

RESEARCH PAPER

# Generic revision of the Microhoriini with new species and synonymies from the Palaearctic Region (Coleoptera: Anthicidae)

Zbyněk KEJVAL<sup>1)</sup> & Donald S. CHANDLER<sup>2)</sup>

<sup>1)</sup> Muzeum Chodská, Chodské náměstí 96, Domažlice, CZ-344 01 Czech Republic; e-mail: anthicid@seznam.cz

<sup>2)</sup> Department of Biological Sciences, University of New Hampshire, Durham, NH 03824, U. S. A.; e-mail: Donald.Chandler@unh.edu

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**Abstract.** The classification of Microhoriini Bonadona, 1974 is revised. Five genera are recognized: *Aulacoderus* LaFerté-Sénéctère, 1849, *Falsophilus* Kejval, 2015, *Liparoderus* LaFerté-Sénéctère, 1849, *Microhoria* Chevrolat, 1877, and *Neocrohoria* Telnov, 2019. **(i) New species:** *Microhoria almukalla* Kejval, sp. nov. (Yemen), *M. anahita* Kejval, sp. nov. (Iran), *M. antalya* Kejval, sp. nov. (Turkey), *M. bacillisternum* Kejval, sp. nov. (Iran), *M. cervi* Kejval, sp. nov. (Oman), *M. fergana* Kejval, sp. nov. (Kyrgyzstan), *M. garavuti* Kejval, sp. nov. (Tajikistan), *M. gibbipennis* Kejval, sp. nov. (Turkey), *M. halophila* Kejval, sp. nov. (Turkey), *M. hazara* Kejval, sp. nov. (Afghanistan), *M. heracleana* Kejval, sp. nov. (Greece), *M. impavida* Kejval, sp. nov. (Turkey), *M. kabulensis* Kejval, sp. nov. (Afghanistan), *M. kermanica* Kejval, sp. nov. (Iran), *M. pahlavi* Kejval, sp. nov. (Iran), *M. persica* Kejval, sp. nov. (Iran), *M. strejceki* Kejval, sp. nov. (Tajikistan), *M. sawda* Kejval, sp. nov. (Saudi Arabia), and *M. sulaimanica* Kejval, sp. nov. (Pakistan, Uzbekistan). **(ii) New synonymies:** *Microhoria* Chevrolat, 1877 = *Clavicomus* Pic, 1894 syn. nov. = *Tenuicomus* Pic, 1894 syn. nov.; *Microhoria depressa* (LaFerté-Sénéctère, 1849) = *Anthicus mollis* Desbrochers des Loges, 1875 syn. nov.; *Microhoria edmondi* (Pic, 1893) = *Anthicus spinosus* Pic, 1912 syn. nov.; *Microhoria globipennis* (Pic, 1897) = *Anthicus globipennis quercicola* Sahlberg, 1913 syn. nov.; *Microhoria luristanica* (Pic, 1911) = *Anthicus pietschmi* Pic, 1938 syn. nov.; *Microhoria ottomana* (LaFerté-Sénéctère, 1849) = *Anthicus merkli* Pic, 1897 syn. nov.; *Microhoria pinicola* (Reitter, 1889) = *Microhoria feroni* Bonadona, 1960 syn. nov.; *Microhoria posthuma* (Krekich-Strassoldo, 1931) = *Anthicus fumeoalatus* Krekich-Strassoldo, 1931 syn. nov.; *Microhoria truncatipennis* (Pic, 1897) = *Anthicus mouzafferi* Pic, 1910 syn. nov. **(iii) Status changes.** *Anthicus tauricus* var. *inobscura* Pic, 1908 is raised to species level as *Microhoria inobscura* (Pic, 1908) stat. nov.; *Anthicus truncatus* var. *decoloratus* Pic, 1897 is removed from synonymy with *Anthicus truncatus* Pic, 1895 and raised to species level as *Microhoria decolorata* (Pic, 1897) stat. restit. **(iv) New combinations:** *Microhoria disconotata* (Pic, 1907) comb. nov., *M. fossicollis* (LaFerté-Sénéctère, 1849) comb. nov., *M. gestroi* (Pic, 1895) comb. nov., *M. irregularis* (Pic, 1932) comb. nov., *M. lividipes* (Desbrochers des Loges, 1875) comb. nov., *M. marginicollis* (Pic, 1951) comb. nov., *M. nystii* (LaFerté-Sénéctère, 1849) comb. nov., *M. schimperi* (Pic, 1898) comb. nov., *M. semiviridis* (Pic, 1951) comb. nov., *M. strandi* (Krekich-Strassoldo, 1931) comb. nov., and *M. yemenita* (Nardi, 2004) comb. nov., all from *Anthicus* Paykull, 1798. *Microhoria abscondita* (Telnov, 2000) comb. nov., *M. adusta* (Krekich-Strassoldo, 1931) comb. nov., *M. afghana* (Telnov, 2010) comb. nov., *M. almora* (Krekich-Strassoldo, 1931) comb. nov., *M. ambusta* (Krekich-Strassoldo, 1931) comb. nov., *M. angulifer* (Pic, 1893) comb. nov., *M. anomala* (Telnov, 1998) comb. nov., *M. antinorii* (Pic, 1894) comb. nov., *M. apicordiger* (Bonadona, 1954) comb. nov., *M. aquatilis* (Krekich-Strassoldo, 1931) comb. nov., *M. assamensis* (Pic, 1907) comb. nov., *M. assequens* (Krekich-Strassoldo, 1931) comb. nov., *M. atrata* (Krekich-Strassoldo, 1931) comb. nov., *M. austriaca* (Pic, 1901) comb. nov., *M. bicarinifrons* (Pic, 1892) comb. nov., *M. biguttata* (Bonadona, 1964) comb. nov., *M. brevipilis* (Pic, 1893) comb. nov., *M. bruckii* (Kiesenwetter, 1870) comb. nov., *M. brunneipes* (Krekich-Strassoldo, 1931) comb. nov., *M. caeruleicolor* (Pic, 1906) comb. nov., *M. callima* (Baudi di Selve, 1877) comb. nov., *M. comes* (Krekich-Strassoldo, 1931) comb. nov., *M. cordata* (Krekich-Strassoldo, 1931) comb. nov., *M. curticeps* (Pic, 1923) comb. nov.,



