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Two new species of *Veraphis* Casey from China (Coleoptera, Scydmaenidae)

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Abstract. Two new species of *Veraphis* Casey (Scydmaeninae, Eutheiini), *V. spinosus* n. sp. and *V. modestus* n. sp., are described. The type material has been collected in Western Sichuan, and this is the first report of the occurrence of *Veraphis* in China. Diagnostic characters, including male copulatory organs, are illustrated.

Key words: entomology, taxonomy, new species, Scydmaenidae, Eutheiini, *Veraphis*, East Palearctic, China.

INTRODUCTION

Thirteen species and subspecies of *Veraphis* have been known to occur in Palearctis. Only one is known from the Western part of the region (Scandinavia); most species inhabit Japan (Jałoszyński & Hoshina 2005). As all Eutheiini, species of *Veraphis* are rare, and certainly what is known about distribution of the genus is highly incomplete. The occurrence of several species in Japan, Russian Far East, and North Korea, suggested a high chance of discovery of *Veraphis* in China. Indeed, materials recently collected in the mountains of Western Sichuan by Andreas Pütz, and kindly sent to me for study, included several specimens belonging to this genus. Two new species are described below, and the general distribution of *Veraphis* is therefore extended to subhimalayan areas of the Chinese Tibet. These two interesting species have been collected at altitudes 3500-4300 m, which is the highest known vertical range of this mysterious genus.

The type material is deposited in the private collection of Andreas Pütz (Eisenhüttenstadt, Germany; here abbreviated as CAP).

Veraphis spinosus n. sp.

(Figs. 1, 3, 5, 7, 8)

Name derivation

The name refers to the slender and pointed projection of the protrochanter in males of the new species.

Diagnosis

This species is unique in having protrochanters in males modified to form a long and sharp spine. Female characters remain unknown.

