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Description of the male of *Mylabris* (*Mylabris*) *parumpicta* (Heyden, 1883) (Coleoptera: Meloidae) and new distributional data of this species

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Abstract

In this paper, the previously unknown male of *Mylabris parumpicta* (Heyden, 1883) is described and figured. The original description of this endemic species was based on three female specimens collected from Elburz Mountains. Additional distributional records for *M. parumpicta* are provided to improve the current knowledge about its occurrences across Iran.

Key words: Coleoptera, Meloidae, Blister beetles, *Mylabris*, male characters, new records, Iran.

Mylabris (*Mylabris*) *parumpicta* (Heyden, 1883) توصیف نر و پراکنش جدید گونه (Coleoptera: Meloidae)

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چکیده

در این مقاله نمونه نر گونه *Mylabris parumpicta* (Heyden, 1883) برای اولین بار توصیف و ترسیم شده است. این گونه اندمیک قبلا بر اساس سه نمونه ماده از شرق رشته کوه‌های البرز توصیف شده بود. داده‌های جدید پراکنش وسیع‌تر این گونه را نشان می‌دهد.

واژگان کلیدی: قاب‌بالان، سوسک‌های تاول‌زا، توصیف نمونه نر، پراکنش جدید، ایران.

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Introduction

The blister beetles of the nominate subgenus *Mylabris* Fabricius, known as Central Asiatic-Mediterranean elements, include species with a relatively narrow range of distribution from western Mediterranean region to China. Except for the three widespread species, *M. olivieri* Billberg, *M. quadripunctata* (Linnaeus), and *M. variabilis* (Pallas), significant radiations took place in northern Africa, Anatolia, Levant, and Iranian plateau, leading to differentiation of several endemic species which are restricted to small regions, both insular (Crete and Cyprus) and continental (e.g. Cyrenaica, Taurus Mts., western Morocco, etc.) (Pan & Bologna, 2014).

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Pan and Bologna (2014) have recently revised the nominate subgenus *Mylabris*, adding five new species within the subgenus, and concluded that a comprehensive analysis is required to resolve the phylogenetic relationships among its members. The complete phylogenetic study concerning the limits and relationships of the *Mylabris* subgenera (Salvi *et al.*, in press) has strongly supported the monophyly of the nominate subgenus, already proposed by Bologna *et al.* (2005), even being tested only a set of species. The subgenus *Mylabris* constitutes a monophyletic group which morphologically differs from the rest of the subgenera of the tribe Mylabrini by the following apomorphic states: mesosternal fore portion ("scutum") with long dense setae on the middle of its posterior part, different shape of aedeagal hooks, and apical or strictly subapical position of the distal one (Bologna, 1991). Pan and Bologna (2014) added other characters such as red frontal spot (present in most species), not asymmetrically wider than long IX–XI antennomeres, lack of middle longitudinal furrow on the pronotum, relatively distinct depressions on anterior and middle pronotal portions, visibly developed mesosternal suture and smooth ventral side of dorsal blade of the claws.

Mylabris (*Mylabris*) is one of the most speciose subgenera within the genus with 25 species, which are related to open ecosystems, mostly steppe habitats, or subdesertic and desertic ecosystems. *Mylabris parumpicta* (Heyden) is a South Turkmenian species that was described from Shaku, Elburz Mountains, in northern Iran by Heyden (1883). Pan and Bologna (2014) argued that the mentioned records from Turkestan (Borchmann, 1917; Mader, 1927; Sumakov, 1930) should be located very south of Turkmenistan, in the northern Iran region. They also doubted the records of *M. parumpicta* from Lorestan (Sumakov, 1930) and Kermanshah (Modarres Awal, 1997) and argued that they were likely misidentifications of *M. mediorientalis* (Pan and Bologna, 2014). *Mylabris parumpicta* represents another endemic element of this subgenus in Iran.

Mylabris parumpicta was originally described as *Zonabris*, according to three females, being preserved in Senckenberg Deutsches Entomologisches Institut (DEI), Müncheberg, Germany, and examined by the second author (see also Pan and Bologna, 2014). Other Iranian records of this species were also based on female specimens (e.g. Beauregard, 1890; Sumakov, 1915; Kuzin, 1954) and no male was described. During the examination of meloid material of Hayk Mirzayans Insect Museum (HMIM), we spotted a few male specimens of *M. parumpicta*, from northeastern and central Iran. In this paper, we present the first description of the male *M. parumpicta* and provide illustration of its genitalia and external morphological characters for the first time. Also new distributional data for this species is given.

Material and Methods

Specimens were examined and illustrated using a stereomicroscope Zeiss Stemi SV8 equipped with a Zeiss drawing tube 474622-9901.

In the list of examined material, the locality labels are not cited verbatim, but completed and standardized by province or district name.

The studied material is deposited at the Hayk Mirzayans Insect Museum (HMIM), Tehran, Iran.

Results

***Mylabris* (*Mylabris*) *parumpicta* (Heyden, 1883)**

Material examined: Esfahan province: 1♂, 1♀, Golpayegan, Hendeh Kuh, 2200–2700 m, 27.6.1969, leg. Pazuki; Golestan province: 2♂, 1♀, Shahroud to Shahkouh, 2150 m, 15.6.1974, leg. Rajabi & Pazuki; Tehran province: 4♂, 1♀, Eshtehard, 26.5.1969, leg. Ayatollahi.

