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The genus *Condylops* Redtenbacher in Iran, Lebanon and Turkey, with description of six new species (Coleoptera, Melyridae, Malachiinae)

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Abstract. – *Condylops klapperichi* n. sp., *C. luteus* n. sp., *C. markaziensis* n. sp., *C. muehlei* n. sp., *C. svihlai* n. sp. (all five from Iran), and *C. vanensis* n. sp. (from East Turkey) are described and their habitus and morphological characters illustrated. A lectotype is designated for *Condylops erichsonii* Redtenbacher. An identification key for the *Condylops* species from Iran, Lebanon and Turkey, as well as a distribution map, are provided.

Résumé. – **Le genre *Condylops* Redtenbacher en Iran, Liban et Turquie, avec la description de six nouvelles espèces (Coleoptera, Melyridae, Malachiinae)**. *Condylops klapperichi* n. sp., *C. luteus* n. sp., *C. markaziensis* n. sp., *C. muehlei* n. sp., *C. svihlai* n. sp. (les cinq d'Iran), et *C. vanensis* n. sp. (de Turquie orientale) sont décrits ; les habitus et caractères morphologiques sont illustrés. Un lectotype est désigné pour *Condylops erichsonii* Redtenbacher. Une clé d'identification pour séparer les espèces de *Condylops* d'Iran, Liban et Turquie est proposée, ainsi qu'une carte de leur distribution.

Keywords. – Soft-winged flowers beetles, Illopini, taxonomy, West Asian region.

The Malachiinae in Iran are a unique fauna including many endemic species, but they have been only occasionally collected and most species are poorly represented both in museum and private collections. Though well known among European entomologists as Malachiidae, with family status, recent molecular based phylogenies conclude that this taxon is a clade of the family Melyridae, with subfamily status (Gimmel *et al*., 2019).

The existing literature up to year 1936 was summarized in Greiner (1937). After this year, a few publications appeared, with the description of new species (Wittmer, 1965, 1979, 1983). Successive major additions have been the Mayor (2007) contribution to the Palearctic Catalogue, the new generic keys to the Russian Malachiid fauna (Tshernyshev, 2011) and the recent regional checklists (Švihla, 1998; Yildirim & Bulak, 2012; Mirutenko & Ghahari, 2016).

However, the Iranian Malachiid beetles remain poorly known. For the genus *Condylops*, subject of the present study, only three species were known, up to now, for the region. The aim of this paper is to describe several new, remarkable *Condylops* species, whose types are now housed in the below specified collections.

Material and methods

The specimens initially studied were collected by friend and colleague Hans Mühle. Comparison with type materials and other specimens kept at MNHN (Abeille de Perrin and Pic collections), and at NHMB (Wittmer collection which incorporated Hicker collection of Melyridae) allowed to better understand most of the specific characters within the genus and to confirm several species as new to science. Further types and additional specimens were loaned from MNB, NMPC and NHMW.

Detailed photographs were obtained with a digital reflex camera adapted on a Leica stereomicroscope MZ12.5. Microphotographs have been made by a compound microscope fitted with a 10× objective and the focus stacks were assembled with Helicon Focus software. The distribution map was prepared with Data Fauna Flora and Carto Fauna Flora (Pierre Rasmont & Yves Barbier, Mons University, Belgium).

Abbreviations of the institutions and collection in which the studied material is deposited. – **CCo**, Robert Constantin, author's collection, Saint-Lô, France; **MNB**, Museum für Naturkunde, Berlin, Germany; **MNHN**, Muséum national d'Histoire naturelle, Paris, France; **NHMB**, Naturhistorisches Museum, Basel, Switzerland; **NHMW**, Naturhistorisches Museum, Wien, Austria; **NMPC**, Národní Muzeum, Praha, Czech Republic.

Abbreviations for measurement indices. – **a**, antennomere; **AL**, antennal length; **EL**, elytron length from humerus to apex; **EW**, elytra combined width at the base; **HW**, head width including the eyes; **IOW**, interocular width; **PL**, pronotum length; **PW**, pronotum width; **TL**, total length.

Remarks and definitions. – The males of Malachiid beetles possess specific organs ("excitators") on various part of the body (head, antennae, tibiae, elytral apices, etc.). The excitators have glands and setae which emit pheromones, used during courtship (MATTHES, 1962). Protarsomere: as below detailed, all species of *Condylops* (males) have the second article of anterior tarsi bearing an identical comb-like appendage. Such a common character will not be repeated in the species descriptions that follow. Gena (plural genae): the area below the compound eyes, till the base of the mandibles. Occiput: the region posterior to the vertex on the head. Rami (plural of ramus): the long branches appending to the antennomeres.

TAXONOMY

Genus ***Condylops*** Redtenbacher, 1850

Condylops Redtenbacher *in* KOLLAR & REDTENBACHER, 1850: 47.

The genus *Condylops* was erected by Redtenbacher in 1850 for *Condylops erichsonii* Redtenbacher, 1850, a Malachiid beetle of an unusual morphology, brought as a single pair of specimens from South Persia by the botanist Karl G. T. Kotschy. The genus includes now about eighty species: forty in Southern Africa, thirty-five in East Asia (mainly China), four in the Arabian Peninsula and in West Asia.

WITTMER (1985) characterised the males of *Condylops* by: protarsus of five articles; second article of protarsus elongate and with an apical comb of dark setae; antennae pectinate; profemora simple; pronotum transverse with rounded anterior edge.

More recently, TSHERNISHEV (2011) redefined *Condylops* as a member of the tribe Illopini Jakobson, 1911, with antennae 11-jointed, all joints being visible, a secondary sexual character (a male specific structure) placed on the head, pectinate antennae, elongate last maxillary palpomere, protarsus with second article not hooked but projecting over the third and ending with a short comb of six-seven short, thick, black setae.

The western Asian species belong to a species-group sharing at least the following five characters: body yellow usually with black marks; male antennae pectinate to flabellate; male frons excavated; male sternite VIII apically split and bearing two paramedian folds (fig. 23-24); male internal sac of aedeagus with a long sclerotization, basally bifid (fig. 26).

They look rather similar to *Malachiomimus erinaceus* (Abeille de Perrin, 1890), belonging to tribe Attalini Abeille de Perrin, 1890, and described from "Persia". This species differs from the Iranian *Condylops* by smaller size, less transverse pronotum, shiny surface, male head not excavate, male second protarsomere projecting over the third with a comb of 17 longer black teeth and male aedeagus with internal sac free from long sclerites and fitted with tiny denticulations only (fig. 9, 31, specimen from Iran, Kopet Dagh, Desch, NHMB).

