Entomotaxonomia (2013) 35(1): 35–40 ISSN 1000–7482

A new species of the subgenus *Meligethes* Stephens (Coleoptera: Nitidulidae) from Sichuan, China

CHEN Ying[1, 4], Alexander G. KIREJTSHUK[2, 3①], HUANG Min[1①]

1. *Key Laboratory of Plant Protection Resources and Pest Management of Ministry of Education, Entomological Museum, Northwest A&F University, Yangling, Shaanxi 712100, China*
2. *Zoological Institute of the Russian Academy of Sciences, Universitetskaya emb., 1, St. Petersburg, 199034, Russia*
3. CNRS UMR 5202, Muséum National d'Histoire Naturelle, CP 50, Entomologie, 45, rue Buffon, 75005 Paris, France
4. Key Laboratory of Zoological Systematics and Evolution, Institute of Zoology, Chinese Academy of Sciences, Beijing 100101, China

Abstract: *Meligethes* (*Meligethes*) *pallidoelytrorum*, Chen *et* Kirejtshuk sp. nov. is described and illustrated from Sichuan, China. It can be readily distinguished from related species by the smoothed dorsal integument, diffused and sparse punctations on elytra and the very distinct tooth at base of the claw. *Meligethes* (*Meligethes*) *lutra* Solsky, 1876, syn. nov. and *M.* (*M.*) *melleus* Grouvelle, 1908, syn. nov. are proposed as the synonymies of *M.* (*M.*) *vulpes* Solsky, 1876.

Key words: Polyphaga; Cucujoidea; *Meligethes*; synonymy
CLC number: Q969.48^{+}5.1 **Document code**: A
Article ID: 1000-7482(2013)01-0035-06

中国四川菜花露尾甲亚属一新种（鞘翅目：露尾甲科）

陈 莹[1, 4]，Alexander G. KIREJTSHUK[2, 3①]，黄 敏[1①]

1. 植保资源与病虫害治理教育部重点实验室，西北农林科技大学昆虫博物馆，陕西 杨凌 712100; 2. Zoological Institute Russian Academy of Sciences, St. Petersburg, 199034, Russia; 3. CNRS UMR 5202, Muséum National d'Histoire Naturelle, CP 50, Entomologie, Paris, 75005, France; 4. 中国科学院动物进化与系统学重点实验室，中国科学院动物研究所，北京 100101

摘要：记述采自中国四川省的菜花露尾甲属菜花露尾甲亚属 1 新种：淡翅菜花露尾甲 *Meligethes* (*Meligethes*) *pallidoelytrorum* Chen & Kirejtshuk sp. nov.。对其特征作了描述，提供了成虫形态及雌雄外生殖器特征图。新种的主要鉴别特征为：虫体背部体表光滑，鞘翅具稀疏的刻点，跗爪基部具明显的齿。并提出滑菜花露尾甲 *M.* (*M.*) *lutra* Solsky, 1876 和蜜菜花露尾甲 *M.* (*M.*) *melleus* Grouvelle, 1908 是长唇菜花露尾甲 *M.* (*M.*) *vulpes* Solsky, 1876 的新异名。

关键词：多食亚目；扁甲总科；菜花露尾甲属；异名

Received 5 November 2012
①Corresponding authors, E-mails: agk@zin.ru, kirejtshuk@gmail.com; huangmin@nwsuaf.edu.cn

Introduction

The subgenus *Meligethes* Stephens, 1830 is represented in the recent fauna mostly by species spread across the Palaearctic provinces of eastern China. However, quite a few new species from this area still need to be described. In this paper, a new species is described to show that morphological variability of this group is much wider than that postulated by Audisio *et al.* (2009). The authors regard that the proper taxonomic status of this group should be determined after revision of many taxa included in the genus *Meligethes sensu lato*. Therefore, we follow the traditional generic composition of this family (Kirejtshuk 2011; Kirejtshuk & Kirejtshuk 2012). This paper is a first step toward complete revising this and other groups of the subfamily Meligethinae in the Chinese fauna. Future papers will demonstrate that many morphological characters of this subgenus are so variable and intersect with diagnostic characters of other subgenera of the genus *Meligethes sensu lato* and even some diagnostic characters of other genera in the subfamily Meligethinae.