Description of male

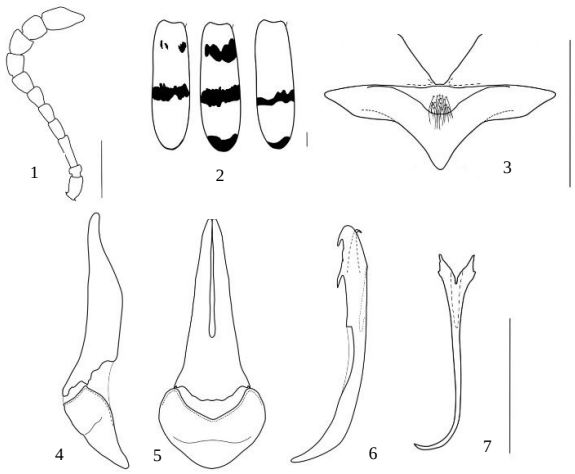
Body black, elytra yellow brown with the following black pattern: two anterior black spots, in some specimens one or both basal spots vanished, a mostly complete middle transverse and sinuate fascia, and usually a narrow apical fascia. Setation black, but mixed with golden setae on the inner side of foretibiae and ventral side of pro- and mesotarsi (conspicuous on I-V, weak on V). Body length: 11.6–13.5 mm.

Head distinctly longer than wide at temple level, wider at eyes than at temple; punctures relatively wide, deep and irregular, surface among punctures relatively shiny; head capsule subquadrate, temple widely curved posteriorly, shorter than longitudinal length of eye; frons almost flat, with one red spot in middle, more or less divided posteriorly; clypeus transverse, convex, with slightly rounded anterior and lateral margins, anteriorly depressed, fronto-clypeal suture clearly visible; labrum only very slightly shorter than clypeus, anterior margin slightly sinuate, weakly depressed in middle; mandibles robust, curved, longer than clypeus and labrum together; last maxillary palpomere apically thickened and truncate at apex; antennae (Fig. 1) extending to posterior margin of pronotum, antennomere I about three times longer than II, both black, II semi-globular, III–VI dark reddish, less shiny than in female, antennomere III slightly shorter than IV and V together, antennomere IV to VII progressively elongate, antennomere VIII as long as IX, XI about twice as long as X and narrowed in apical half.

Pronotum slightly longer than wide, narrowed anteriad, convex, maximum width anterior to middle, with a very shallow anterior transverse depression and a very shallow middle depression, punctures broader than on head, interstices shiny; elytral pattern as in

figure 2; elytral setation shorter and sparser than on head and pronotum; mesosternum longitudinally elevated in middle, with a clearly modified scutum, with a posterior oval area with dense and long setae (Fig. 3); mesepisterna depressed along anterior margin. Legs black, pro- and mesotibial spurs both similar in shape and pointed, inner metatibial spur stick-like; femora with mixed short and long setae; setae robust and elongate on tibiae and tarsi; pro- and mesotarsomeres with ventral golden setae forming tarsal pads.

Posterior margin of last visible sternite with a relatively deep and narrow median emargination. Male genitalia as in figures 4–7; apical lobe of gonoforceps relatively long, slightly more than half of the total length of gonoforceps; in ventral view, gonoforceps (Figs. 4–5) fused in basal third; aedeagus (Fig. 6) with two distinct subequal dorsal hooks, the distal one positioned close to apex, proximal one clearly longer and more curved; endophallic hook relatively small and slender and curved; apodeme of *spiculum gastrale* slender, with short branched lateral arms (Fig. 7).



Figures 1–7. *Mylabris* (*M.*) *parumpicta* (Heyden): 1- antenna; 2- elytral pattern; 3- mesosternum; 4- tegmen, lateral view; 5- tegmen, ventral view; 6- aedeagus, lateral view & 7- *spiculum gastrale*, dorsal view. Scale bar = 1 mm.

Discussion

Mylabris parumpicta is superficially similar to *M. apicenigra* Sumakov, within the same subgenus, especially in the shape of aedeagal hooks, the gonoforceps and the modified anterior section of mesosternum, but differs in the yellow-brown elytral colour (reddish-brown in *M. apicenigra*), the elytral pattern which includes black spots in the middle or in front and an apical fascia (in *M. apicenigra* only apical fascia exists), the distinctly longer and less denser elytral setation, the less convex upper surface of the elytra and the

more dense punctuation of the head and pronotum with less shiny interstices. *Mylabris parumpicta* can be confused with *M. variabilis* due to the similarities in the elytral pattern of some populations, but it could be easily distinguished by the structure of genitalia. Salvi *et al.* (in preparation) are conducting a thorough morphological and molecular studies of the whole subgenus to clarify the phylogenetic relationships of its members. Although available keys to the species (Serri *et al*., 2012; Pan and Bologna, 2014) are not arranged phylogenetically, they effectively offer important taxonomical characters required for reliable identifications within the subgenus.

This Iranian endemic species was erroneously reported from Turkmenistan. Through the newly presented faunistic records, including the information on *M. parumpicta*, we have completed the previous data (Pan and Bologna, 2014) on the phenology and altitudinal distribution of the *Mylabris* members. The peak activity of this species starts in May and ends in June between elevations 2100 and 2700 meters above the sea level. The record from Hendeh Kuh Golpayegan, Esfahan province, considerably extends the distribution of this species to the center of Iran.

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This research commemorates the entomologists who collected the material of this study.

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