These remarkable insects have been seldom observed in the past. This may be partly due to the increased pressure of field researches and, partly, to the late emergence of adults (June to August), in a season when most field collectors have (in our latitudes) already suspended their activity. It is interesting to note that, in Western Europe, the late emergence of adults in July and August has been observed for *Nepachys cardiacae* (Linnaeus, 1760) and *N. peucedani* (Abeille de Perrin, 1885). In Algeria, several Malachiinae such as *Attalus semitogatus* (Fairmaire, 1864) and *A. mozabita* Chobaut, 1897, appear in September-October.

In the region of West Asia under study, three species were previously known:

– *Condylops erichsonii* Redtenbacher, 1850, type-species of the genus, from South Persia, 1 ♂, 1 ♀ (NHMW);

– *C. iranicus* Wittmer, 1979, from Iran, Kerman province, Mohammadabad, 28°57'N 57°55'E, ♂ holotype (NMPC);

– *C. libanicus* (Wittmer, 1965), initially described as *Hedybiinus libanicus*, from "Libanon, Beiruth" on a series of 3 ♂ and 1 ♀ (NHMB). The type locality may not be very sure because the type series belong to materials acquired by Richard Hicker from various, unidentified insect dealers.

Condylops erichsonii Redtenbacher, 1850 (fig. 4, 10)

Condylops erichsonii Redtenbacher *in* Kollar & Redtenbacher, 1850: 47. "Südpersien".

Lectotype (**present designation**). *Condylops erichsonii* was described without indication of locality. The original publication begins with a report of the travel of the collector in 1842, the botanist Theodor Kotschy, including a list of the visited places. The true type locality remains unknown and the three towns suggested by Mirutenko & Ghahari (2016) are conjectures. According to the late emergence of adults in related species, a further possible typical locality is Dozdkurd, a village at the footstep of Kuh-e Dena (Edmondson & Lack, 2006), in the Dena Mounts [southern tip of the Isfahan province, *ca* 30°57'N 51°25'E], a place where Kotschy collected in early July 1842. The type specimens, preserved at NHMW, are one male and one female, both incomplete, formerly pinned, later re-mounted by Wittmer who added "lectotype" (♂) and "paralectotype" (♀) red labels. Such designation was never published so that they are herein designated as such. The male bears an original label "Kots. m 7/" which may mean "Kotschy, male, new species #7". The photograph habitus of the lectotype of *Condylops erichsonii* (fig. 4), damaged and disassembled, required the patient work of joining four photographs taken under different angles.

Additional description, male lectotype. – Length circa 3.7 mm. Head pale straw yellow, a dark brown mark in the middle of the frons excavation, base of vertex and occiput black. Antennae yellow, apical half of rami of antennomeres V-VI and rami of VII-VIII fully brown. Pronotum shiny, black except a narrow yellow margin, broader in the middle than on anterior and posterior margins. Scutellum black. Elytra shiny, yellow, bimaculate, with two black maculae on basal third and two postmedian black maculae, apices orange-yellowish. Head 1.2 times wider than pronotum. Cephalic excavation with two conical points near the posterior border, spaced 0.65 mm, the anterior border with two blunt rounded bumps separated by a short longitudinal carina. Apex of elytra bordered with a membranous, thin, whitish border.

Dimensions. HW: 1.59 mm; IOW: 1.29 mm; PL: 1.01 mm; PW: 1.33 mm; EL: 2.38 mm; EW: 1.35 mm. Length × width on the front border, rami included, of the antennomeres, in mm: aI : 0.25 × 0.16; aII: 0.08 × 0.10; aIII: 0.20 × 0.21; aIV: 0.16 × 0.32; aV : 0.16 × 0.50; aVI: 0.15 × 0.62; aVII: 0.15 × 0.74; aVIII: 0.16 × 0.80; the following articles being missing.

Female paralectotype. – Length 4.0 mm. Head not excavate, 0.94 times as wide as pronotum, yellow with a triangular brown patch on the frons. Antennomere III triangular and elongate; IV dentate as long as wide; V dentate-pectinate; VI-VII pectinate; the following articles being missing. Pronotum

1.35 times wider than long, the lateral yellow border broader. Elytra 1.5 times longer than wide at base, apices simple.

***Condylops klapperichi* n. sp.** (fig. 6, 21)

http://zoobank.org/199202AE-5A9B-4E67-B1DD-A44B140424F7

HOLOTYPE: ♀, Iran, "Abu Ask, Elburs Geb., 2000 m, Pers. 12.VIII.1960, *J. Klapperich*" (NHMB).

PARATYPES: 1 ♀ (damaged), *idem* holotype (NHMB); 1 ♀, "Iran, Abu Ask b. Damarand, 18.VIII.1961, 1700 m, *J. Klapperich*" (NHMB); 1 ♀, "N. Iran, C. Elburz, Gazanak, Haraz Chay 1400 m, 20-21.VI.1970 / loc. n° 63, Exp. Nat. Mus. Praha"; "*Condylops erichsoni* Redt. det. W. Wittmer" (NMPC).

The type locality could be Ask village, south base of the mount Kuh-e Damavand, Tehran province, *ca* 35°52'N 52°09'E. The locality Gazanak [*ca* 35°54′N 52°13′E], Mazandharan province, is located at 8 km NE of Ask.

Description, female holotype. – Length 4.2 mm. Head black, fore frons, clypeus and genae yellow. Pronotum black with a narrow yellow border, wider on the sides. Scutellum black. Elytra yellow, bimaculate, a humeral oblique, black, large strip on the anterior third and a large postmedian black patch leaving the apical fourth yellow. Palpi and antennae brown, the four basal antennomeres yellow. Front legs yellow with a black strip on the posterior side of femora. Middle and hind legs black, mesotibiae mostly yellow. Abdomen black, all ventrites with a narrow apical narrow line.

Head triangular, 1.24 times narrower than the pronotum. Frons shiny, explanate with a median pit, rugulose punctuated. Antennae short, the first antennomere apically widened, II reduced, III triangular, IV-V dentate, VI-IX pectinate, their rami subparallel, 2-2.5 times longer than wide. Cephalic pubescence with short, whitish setae mixed with a few black ones.

Pronotum transverse, 1.37 times wider than long. Anterior border arcuate. Sides and posterior borders rounded together, posterior angles undefined. Lateral margins explanate and slightly everted. Pronotal surface shiny, finely punctuate, with some erect black setae near the side borders. Elytra 1.75 times longer than wide (taken together) at base, parallel, apices simple and separately rounded. Elytral surface markedly punctuate, covered with sparse erect black setae.

Abdomen with few fulvous setae. Tergite VIII triangular with rounded rear border.