Material and methods

All descriptions and measurements were made under an Olympus SZ 61 microscope, and all figures were made using a digital camera (Nikon D300S) attached to a stereomicroscope (Zeiss Discovery V12) and Helicon Focus 5.1 software at the Institute of Zoology, Chinese Academy of Sciences, Beijing. Drawings were made using a camera lucida attached to a stereomicroscope Leica MZ12.5. Besides, standard optical equipment was used for additional study, in particular the stereomicroscope Leica MZ 16.0 at the Zoological Institute of Russia, St. Petersburg, and the stereomicroscope Olympus SCX9 and an inverted microscope Olympus CK 40 at the Muséum National d'Histoire Naturelle, Paris.

Abbreviations:

IZAS — Institute of Zoology, Chinese Academy of Sciences, Beijing, China

MNHN — Muséum National d'Histoire Naturelle, Paris, France

NMB — Naturhistorisches Museum, Basel, Switzerland

ZIN — Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia

Description

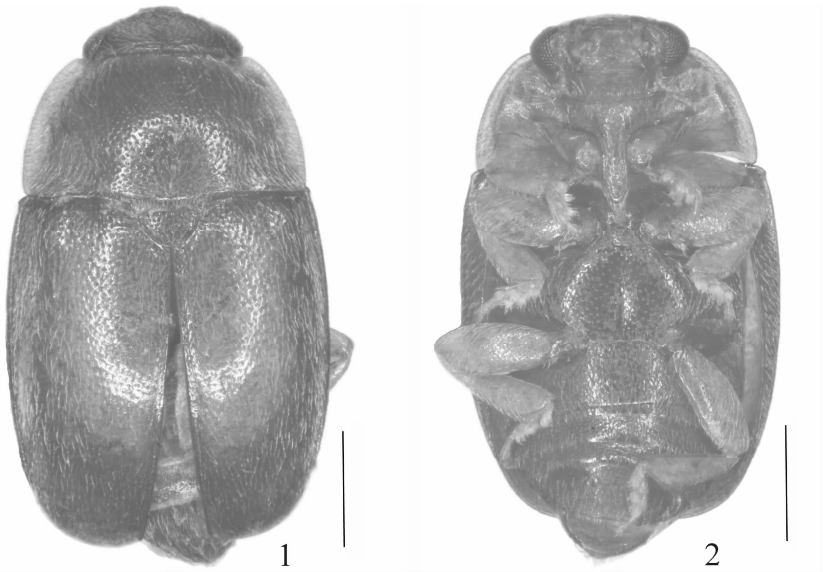
***Meligethes* (*Meligethes*) *pallidoelytrorum* Chen & Kirejtshuk sp. nov.** (Figs. 1–10)

Length 2.2, breadth 1.2, height 0.7 mm.

Body yellowish-brown with narrow transparent lateral margins of pronotum, discal elytral portion and legs yellowish; metaventrite and abdominal sternites dark brown; rather shining with clear bronze lustre; dorsum with fine and rather conspicuous yellowish golden hairs, somewhat longer than distances among their insertions (Figs. 1, 2).

Head with punctures larger than eye facets in diameter, interspaces among them more or less narrower than a puncture diameter and smoothly microreticulated. Pronotum with finer punctures, interspaces on disk almost smooth. Scutellum semicircular, very finely closely rugosely punctuate. Elytra about as punctured as head, interspaces among them markedly broader than a puncture diameter and smooth. Prosternal process with dense punctures, about

slightly smaller than the eye facets in diameter. Metaventrite and abdominal sternite 1 with more or less distinct punctures, markedly smaller than eye facets in diameter, interspaces among them larger than a puncture diameter and completely smooth to smoothly microreticulated.



Figures 1, 2. *Meligethes* (*Meligethes*) *pallidoelytrorum* sp. nov. ♂. 1. Habitus, dorsal view, 2. Same, ventral view. Scale bars = 0.5 mm.

Head subflattened and about as long as the distance between moderately large eyes (consisting of rather fine facets), anterior edge finely bordered, transverse and with rounded lateral angles (Fig. 3). Antennal grooves subparallel. Antennal club composing about 2/5 of total length, subovoi, about 1 and 3/5 as long as wide. Pronotum with anterior edge rather arcuately than trapezoidally excised; its posterior edge slightly sinuate in the middle. Elytra slightly longer than their combined width, distally gradually narrowing to obliquely truncate apices. Pygidium slightly convex, widely rounded at apex. Last labial palpomere about twice as long as wide, clearly narrowed apically. Mentum subpentangular, twice as wide as long, with arcuate sides. Prosternum gently convex along the middle, prosternal process elongate, apex narrowly arcuate, its bordered part with subparallel-sides and slightly narrower than antennal club (Fig. 4). Distance between mesocoxae about twice as great as that between metacoxae about three times as great as that between procoxae. Metaventrite convex and with a weak and narrow median depression, with very distinct submesocoxal line following close the posterior edge of cavity, subrectilinearly deviating only at outer angle of metaventrite and reaching the posterior of inner edge of metepisternum. Submetacoxal line following closely posterior edge of cavity. Hypopygidium subtruncate at apex.

