & ASTAFUROVA, 2011 with terga quite shiny and only scattered punctures but have a very densely punctured vertex. A unique character of the females within the *P. niger* group is a small (sometimes indistinct) groove in the middle of the clypeus.

Description of male:

Body length: 5.5-6.5 mm.

Shape: Head transverse (Fig. 2). F1 conical, slightly longer than wide apically, F2 and following slightly longer than wide. Labral plate widely rounded with median depression. Facial fovea very small and inconspicuous. Hind basitarsus 2.5-3 times as long as wide. Metasomal terga with marginal zones depressed and slightly rounded, becoming smaller towards sides. Marginal zones of T2 and T3 in the middle about two third the length of discs.

Pregenital sterna & genitalia (Figs 4-5): S6 with posterior margin with a medially elevated extension. The extension almost straight at the end, with a row of hairs and a tiny spine at each corner. S7 with a similar extension like S6, but extension longer and slightly extended at the end and without spines. S8 neck with only very small lateral flaps and the triangular apical plate only slightly bent outside (similar to *P. niger*). Gonostylus narrow, mostly parallel-sided (slightly smaller basally), apically rounded, after one third of length bent inward. Penis valve at the middle of its length bent inside, triangularly enlarged and at the end pointed, ventrally with long erect hairs.

Sculpture: Body generally shiny. Lower part of face shiny with punctures mostly 1-2 diameters apart, upper part of face strongly shagreened and punctures almost not visible. Scutum and scutellum with punctures 1-3 diameters apart. Metasomal terga with fine punctures on discs 1-2 diameters apart, sparser on first and last terga. Marginal zones of terga without punctures. Basal and marginal zones of terga slightly shagreened.

Coloration: Wing veins brownish. Clypeus yellow. The front leg partly yellow, especially front side of tibia and tip of femur. All basitarsi mostly yellow, whereas tarsomeres 2-5 mostly brownish.



Figs 1-5: Male of *Panurginus nigrichinensis* nov.sp.; (1) habitus in lateral view, (2) head in frontal view, (3) habitus in dorsal view, (4) genitalia, (5) metasomal sterna: sternum 6 (left), sternum 7 (middle), sternum 8 (right).

Description of female:

Body length 5.5-6.5 mm.

Shape: Head slightly transverse (Fig. 7). F1 conical, slightly longer than wide apically, F2 and F3 shorter than wide, F4 to 6 slightly shorter than wide, the other flagellomeres about as long as wide, but last one longer than wide. Labral plate widely rounded to slightly trapezoid, with median depression. Facial fovea straight, slightly enlarged to upper end, moderately depressed. Metasomal terga with marginal zones depressed (medially very little) and enlarged medially. Marginal zones of terga about the length of discs or slightly longer.



Figs 6-10: Female of *Panurginus nigrichinensis* nov.sp.: (6) habitus in lateral view, (7) head in frontal view, (8) habitus in dorsal view, (9) clypeus with median groove, (10) vertex with dense punctures between lateral ocellus and upper end of eye.

Sculpture: Body generally shiny. Lower part of face with scattered punctures, mostly 2-4 diameters apart, only lateral parts of clypeus and close to eyes 1-2 diameters apart. Clypeus in the middle with longitudinal groove (Fig. 9), which is small or indistinct in some specimens. Upper part of face partly shagreened, punctures 1 diameter or less apart, on vertex between lateral ocellus and upper end of eye partly very dense, almost without interspaces (Fig. 10). Scutum and scutellum with punctures mostly 1-2 diameters apart on

discs, on posterior margin of scutum and anterior margin of scutellum punctures smaller and denser. Metasomal terga with very fine punctures on discs, mostly 2-4 diameters apart (on T2 slightly denser than on the other terga). Marginal zones without punctures. Basal and marginal zones of terga slightly shagreened, on T4 also on disc.

Coloration: Wing veins brownish, costal vein and stigma (especially on inner margin) dark brown. Antenna underneath orange or brownish brightened, only flagellomeres 1 and 2 completely dark. Tarsomeres brownish, at the end mostly brighter.

D i s t r i b u t i o n : Central China: Northeastern part of the Chinese province Shaanxi (Suide, Ganguyi) and the neighbouring part of the province Shanxi (JinGangling).

E t y m o l o g y : As the described species belongs to the *P. niger* group and was collected in China, the Latin words were combined to *nigrichinensis*.

Zusammenfassung

Eine neue Bienenart aus der Gattung *Panurginus* wird aus Zentral-China beschrieben. *Panurginus nigrichinensis* nov.sp. gehört genitalmorphologisch zur *P. niger*-Gruppe, mit einem schmalen Gonostylus und einer eingedrehten, am Ende dreieckig verbreiterten Penisvalve.

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