Dimensions. LT: 4.2 mm; AL: 1.3 mm; HW: 1.04 mm; IOW: 0.69 mm; PL: 0.94 mm; PW: 1.29 mm; EL: 2.46 mm; EW: 1.42 mm. Length × width on the front border, rami included, of the antennomeres, in mm: aI: 0.12 × 0.10; aII: 0.08 × 0.08; aIII: 0.11 × 0.08; aIV: 0.13 × 0.12; aV: 0.12 × 0.14; aVI: 0.12 × 0.16; aVII: 0.11 × 0.17; aVIII: 0.12 × 0.18; aIX: 0.12 × 0.18; aX: 0.13 × 0.19; aXI: 0.06 × 0.23. The three female paratypes are identical to the holotype.

Etymology. – Dedicated to the memory of the late Johann Friedrich Klapperich (1913-1987), collector of the holotype and outstanding field entomologist (LUCH, 1988).

Differential diagnosis. – *Condylops klapperichi* n. sp. is close to *C. luteus* n. sp. in the shape of the female antennae because of the several pectinate rami on the last antennomeres but it is easily recognizable for the colour scheme and the cephalic punctuation.

Condylops libanicus (Wittmer, 1965) (fig. 15, 17)

Hedybiinus libanicus Wittmer, 1965: 85.
Condylops libanicus (Wittmer); WITTMER, 1970: 96; WITTMER, 1985: 303.

The present illustration of this taxon was obtained from a male paratype labelled "Beyruth, Syrien", without collector's name nor date of collection, and preserved in NHMB with type number "MALAC00008780".

Dimensions of a male paratype. – LT: 3.5 mm; AL: 2.2 mm; HW: 1.24 mm; IOW: 0.9 mm; PL: 1.00 mm; PW: 1.24 mm; EL: 2.20 mm; EW: 1.38 mm. Length × width on the front border, rami included, of the antennomeres, in mm: aI : 0.18 × 0.15; aII: 0.06 × 0.11; aIII: 0.20 × 0.19; aIV: 0.16 × 0.23; aV: 0.15 × 0.32; aVI: 0.17 × 0.4; aVII: 0.18 × 0.46; aVIII: 0.19 × 0.46; aIX: 0.21 × 0.5; aX: 0.25 × 0.49; aXI: 0.53 × 0.05.

Differential diagnosis. – *Condylops libanicus* appears to be related to *C. erichsonii* in the shape of the antennae and the elytral maculation. It differs from all other *Condylops* in the peculiar structure of the cephalic excavation (fig. 15).

***Condylops luteus* n. sp.** (fig. 5)

http://zoobank.org/90F584A1-4D40-4E2D-9539-84B18B32BC73

Holotype: ♀, "Iran, Isfahan province, near Pashandegan, 20 km NW Kameran, 32°48'N 49°52'E, 2400 m, 14.VII.2004, *H. Mühle*" (NHMB).

Description. – Length 4.8 mm. Body orange yellow. Base of vertex and occiput testaceous. Disk of pronotum with two small paramedian, blurred, brown maculations. Scutellum yellow. Elytra and abdomen cadmium yellow. Palpi, legs and antennae orange, the antennomeres VI-VIII apically and IX-XI entirely brown.

Head triangular, 0.90 times as wide as the pronotum. Frons explanate, moderately shiny and rugulose punctuate near the genae and the clypeus, shiny, finely punctuate and slightly depressed in the middle between the eyes. Antennae elongate, first antennomere feebly elongate, II small, III-IV triangular, V-VI dentate, VII-IX pectinate, their rami subparallel, each article approximatively three times longer than wide. Cephalic pubescence with several whitish and a few black setae, both erect.

Pronotum transverse, 1.33 times wider than long. Anterior border arcuate. Sides and posterior borders rounded together, the posterior angles undefined. Lateral margins explanate and slightly everted. Pronotal surface shiny, not punctuate, with a few erect black setae. Elytra 1.70 times longer than wide (measured together at their base), parallel, the apices simple and separately rounded. Elytral surface markedly punctuate and rugulose, covered with whitish pubescence intermixed with erect setae.

Abdomen covered with whitish pubescence; tergite VIII triangular with rounded rear border, narrowly emarginate in the middle and with a median longitudinal furrow.

Dimensions. LT: 4.8 mm; AL: 1.59 mm; HW: 1.39 mm; IOW: 1.03 mm; PL: 1.15 mm; PW: 1.53 mm; EL: 2.90 mm; EW: 1.69 mm. Length × width on the front border, rami included, of the antennomeres, in mm: aI : 0.20 × 0.12; aII: 0.07 × 0.09; aIII: 0.15 × 0.10; aIV: 0.15 × 0.15; aV: 0.15 × 0.20; aVI: 0.13 × 0.21; aVII: 0.13 × 0.22; aVIII: 0.13 × 0.26; aIX: 0.13 × 0.24; aX: 0.13 × 0.22; aXI: 0.30 × 0.07.

Etymology. – The species name relates to the general body colour.

Differential diagnosis. – *Condylops luteus* n. sp. appears to be related to *C. muehlei* n. sp. for the female antennal structure which, in both species, has the apical antennomeres clearly pectinate. However, the two species differ for the colour scheme and for the head of the latter one without protruding eyes.

Natural history of adults. – The collecting place was a slope with *Pistacia* and *Amygdalis* (?) bushes, *Astragalus*, *Capparis* and *Onobrychis*. The specimen has been collected by beating the vegetation, together with the buprestid *Anthaxia flavicomes* Abeille de Perrin, 1900, Coccinellidae and Apioninae undermined species (H. Mühle, pers. comm.).

***Condylops markaziensis* n. sp.** (fig. 3, 12, 19, 30)

http://zoobank.org/B358FBD5-5AA1-4FA8-9EB9-5A434FEAF427

Holotype: ♂, "Iran, Markazi province, 10 km south-east of Tafresh, 34°38'N 50°05'E, 2400-2600 m, 16.VII.2004, *H. Mühle*" (NHMB).

Description. – Length 3.8 mm. Head yellow, base of vertex, temples and occiput with a broad transverse black strip reaching the eyes. Pronotum black with a narrow yellow border, wider on the sides. Scutellum black. Elytra yellow with two large black maculations: on basal half and, not reaching the tip, on apical half; apically rounded. Abdomen black, the last tergite with a narrow yellow median patch. Antennae orange, antennomeres I-II spotted black dorsally, the following III-XI reddish brown. Legs yellow, anterior side of mesofemora with a black strip, apical half of protarsi, mesotarsi and hind legs brownish black.

Head 1.35 times wider than pronotum; lateral projections of head, bearing eyes, moderately extended. Frons explanate. Temples concave. Cephalic excavation in the middle shallow, transverse, the anterior margin with two elevated, rounded bumps separated by a short carina.