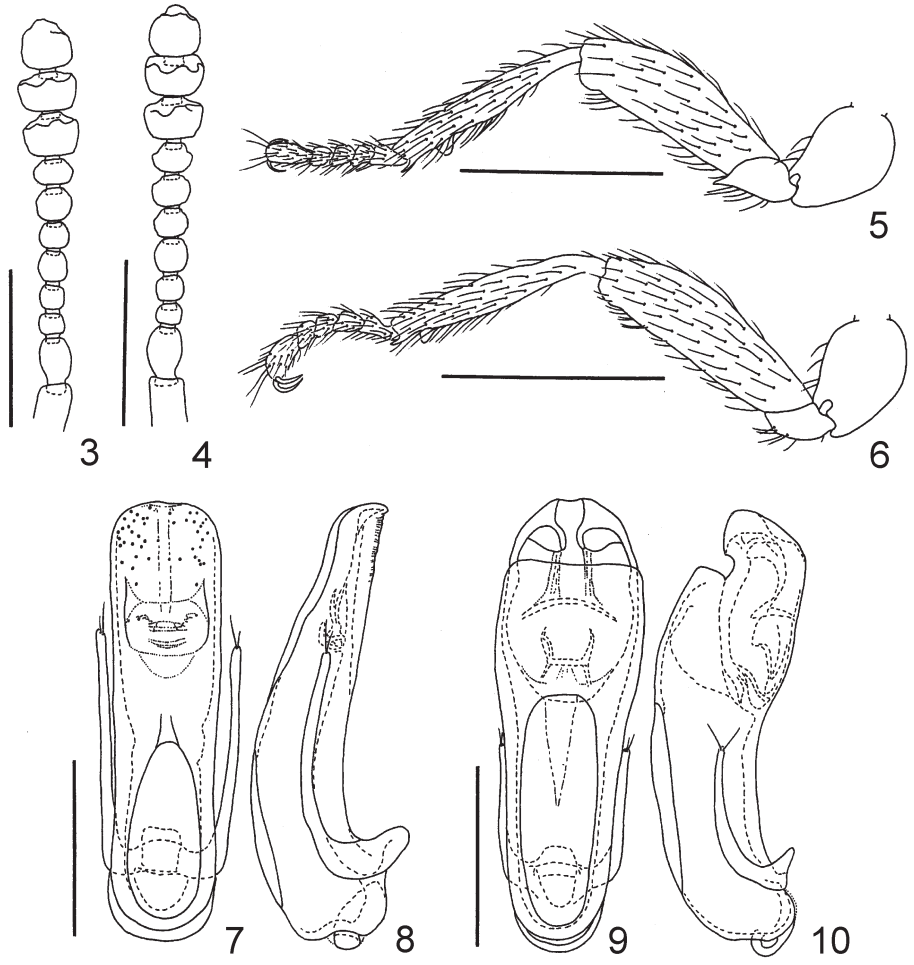
Description

Male (Fig. 1). Body length (without pygidium) 1.20 mm, pigmentation moderately light brown, setation pale yellowish. Head much broader than long, widest at large and very convex, finely faceted eyes, length 0.15 mm, width 0.22 mm. Tempora very short, arcuate; vertex broad and very short, with pair of large and deep pits close to occipital constriction; frons large and weakly convex; supraantennal tubercles indistinct. Punctation on frons and vertex unevenly distributed, composed of distinct, but small and

1, 2. Habitus of holotype males: 1 – *Veraphis spinosus* n. sp.; 2 – *Veraphis modestus* n. sp. Actual lengths (without the pygidium): 1 – 1.20 mm; 2 – 1.07 mm

shallow punctures, sparse on sides of frons, denser on its median part, where punctures are separated by spaces about equal to puncture diameters; setation sparse but relatively long, setae are suberect to erect. Antennae as in Fig. 3, length 0.52 mm.

Pronotum broadest slightly anterior to middle, length 0.35 mm, width 0.35 mm. Anterior and lateral margins rounded, sides very distinctly narrowing from broadest place toward obtuse and blunt hind angles; posterior margin biemarginate, in middle strongly expanded posteriorly; ante-basal row of pits reduced, only lateral pits (one near each hind angle) are distinct. Punctation of pronotal disc composed of moderately large, but very shallow and indistinctly delimited punctures, which are very unevenly distributed, distances between large punctures in median part of disc are comparable to puncture diameters; setation sparse, moderately long, suberect.



3, 5, 7, 8. *Veraphis spinosus* sp. n.; 4, 6, 9, 10. *Veraphis modestus* sp. n. Left antenna of male in dorsal view (3, 4), and left front leg of male in lateral view (5, 6); 7-10. Aedeagus in dorsal (7, 9) and lateral (8, 10) views (scale bars for 3-6: 0.2 mm, 7-10: 0.1 mm)

Elytra oval, elongate, broadest near middle, length 0.70 mm, width 0.47 mm, EI (elytral index; length / combined width) 1.49. Basal pit on each elytron large, located slightly closer to scutellum than to humerus; narrow adscutellar area is sharply delimited from remaining surface of elytra; apex of each elytron truncated. Punctation similar to that on pronotum but punctures are shallower and less distinct; setation moderately long and dense, suberect. Scutellum small, subtriangular, with rounded apex, glossy. Hind wings entirely missing.

Metasternum with very indistinct median flattening.

Legs slender, moderately long, with apex of each protrochanter prolonged to form a sharp spine, and with small subapical lobe on protibiae (Fig. 5).

Aedeagus (Figs. 7, 8) 0.25 mm in length, elongate, slender, in dorso-ventral view with nearly parallel lateral margins and broadly rounded apex, in lateral view median lobe is distinctly curved and narrowing from base to apex; parameres moderately long, very slender, each with pair of apical setae.

Female. Unknown.

Type material

Holotype (male): white printed label "CHINA, Prov. Sichuan, Ganzi Tibetian Auton. Pref., Litang Co., Shaluli Shan, Abies-Forest-Rest, 25km NW Litang, 30.17.23N, 90.30.97E, 4300m, 1.VII.1999, leg. A. Pütz", and red printed label "*VERAPHIS spinosus* m., det. P. JAŁOSZYŃSKI, 2007, HOLOTYPUS" (CAP).

Distribution

China: W Sichuan.

Remarks

Veraphis spinosus is morphologically closest to the *Veraphis sawadai*-group, which comprises two Japanese species: *V. sawadai* Jałoszyński & Hoshina and *V. kurbatovi* Jałoszyński & Hoshina. The three species share a very similar shape and details of the aedeagus, antennae, metasternum and protibiae. However, the both Japanese species have notched apex of the median lobe and non-modified trochanters, whereas *V. spinosus* has the aedeagus with rounded apex and uniquely modified protrochanters. This species is certainly closely related to the *sawadai* group, but more detailed analyses are necessary to clarify relationships within the genus.

***Veraphis modestus* n. sp.**

(Figs. 2, 4, 6, 9, 10)

Name derivation

The name refers to a very limited set of male secondary sexual characters in the new species compared to those typical for other members of the genus.