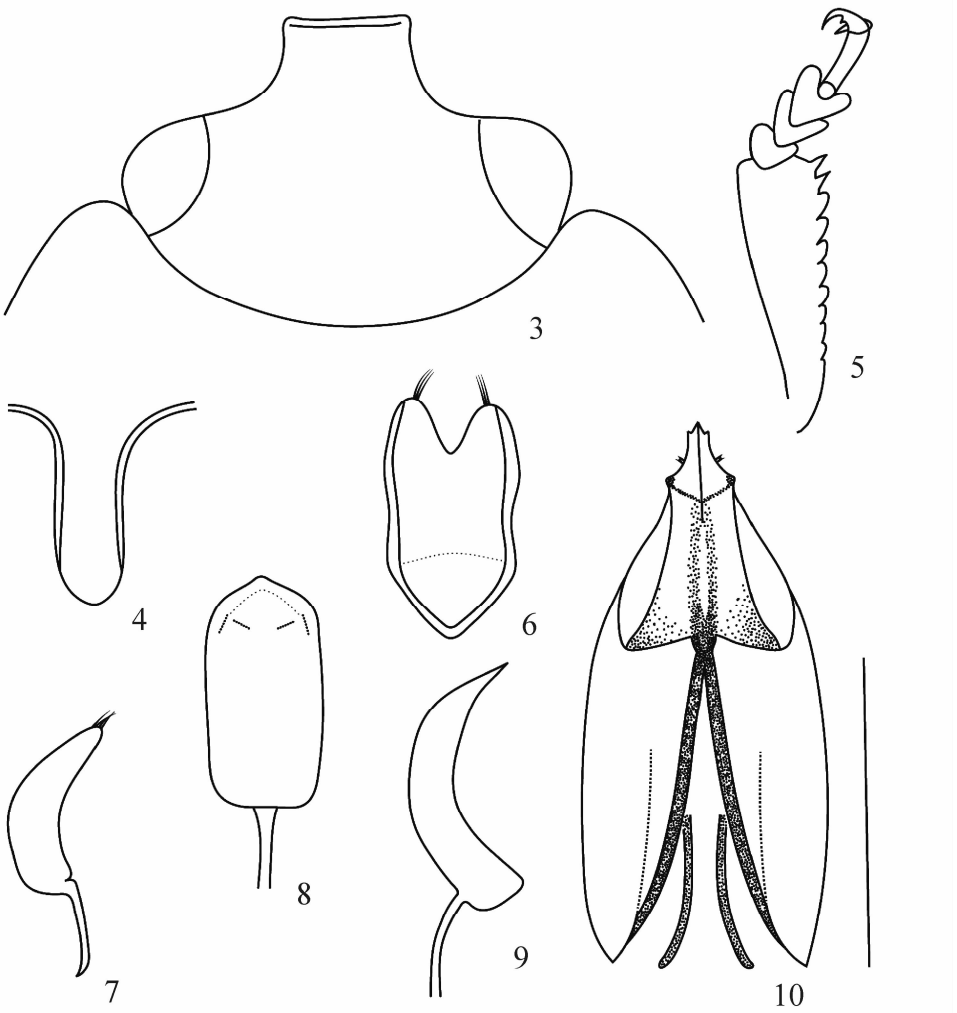
Femora almost 1.5 times as wide as corresponding tibiae. Protibia subtriangular and moderately crenulate along outer edge, about as wide as antennal club (Fig. 5). Meso- and metatibiae obviously wider than protibia and with rows of short and dense hairs along outer edge, spurs comparatively small and fine. Protarsus about 4/5 as wide as protibia. Claws

strongly dentate at base.

Tegmen and median lobe (penis trunk) moderately sclerotised (Figs. 6–9).