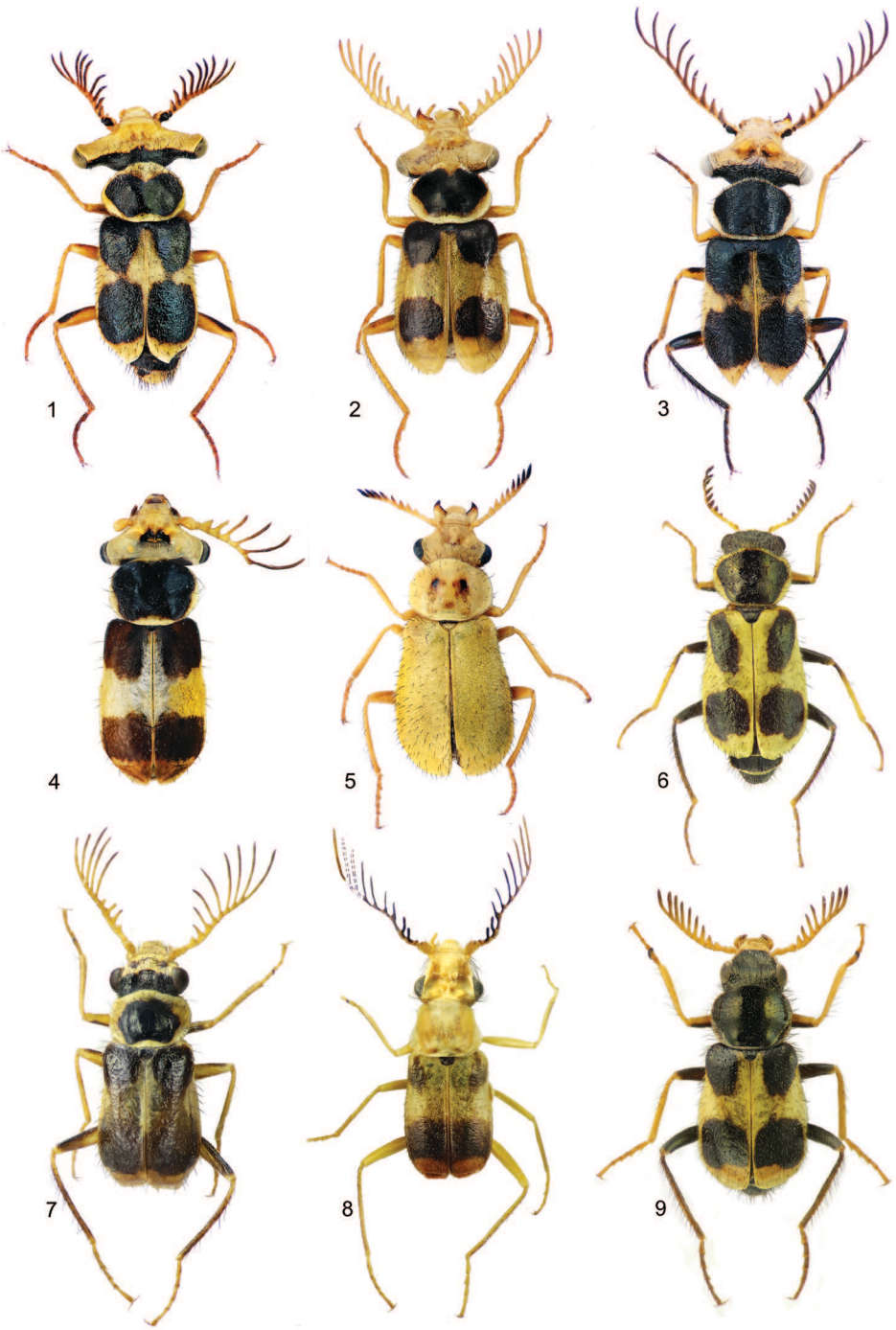

Fig. 1-9. – *Condylops*, habitus. – **1**, *Condylops muehlei* n. sp., ♂ holotype (body length 4.2 mm). – **2**, *C. vanensis* n. sp, ♂ paratype (3.7 mm). – **3**, *C. markaziensis* n. sp., ♂ holotype (3.8 mm). – **4**, *C. erichsonii* Redtenbacher, ♂ lectotype (3.7 mm). – **5**, *C. luteus* n. sp., holotype ♀ (4.8 mm). – **6**, *C. klapperichi* n. sp., ♀ holotype (4.2 mm). – **7**, *C. svilhai* n. sp., ♂ holotype (3.4 mm). – **8**, *C. iranicus* Wittmer, ♂ holotype (4 mm). – **9**, *Malachiomimus erinaceus* (Abeille de Perrin), ♂ (3.6 mm).