Diagnosis

Morphology of this species is very unremarkable; the following set of characters can be used to identify males of *V. modestus*: anterior margin of head subtrapezoidal;

protrochanters non-modified; protibiae with subapical lobe; metasternum regularly convex, without impression; aedeagus with very short parameres, and short apical part of median lobe.

Description

Male (Fig. 2). Body length (without pygidium) 1.07 mm, pigmentation light brown, setation pale yellowish. Head much broader than long, widest at large, moderately convex, finely faceted eyes, length 0.15 mm, width 0.20 mm. Tempora very short, bent at obtuse angle; vertex broad and very short, with pair of small pits located nearly in occipital constriction and connected by transverse groove, pits are prolonged anteriorly by very indistinct, shallow and short grooves; frons nearly flat in middle, its lateral parts are distinctly convex; supraantennal tubercles indistinct. Punctation on frons and vertex unevenly distributed, composed of indistinct, small and shallow punctures with diffused margins, distinctly denser in median part of frons than on sides and on vertex; setation sparse but relatively long, setae suberect to erect. Antennae as in Fig. 4, length 0.50 mm.

Pronotum broadest in anterior third, length 0.30 mm, width 0.32 mm. Anterior and lateral margins rounded, sides strongly narrowing from broadest place toward obtuse and blunt hind angles; posterior margin nearly straight; lateral ante-basal pits large but shallow, base of pronotum bears distinct median transverse groove. Punctation of pronotal disc composed of moderately large, but very shallow and indistinctly delimited punctures, which are very unevenly distributed, distances between punctures in median part of disc are from slightly shorter than puncture diameters up to 2-3x as long; setation sparse, moderately long, suberect.

Elytra oval, elongate, broadest slightly anterior to middle, length 0.62 mm, width 0.45 mm, EI 1.38. Basal pit on each elytron small, located closer to scutellum than to humerus; narrow adscutellar area on each elytron is sharply delimited from remaining surface of elytra; apices truncated. Punctation similar to that on pronotum but punctures are slightly more distinct; setation moderately long and dense, suberect. Scutellum small, subtriangular, with rounded apex. Hind wings not studied due to fragile condition of the only known specimen.

Metasternum regularly convex, very glossy, with no trace of impression.

Legs slender, moderately long, with small subapical lobe on protibiae (Fig. 6).

Aedeagus (Figs. 9, 10) 0.50 mm in length, elongate, slender, in dorso-ventral view median lobe is distinctly broadening from base to apical half, apex rounded with shallow median emargination, in lateral view short apical part is separated by dorsal excavation or constriction; parameres very short, each bears pair of apical setae.

Female. Unknown.

Type material

Holotype (male): white printed label "CHINA: W-Sichuan, Aba Tibetian Aut. Pref., Weizhou Co., Qionglai Shan, Wolong valley, 69 km WSW Guanxian, 3500m, 30.53,57N, 102.58,63E, 15.VII.1999, leg. A. Pütz, mix forest sifting", yellow printed label "Sammlung Andreas Pütz, Eisenhüttenstadt", and red printed label "*VERAPHIS modestus* m., det. P. JAŁOSZYŃSKI, 2007, HOLOTYPUS" (CAP).

DISTRIBUTION

China: W Sichuan.

REMARKS

This species is most similar to *V. japonicus* (K. SAWADA) and *V. tottoriensis* JAŁOSZYŃSKI & HOSHINA, both known to occur in Japan. Together with two more Japanese species: *V. odaigaharensis* JAŁOSZYŃSKI & HOSHINA and *V. hisamatsui* JAŁOSZYŃSKI & HOSHINA, all of them, including the new species, belong to the *japonicus*-group, which is characterized by well separated antennal club composed of 3 antennomeres, no sexual dimorphism in the shape of antennae, males with non-modified trochanters, and protibiae with the subapical lobe; the metasternum with the median impression (reduced in *V. modestus*), and the aedeagus in lateral view with separated apex, without apical setae. Members of this complex are very similar one to another and difficult to identify. The Chinese species differs from *V. japonicus* in having much shorter apical part of the median lobe. Aedeagi of *V. hisamatsui* and *V. odaigaharensis* in dorso-ventral view are distinctly constricted near middle, whereas the median lobe of *V. modestus* is broadest in apical half, and narrowing toward base without constriction. The most similar aedeagus of *V. tottoriensis* has much shorter parameres; the head of this species is also distinctly different in shape. The anterior margin of the head in *V. tottoriensis* is subtriangular, whereas in the Chinese species this margin is flattened in middle and hence subtrapezoidal (like in most other species in the genus).

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