Female. Differs from the male in the posterior tibia slightly narrower; metaventrite more convex. Ovipositor with gonocoxites apically pointed and forming trapeziform isolated structure with somewhat emarginate external sides and styli located at less distance from lateral points than subapical, "central point" almost at apical third (Fig. 10).

Variations. Length 2.2–3.3 mm. The coloration varies to a rather great extent: some pale paratypes are subunicolorous straw reddish with slightly lighter elytral disks and, on the other hand, the largest paratype from Daxue Shan is rather dark chestnut brown with a very contrasting reddish elytral disk, and also with rather light pronotal sides, antennae and legs. The ovipositor of the latter specimen is more heavily sclerotized and with more sharply outlined sclerites.



Figures 3–10. *Meligethes* (*Meligethes*) *pallidoelytrorum* sp. nov. 3. Head; 4. Prosternal process; 5. Right anterior tibia; 6. Tegmen, ventral view; 7. Same, lateral view; 8. Median lobe of aedeagus, ventral view; 9. Same, lateral view; 10. Ovipositors ventral view. Scale bar = 0.05 mm.

Holotype. ♂, **China:** Sichuan, Nanping, Jiuzhaigou, 2850–3000 m a.s.l., 03-XI-1983, Shuyong WANG leg. (IZAS). **Paratypes** (12♂, 19♀). 8♂7♀, same data as holotype (IZAS); 2♂2♀, Sichuan, Nanping, Jiuzhaigou, 2300 m a.s.l., 03-IX-1983, Ruiqi WANG leg. (IZAS); 1♀, Sichuan, Nanping, Jiuzhaigou, 3000 m a.s.l., 03-IX-1983, Shuyong WANG leg. (IZAS); 2♀, Sichuan, Nanping, Jiuzhaigou, 2850–3000 m a.s.l., 04-IX-1983, Shuyong WANG leg. (IZAS); 1♀, Sichuan, Nanping, Jiuzhaigou, 2600 m a.s.l., 05-IX-1983, Chunlai NIU leg. (IZAS); 1♀, Sichuan, Nanping, Jiuzhaigou, 2850–3000 m a.s.l., 06-IX-1983, Shuyong WANG leg. (IZAS); 1♂, same data as holotype (ZIN); 1♂, Sichuan, Nanping, Jiuzhaigou, 3000 m a.s.l., 03-IX-1983, Shuyong WANG leg. (ZIN); 1♀, Sichuan, Nanping, Jiuzhaigou, 2300 m a.s.l., 03-IX-1983, Ruiqi WANG leg. (ZIN); 1♀, Sichuan, Manigange, 3900 m a.s.l., 03-IX-1983, Shuyong WANG leg.; 2♀, Sichuan, Nanping, Jiuzhaigou, 3000 m a.s.l., 03-IX-1983, Shuyong WANG leg. (ZIN); 1♀, China: Sichuan, Daxue Shan, Gongga Shan Mt., Hailougou Glacier Park, env. Glacier Tongue, ca. 3500 m above camp [1], ca. 3200 m, 29-V-1997, A. PÜTZ (NMB).

Etymology. This new species is named because of its peculiar coloration of elytra (Latin "pallidus" – pale, pallid and Greek "elytron" – term for forewings of beetles).