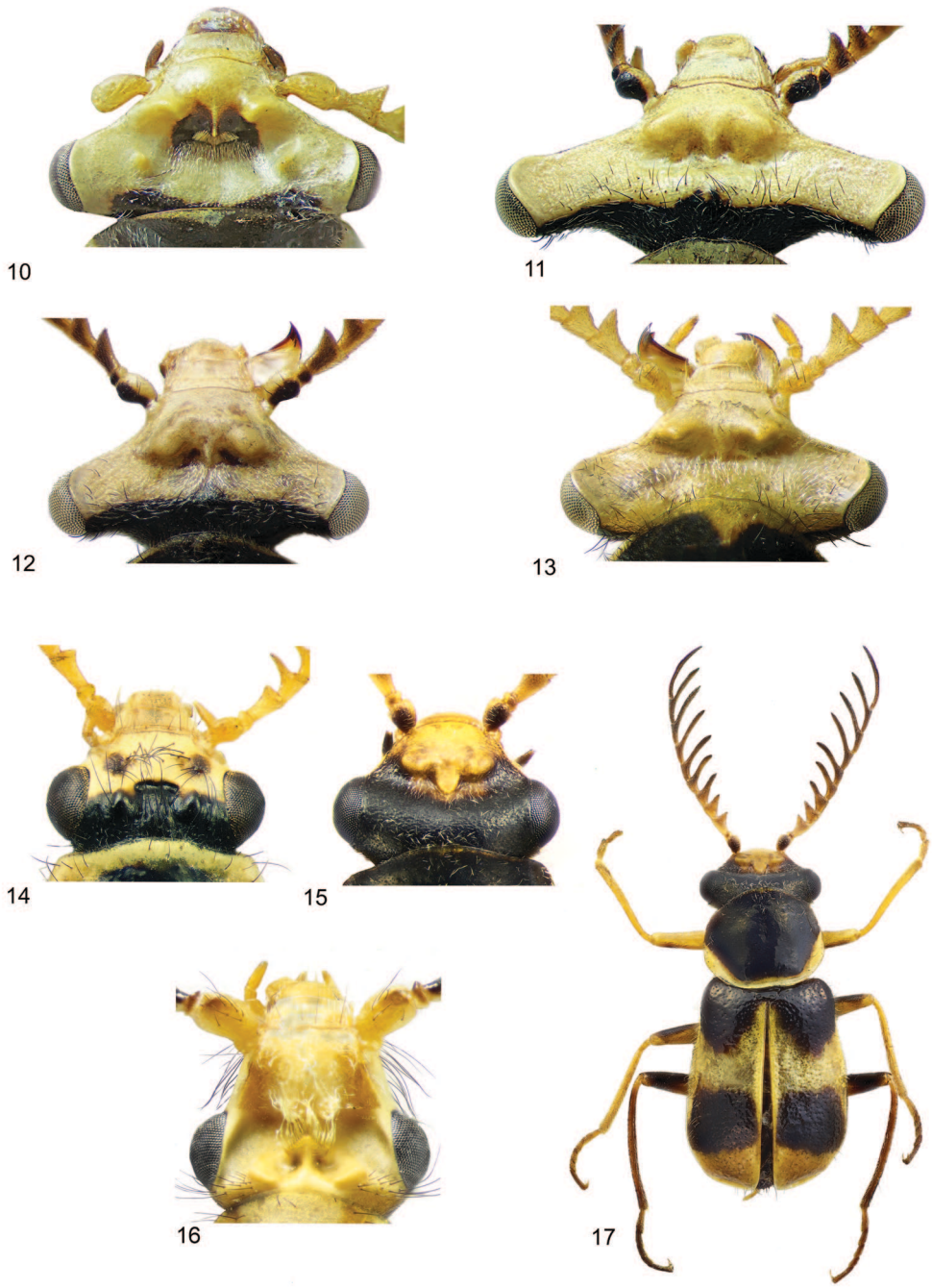

Fig. 10-17. – *Condylops*. – **10-16**, Head of males: **10**, *C. erichsonii* Redtenbacher (head width, hw 1.59 mm); **11**, *C. muehlei* n. sp. (hw 2.02 mm); **12**, *C. markaziensis* n. sp. (hw 1.53 mm); **13**, *C. vanensis* n. sp. (hw 1.34 mm); **14**, *C. iranicus* Wittmer (hw 1.18 mm); **15**, *C. libanicus* (Wittmer) (hw 1.26 mm); **16**, *C. svilhai* n. sp. (hw 0.96 mm). – **17**, Habitus of *C. libanicus* (Wittmer), ♂ paratype (length 3.5 mm).

Frontal surface dull, alutaceous between eyes, clypeus and genae, shiny in the excavation. Antennae elongate, antennomere I just longer than wide, apically inflated, II very short, III triangular, longer than wide, IV dentate, wider than long, V pectinate, VI-X short and flabellate.

Pronotum transverse, 1.35 times wider than long. Anterior border arcuate. Sides and posterior border rounded together, the posterior angles undefined. Lateral margins broadly explanate and slightly everted. Pronotal surface shiny, without visible punctuation, covered with whitish pubescence and a few, erect, black setae. Elytra 1.6 times longer than wide (taken together at their base), parallel, the apices triangularly plicate and bordered with a whitish membrane. Elytral surface strongly punctuate and rugulose, the points as wide as their intervals, covered with intermixed whitish and erect setae.

Abdomen. Tergite VIII with rounded apical border. Sternite VIII feebly sclerotised, with a narrow median slot and two triangular apical projections. Median lobe of aedeagus narrow, apically shortly conical; internal sac with a long, rather unclearly structured sclerite (fig. 30).

Dimensions. LT: 3.8 mm; AL: 2.14 mm; HW: 1.53 mm; IOW: 1.17 mm; PL: 0.85 mm; PW: 1.13 mm; EL: 2.06 mm; EW: 1.29 mm. Length × width on the front border, rami included, of the antennomeres, in mm: aI : 0.16 × 0.15; aII: 0.07 × 0.11; aIII: 0.20 × 0.18; aIV: 0.18 × 0.22; aV: 0.17 × 0.33; aVI: 0.16 × 0.36; aVII: 0.16 × 0.44; aVIII: 0.18 × 0.48; aIX: 0.19 × 0.51; aX: 0.20 × 0.50; aXI: 0.60 × 0.05.

Etymology. – The specific epithet recalls the province of the typical locality.

Differential diagnosis. – *Condylops markaziensis* n. sp. is similar to *C. muehlei* n. sp. and differs from it for less protruding eyes, shallower cephalic excavation, longer antennae with narrower dentate third and fourth antennomeres, and a darker colour scheme.

Natural history of adults. – Collected by beating the vegetation, in late afternoon, together with the buprestid *Julodella dilaticollis* (Semenov, 1893). The place was a flat area of slightly uneven surface, covered with a few bushes and, between them, a variety of flowers (H. Mühle, pers. comm.).

***Condylops muehlei* n. sp.** (fig. 1, 11, 18, 23, 28)

http://zoobank.org/D89247CB-3D61-4B81-88C9-FA0392A3B844

HOLOTYPE: ♂, "Iran, Ardabil province, 20 km south of Khalkhal, Gollijeh [= Gollujeh, 37°31'N 48°25'E], 1900 m, 20.VII.2004, *H. Mühle*" (NHMB).

PARATYPES: 4 ♀, *idem* holotype (1 *in* NHMB, 3 *in* CCo); 1 ♀, "Ardabil province, 15 km north of Heshajin [= Hashjin, 37°28'N 48°25'E], 20.VII.2004, 1500-1600 m, *H. Mühle*" (CCo).

Description of male holotype. – Length 4.2 mm. Head orange yellow, base of vertex and occiput with a narrow transverse black strip reaching the eyes. Pronotum black with a narrow yellow margin wider in the middle of the front border and on the sides of the posterior border. Scutellum black. Elytra yellow, bimaculate: the basal black maculae widths posteriorly reduced, the black macula in apical half not reaching the elytron tip. Abdomen black, the last tergite with yellow median apical patch. Antennae orange, antennomeres I-II dorsally spotted blackish-brown, dorsal surface of rami IV-XI reddish brown. Legs orange yellow, anterior side of metafemora with a black strip, apical half of metatibiae and metatarsi reddish.

Head wide with lateral projections bearing the eyes very developed: head 1.6 times wider than pronotum. Frons explanate. Central cephalic excavation shallow, transverse, the anterior margin with two blunt bumps separated by a smaller, narrow bump. Frontal surface dull, alutaceous between the eyes; clypeus and genae shiny in the excavation. Antennae short, first antennomere longer than wide, apically inflated, II very short, III triangular dentate, IV pectinate, twice as wide as long, V-X short and flabellate.

Pronotum transverse, 1.4 times wider than long. Anterior border arcuate. Sides and posterior border rounded together, the posterior angles undefined. Lateral margins explanate and slightly everted. Pronotal surface shiny, without visible punctuation, covered with whitish pubescence and a few erect, black setae. Elytra 1.7 times longer than wide (taken together at their base), parallel, apices longitudinally plicate and bordered with a whitish membrane. Elytral surface strongly punctuate and rugulose, the points wider than their intervals, covered with intermixed whitish hairs and erect setae.

Abdomen. Tergite VIII rear border rounded, slightly triangular in the middle. Sternite VIII feebly sclerotised, with a narrow median slot and two triangular apical projections. Median lobe of aedeagus

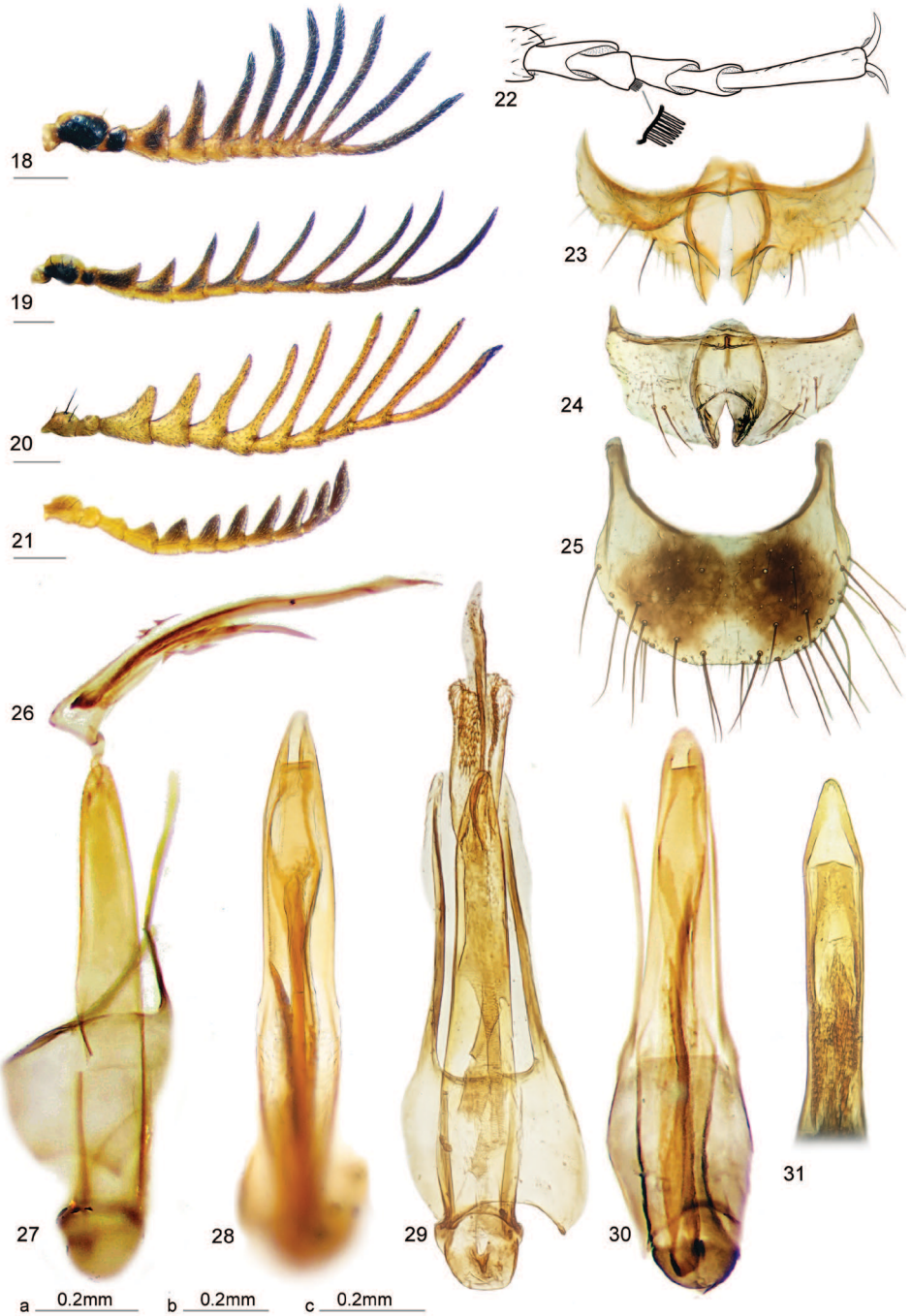

Fig. 18-31. – *Condylops*, morphology. – **18-21**, Right antenna: **18**, *C. muehlei* n. sp., ♂; **19**, *C. markaziensis* n. sp., ♂; **20**, *C. vanensis* n. sp., ♂; **21**, *C. klapperichi* n. sp., ♀. – **22**, Right protarsus and detail of the tarsal comb of *C. vanensis* n. sp. – **23**, *C. muehlei* n. sp., ♂, sternite VIII. – **24-25**, *C. svilhai* n. sp., ♂: **24**, sternite VIII; **25**, tergite VIII. – **26**, *C. vanensis* n. sp., ♂, exserted sclerites of the internal sac, side view. – **27-30**, Median lobe of aedeagus, ventral view: **27**, *C. vanensis* n. sp.; **28**, *C. muehlei* n. sp.; **29**, *C. svilhai* n. sp.; **30**, *C. markaziensis* n. sp. – **31**, *Malachiomimus erinaceus* (Abeille de Perrin), median lobe. Scale bar of fig. 18-21: 0.2 mm; scale a: fig. 22; scale b: fig. 23-25; scale c: fig. 26-31.

narrow and elongate, apically ending in a rather long cone; internal sac with a long sclerite, apparently made up by two long and thin styli, a bent, spinose shorter one and a median, undefined membranous structure.

Dimensions. LT: 4.2 mm; AL: 1.49 mm; HW: 2.02 mm; IOW: 1.61 mm; PL: 0.93 mm; PW: 1.29 mm; EL: 2.24 mm; EW: 1.31 mm. Length × width on the front border, rami included, of the antennomeres, in mm: aI : 0.19 × 0.15; aII: 0.08 × 0.10; aIII: 0.17 × 0.22; aIV: 0.15 × 0.21; aV: 0.10 × 0.43; aVI: 0.09 × 0.53; aVII: 0.09 × 0.60; aVIII: 0.08 × 0.60; aIX: 0.08 × 0.60; aX: 0.08 × 0.52; aXI: 0.50 × 0.04.

Female paratypes. – Differ for the simple (non excavated) head, the less laterally protruding eyes, the pectinate antennae, the simple second protarsomere, the simple elytral apices. Antennae with the first antennomere elongate, II globose, III triangular, IV-V triangular dentate, VI-X pectinate. Length 4.3-5.0 mm, average 4.6 mm.

Dimensions of a female. LT: 4.3 mm; AL: 1.13 mm; HW: 1.51 mm; IOW: 1.15 mm; PL: 1.00 mm; PW: 1.35 mm; EL: 2.50 mm; EW: 1.47 mm.

Etymology. – The species is dedicated to colleague Hans Mühle, world-known specialist of family Buprestidae and collector of a large part of the materials on which this paper has been based.