Remarks. This new species is very distinct due to the peculiar coloration of its more slender body. This combination of characters makes it different from all other species in this subgenus as formerly described. This new species is also characterized by the smoothed dorsal integument and diffuse and sparse punctation on the elytra and the very distinct tooth at the base of the claw. These features associates the new species with *M.* (*M.*) *denticulatus* and its relatives with subunicolorous body, dentate tarsal claws and sparse punctation of elytra when compared to other groups in the subgenus. *Meligethes* (*Meligethes*) *pallidoelytrorum* sp. nov. has the genitalia in both sexes also rather similar to *M.* (*M.*) *denticulatus* (Heer, 1841), widespread in the Palaearctic, and *M.* (*M.*) *bourdilloni* Easton, 1968 from Nepal, although the tegmen of the new species has a shorter median excision and its median lobe (penis trunk) is shorter and markedly more acuminate at apex, and also the ovipositor of the new species is not gradually narrowing apically and possesses the shorter styli. The body shape of the new species is somewhat similar to that of *M.* (*M.*) *loydi* Easton, 1968 from Nepal and *M.* (*M.*) *cinereus* Jelínek, 1978 (? = *M.* (*M.*) *griseus* Jelínek, 1978) from Bhutan, but with very different body coloration exhibiting a clear bronze lustre and much sparser punctuation. The new species also differs from *M.* (*M.*) *cinereus* in the less conspicuous dorsal pubescence, dentate tarsal claws and lack of sexual dimorphism in the elytral apices and genitalia of both sexes. The ovipositor of the new species is somewhat similar to that in *M.* (*M.*) *lloydi,* although with completely different outlines of the inner lobes of gonocoxites. Besides, the genitalia of both sexes of *Meligethes* (*Meligethes*) *pallidoelytrorum* sp. nov. are somewhat similar to those of *M.* (*M.*) *wagneri* Rebmann, 1956 from Fujian, although the new species has a much lighter and slender body with sparse punctuation and lack of transrugosity on elytra, expressed luster on dorsum, and somewhat different outlines of the inner lobes of gonocoxites. Among other species, this new species has the distinct genitalia of both sexes and a more slender body. It also differs from *M.* (*M.*) *chinensis* Kirejtshuk, 1979 and *M.* (*M.*) *transmissus* Kirejtshuk, 1988 from China in the much lighter body coloration and from the second also in a much sparser punctation of integument. It is also similar to *M.* (*M.*) *vulpes* Solsky, 1876 (= *lutra* Solsky, 1876, syn. nov.; *subopacus* Reitter, 1891; *transmuttatus* Grouvelle, 1912; *melleus* Grouvelle,

1908, syn. nov.; *melanocephalus* Rebmann, 1956) from Middle Asia, North India and North Indochina but the former in lighter body with more expressed luster on dorsum, dentate tarsal claws and much narrower meso- and metatibiae.

Notes. The synonymies of *"Meligethes vulpes"* and *M. "lutra"* Solsky, 1876, syn. nov. were explained by Kirejtshuk (1977) in a paper where the formal proposal of this synonymy was to be published by J. Jelínek because he first studied the type specimens and wrote this synonymy under the type specimens of both *M. "vulpes"* and *M. "lutra"*. Nevertheless this expected paper on synonymy has not been published until now. The synonymy of *M.* (*M.*) *vulpes* and *M.* (*M.*) *melleus* Grouvelle, 1908, syn. nov. is established due to the recent study of two type specimens (females, syntypes) "Pegu", "typus" (Myanmar, MNHN). This species is also known from other localities of Kazakhstan, Middle Asia, Afghanistan, North India and North Indochina, the records of which will be published in a future paper.

Acknowledgements

This study was supported by the National Natural Science Foundation of China (31010103913) and Fundamental Research Funds for Chinese Central Universities. The first author is grateful to Prof. Xingke YANG for his tremendous support for the study. The second author has the pleasant duty to express his recognition to the Museum national d'Histoire naturelle in Paris that provided him the opportunity to work in this museum from 2006 to 2012 as a visiting professor. This study was also supported by grants from the Russian Foundation of Basic Research (12-04-00663-a) and the Programme of the Presidium of the Russian Academy of Sciences 'Problems of Origin of Life and Formation of Biosphere'. The authors greatly appreciate the valuable comments on an earlier version of this manuscript received from anonymous reviewers.

References

Audisio P, Cline AR, De Biase A, Antonini G, Mancini E, Trizzino M, Constantini L, Strika S, Lamanna F & Cerretti P. 2009. Preliminary reexamination of genus-level taxonomy of the pollen beetle subfamily Meligethinae (Coleoptera: Nitidulidae). *Acta Entomologica Musei Nationalis Pragae*, 49(2): 341–504.

Kirejtshuk AG. 1977. Novye I maloizvestnye vidy podsemeystva Meligethinae (Coleoptera, Nitidulidae) palearkticheskoy fauny [New and little-known species of the subfamily Meligethinae (Coleoptera, Nitidulidae) in the Palaearctic fauna]. *Revue d'Entomolie de l'URSS*, 56(3): 625–643.

Kirejtshuk AG. 2011. "Paradoxical" new genus and species of the family Nitidulidae (Polyphaga, Coleoptera) from Afro-Madagascarean and Australian Regions. *Zoosystematica Rossica*, 20(2): 274–298.

Kirejtshuk AG & Kirejtshuk PA. 2012. Revision of the subgenus *Kabakovia* Kirejtshuk, 1979 of the genus *Cryptarchopria* Jelínek, 1975 (Coleoptera: Nitidulidae) and notes on the systematics and evolution of the subfamily Meligethinae. *Zoosystematica Rossica*, 21(2): 254–269.