Differential diagnosis. – *Condylops muehlei* n. sp. differs from all other *Condylops* for the strongly extruded eyes and the peculiar flabellate antennae.

Natural history of adults. – Hand collected on a slope where the path crosses a small stream surrounded by thistles (*Cirsium* spec.). On the slope vegetation —trees (*Populus, Salix*) and many flowering plants— buprestids (*Anthaxia morgani* Théry, 1925*, A. turcomanica* Obenberger, 1938), and unidentified Coccinellidae and Curculionidae have been found (H. Mühle, pers. comm.).

***Condylops vanensis* n. sp.** (fig. 2, 13, 20, 22, 26, 27)

http://zoobank.org/067E5619-F2CE-4ED9-87CF-7215E1344816

HOLOTYPE: ♂, "Ostw Vansee [Turkey, Van province, ca. 38°26'N 43°18'E], Asm, 1800-2200 m, VI.1971, *F. Schubert*" (NHMW).

PARATYPES: 2 ♂, 2 ♀, *idem* holotype (3 *in* NHMW, 1 *in* CCo); 1 ♂, Turkey, Adiyaman province, "TR: Nemrut Dagi [37°58'N 38°44'E] 17.VII.1993, *R. Pettersson*" (MNB); 1 ♂, 1 ♀, Turkey, "TR: Nemrut Dagi, 17.VII.1993, *R. Pettersson*" (NMPC).

Description of male holotype. – Length 3.7 mm. Head straw yellow, base of vertex, temples and occiput with a narrow transverse black strip reaching the eyes. Pronotum black with a narrow yellow border, wider on the sides. Scutellum black. Elytra yellow, bimaculate: the black macula on basal fourth, rounded on its rear border, is separated by a broad yellow gap from the post-median black macula which does not reach the elytral tip. Abdomen black, the last tergite yellow with two small, well separated, black spots. Antennae straw yellow. Legs yellow, anterior side of metafemora apically fulvous.

Head 1.14 times wider than pronotum, lateral projections bearing the eyes moderately developed. Frons explanate. Temples convex. Cephalic central excavation shallow, transverse, with two elevated, pointed bumps without carina on anterior margin. Frontal surface shiny, fitted by a dense cover of recumbent white setae. Antennae long, antennomere I hardly longer than wide, apically inflated, II very short, III triangular, as long as wide, IV dentate-pectinate, 2.3 times longer than wide, V-X short and flabellate.

Pronotum transverse, 1.27 times wider than long. Anterior border arcuate. Sides and posterior border rounded together, the posterior angles undefined. Lateral margins broadly explanate and slightly everted. Pronotal surface shiny, without visible punctuation, covered with a few erect, black setae. Elytra 1.8 times longer than wide (taken together at their base), parallel, apices simple, regularly rounded. Elytral surface shiny, finely punctuate, the punctures as wide as their intervals, covered with intermixed whitish pubescence and erect black setae.

Abdomen. Tergite VIII with rounded apical border. Sternite VIII feebly sclerotised, crescent-like with a narrow median slot and two triangular apical projections. Median lobe of aedeagus narrow, apically shortly conical; internal sac with a long irregular sclerite.

Dimensions. LT: 3.7 mm; AL: 1.90 mm; HW: 1.34 mm; IOW: 1.08 mm; PL: 0.93 mm; PW: 1.18 mm; EL: 2.35 mm; EW:1.30 mm. Length × width on the front border, rami included, of the anten-

nomeres, in mm: aI : 0.16 × 0.14; aII: 0.08 × 0.10; aIII: 0.18 × 0.22; aIV: 0.14 × 0.32; aV: 0.12 × 0.33; aVI: 0.12 × 0.43; aVII: 0.12 × 0.52; aVIII: 0.12 × 0.58; aIX: 0.13 × 0.55; aX: 0.13 × 0.55; aXI: 0.45 × 0.04. Male paratypes: length 3.6-3.8 mm. Similar to the holotype.

Female paratypes. – Differ from the males for the (non excavated) head structure, the less laterally protruding eyes, the pectinate antennae, the simple second protarsomere. Antennae with antennomere I elongate, II globose, III elongate triangular, IV-V dentate, VI-X pectinate, 2 times wider than long. Length 3.9-4.2 mm.

Dimensions of a female. LT: 4.2 mm; AL: 1.17 mm; HW: 1.15 mm; IOW: 0.83 mm; PL: 0.99 mm; PW: 1.29 mm; EL: 2.45 mm; EW: 1.49 mm.

Etymology. – The species name derives from the province name of the typical locality.

Differential diagnosis and discussion. – *Condylops vanensis* n. sp. is close to *C. markaziensis* n. sp. but differs in the less protruding eyes and the convex temples. The male paratype of Nemrut Dag is identical to the holotype of Lake Van, despite a gap of 350 km between the two localities.

***Condylops svihlai* n. sp.** (fig. 7, 14, 24, 25, 29)

http://zoobank.org/2E810D76-D83C-4652-A357-AEFF31D83877

Holotype: ♂, "Írán - Khorásán [province], Robát Sharwaf [Robat-e Sharaf, ca. 36°16'N 60°48'E], 11.V.1977, *leg. Škorpík*" // "*Condylops* sp. n. 2, V. Švihla det. 2007" (NMPC).

Description. – Length 3.4 mm. Head posteriorly black, anterior part of frons, clypeus and genae yellow with a small round brown patch behind each antenna. Pronotum black with a yellow border wider on anterior angles. Scutellum black. Elytra black with a continuous yellow marginal strip, both on lateral border and along the suture, apically wider and fading in the middle of the suture. The median and lateral yellow patches are narrowing the discal black maculae. Palpi and antennae yellow, apical halves of antennomeres V-XI rami yellowish brown. Front and middle legs yellow, a black strip on the dorsal side of femora. Hind legs brown, base of metafemora, of metatibiae and tarsi mostly yellow. Abdomen black, sternites and ventrites with a narrow apical whitish yellow margin.

Head triangular, 1.06 times narrower than pronotum. Frons not very shiny, alutaceous, explanate with a median impression surrounded by two anterior black spots maculae with setae and two rounded bumps between the eyes. Antennae short, the first antennomere inflated, II reduced, III triangularly elongate, IV dentate, V-IX pectinate, their stems two times longer than wide, their rami subparallel. Cephalic pubescence with numerous long black setae on the fore frons and between the eyes.

Pronotum transverse, 1.4 times wider than long. Anterior border arcuate. Sides and posterior border rounded together, the posterior angles undefined. Lateral margins explanate and slightly everted. Pronotal surface shiny, finely punctuate, with a few erect black setae near side borders and on anterior angles. Elytra 1.67 times longer than wide (taken together at their base), parallel, apices shortly plicate and separately rounded. Elytral surface shiny, finely punctuate, covered with sparse oblique fulvous setae.

Abdomen shiny with a few fulvous setae. Tergite VIII triangular with rounded rear border. Sternite VIII with a bi-lamellate apical fold.

Dimensions. LT: 3.4 mm; AL: 1.78 mm; HW: 0.96 mm; IOW: 0.59 mm; PL: 0.72 mm; PW: 1.02 mm; EL: 1.85 mm; EW: 1.11 mm. Length × width on the front border, rami included, of the antennomeres, in mm: aI : 0.19 × 0.12; aII: 0.08 × 0.10; aIII: 0.20 × 0.13; aIV: 0.15 × 0.26; aV: 0.12 × 0.41; aVI: 0.10 × 0.55; aVII: 0.10 × 0.68; aVIII: 0.10 × 0.71; aIX: 0.10 × 0.76; aX: 0.11 × 0.75; aXI: 0.75 × 0.03.

Etymology. – Dedicated in the memory of the late Vladimir Švihla (1952-2015), outstanding taxonomist of Oedemeridae, Cantharidae and Melyridae Malachiinae families (Jelínek & Hájek, 2015). Vladimir Švihla had previously studied the specimens collected by the Czechoslovak-Iranian entomological mission of 1977 and already recognized this taxon as new to science.

Differential diagnosis. – *Condylops svihlai* n. sp. is related to *C. vanensis* n. sp. for the shape of the male antennae. It differs from the latter for colour scheme and shape of the shallow cephalic excavation.

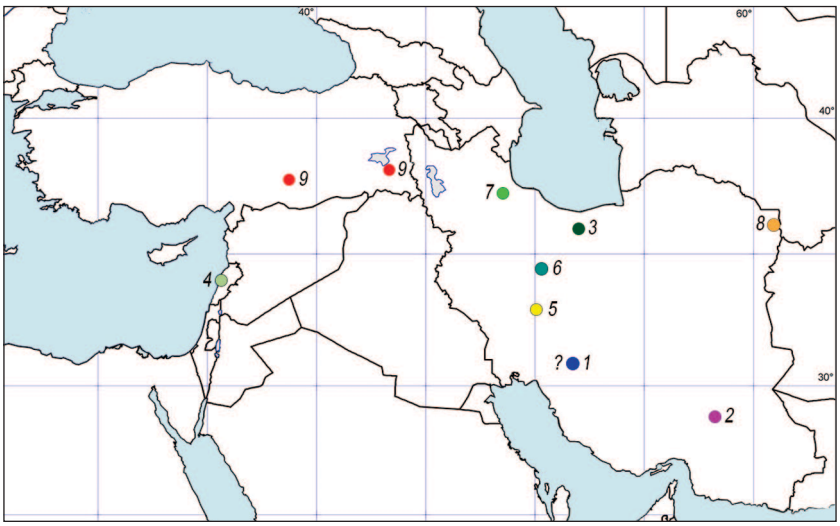

Fig. 32. – Distribution of *Condylops* species. – 1, *C. erichsonii* Redtenbacher; 2, *C. iranicus* Wittmer; 3, *C. klapperichi* n. sp.; 4, *C. libanicus* (Wittmer); 5, *C. luteus* n. sp.; 6, *C. markaziensis* n. sp.; 7, *C. muehlei* n. sp.; 8, *C. svihlai* n. sp.; 9, *C. vanensis* n. sp.

KEY TO SPECIES OF *CONDYLOPS* FROM IRAN, TURKEY AND LEBANON

Note. – Key established separately for males and females, as several species are known only by one sex.

1. Females: frons without excavation, second article of protarsomere simple (females of *Condylops iranicus, C. markasiensis* and *C. svihlai* are unknown) **2**
– Males: frons excavate or at least hollowed in the middle, second article of protarsomere projecting over the third, with apical comb composed of six-seven black setae (fig. 22) (males of *Condylops klappperichi* and *C. luteus* are unknown) **7**
2. Body yellow. Elytra entirely yellowish, free of dark maculae ..... ***Condylops luteus*** n. sp.
– Body yellow. Elytra yellow, each with two black maculae **3**
3. Eyes on lateral protuberance. Head 1.2 times wider than the pronotum ..... ***C. muhlei*** n. sp.
– Eyes not protruding. Head narrower than the pronotum **4**
4. Elytra with narrow humeral oblique black maculae pointing towards the centre of the disk and post-median maculae ..... ***C. klapperichi*** n. sp.
– Elytra with wide, basal black maculae and post-median black maculae **5**
5. Head dull, yellow with a black macula on the base of vertex ..... ***C. vanensis*** n. sp.
– Head shiny **6**
6. Clypeus and forehead in front of the eyes yellow, frons between the eyes and vertex black ..... ***C. libanicus*** (Wittmer)
– Head most yellow with a median pale brown mark between the eyes. Vertex only basally black .... ***C. erichsonii*** Redtenbacher
7. Head and pronotum orange yellow. Elytra yellow with narrow brown marks and red apices. Cephalic excavation shallow with a small triangular median projection (fig. 8, 16) ..... ***C. iranicus*** Wittmer
– Head yellow with black marks. Pronotum black with narrow yellow borders. Elytra yellow with black patches **8**
8. Forehead with a protuberance behind the antennal insertions with two rounded lateral bumps and a median triangular bump (fig. 15) ..... ***C. libanicus*** (Wittmer)
– Forehead without triangular median protuberance **9**
9. Vertex with a narrow, shallow, median, black impression with, on sides, two small, black protuberances; plus two small, rounded, black, bumps between eyes and antennal insertion (fig. 14) ..... ***C. svihlai*** n. sp.

– Frons with a wide transverse excavation between the eyes **10**

10. Cephalic excavation with three anterior bumps and two posterior, conical spines, placed between the eyes (fig. 10) ..... ***C. erichsonii*** Redtenbacher

– Cephalic excavation without posterior spines between eyes **11**

11. Eyes strongly protruding, elongate genae, head 1.6 times wider than pronotum (fig. 11) .... ***C. muehlei*** n. sp.

– Eyes slightly or not protruding, the genae shorter, head 1.35 times or less wider than pronotum .. **12**

12. Anterior margin of cephalic excavation with a small median tooth between the pair of blunt bumps (fig. 12). Fourth antennomere pointed, 1.4 times wider than long ..... ***C. markaziensis*** n. sp.

– Anterior margin of cephalic excavation simply fitted with a pair of rather pointed bumps (fig. 13). Fourth antennomere as long as wide ..... ***C. vanensis*** n. sp.

Conclusion

It is interesting to report that several specimens received for study, belonging to several different species, were all determined under the name *Condylops erichsonii* Redtenbacher, 1850, and that witnesses the poor knowledge of Iranian *Condylops*. No doubts that future availability of further materials will allow a better knowledge of the species of this interesting genus, and of their variability and distribution.

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