*M. dichrous* (LaFerté-Sénéctère, 1849) comb. nov., *M. doderoi* (Pic, 1902) comb. nov., *M. erythraea* (Pic, 1899) comb. nov., *M. erythrodera* (Marseul, 1878) comb. nov., *M. feai* (Pic, 1907) comb. nov., *M. fugax* (LaFerté-Sénéctère, 1849) comb. nov., *M. fugiens* (Marseul, 1876) comb. nov., *M. garze* (Telnov, 2018) comb. nov., *M. gigas* (Pic, 1899) comb. nov., *M. grvida* (Krekich-Strassoldo, 1931) comb. nov., *M. harmandi* (Pic, 1899) comb. nov., *M. hauseri* (Pic, 1906) comb. nov., *M. henoni* (Pic, 1892) comb. nov., *M. heydeni* (Marseul, 1879) comb. nov., *M. himalayana* (Pic, 1909) comb. nov., *M. hummeli* (Pic, 1933) comb. nov., *M. immaculipennis* (Krekich-Strassoldo, 1931) comb. nov., *M. inabsoluta* (Telnov, 2003) comb. nov., *M. indepressa* (Telnov, 2000) comb. nov., *M. kabyliana* (Pic, 1896) comb. nov., *M. kejvali* (Telnov, 1999) comb. nov., *M. kham* (Telnov, 2018) comb. nov., *M. kocheri* (Pic, 1951) comb. nov., *M. kuluensis* (Pic, 1914) comb. nov., *M. lepidula* (Marseul, 1876) comb. nov., *M. longiceps* (LaFerté-Sénéctère, 1849) comb. nov., *M. longicornis* (Uhmman, 1983) comb. nov., *M. manifesta* (Pic, 1907) comb. nov., *M. martinezi* (Pic, 1932) comb. nov., *M. muguensis* (Telnov, 2000) comb. nov., *M. nigrocyanella* (Marseul, 1877) comb. nov., *M. nigrofusca* (Telnov, 2000) comb. nov., *M. nigroterminata* (Pic, 1909) comb. nov., *M. notatipennis* (Pic, 1909) comb. nov., *M. olivierii* (Desbrochers des Loges, 1868) comb. nov., *M. optabilis* LaFerté-Sénéctère, 1849) comb. nov., *M. paganettii* (Pic, 1909) comb. nov., *M. phungi* (Pic, 1926) comb. nov., *M. picea* (LaFerté-Sénéctère, 1849) comb. nov., *M. plagiostola* (Bonadonna, 1958) comb. nov., *M. plicatipennis* (Pic, 1936) comb. nov., *M. posthuma* (Krekich-Strassoldo, 1931) comb. nov., *M. postimpresca* (Pic, 1938) comb. nov., *M. postluteofasciata* (Pic, 1938) comb. nov., *M. prolatithorax* (Pic, 1899) comb. nov., *M. proterva* (Krekich-Strassoldo, 1931) comb. nov., *M. ragusae* (Pic, 1898) comb. nov., *M. semidepressa* (Pic, 1893) comb. nov., *M. separatithorax* (Pic, 1914) comb. nov., *M. shibatai* (Nomura, 1962) comb. nov., *M. schrammi* Pic, 1913) comb. nov., *M. sikkimensis* (Pic, 1907) comb. nov., *M. sinensis* (Pic, 1907) comb. nov., *M. spinipennis* (Pic, 1898) comb. nov., *M. sporadica* (Krekich-Strassoldo, 1931) comb. nov., *M. striaticollis* (Krekich-Strassoldo, 1931) comb. nov., *M. subpicea* (Pic, 1914) comb. nov., *M. tersa* (Krekich-Strassoldo, 1931) comb. nov., *M. tonkinensis* (Krekich-Strassoldo, 1928) comb. nov., *M. truncatella* (LaFerté-Sénéctère, 1849) comb. nov., *M. turgida* (Krekich-Strassoldo, 1928) comb. nov., *M. uhagoni* (Pic, 1904) comb. nov., *M. uniformis* (Krekich-Strassoldo, 1931) comb. nov., *M. variabilis* (Telnov, 2003) comb. nov., *M. weigeli* (Telnov, 2000) comb. nov., *M. versicolor* (Kiesenwetter, 1866) comb. nov., *M. wuyishanensis* (Nardi, 2004) comb. nov., and *Nitorus niger* (Uhmman, 1996) comb. nov., all from *Clavicomus* Pic, 1894. *Microhoria agriliformis* (Pic, 1893) comb. nov., *M. alferii* (Pic, 1923) comb. nov., *M. angelinii* (Degiovanni, 2012) comb. nov., *M. babaulti* (Pic, 1921) comb. nov., *M. barnevillei* (Pic, 1892) comb. nov., *M. armeniaca* (Pic, 1899) comb. nov., *M. bonnairii* (Fairmaire, 1883) comb. nov., *M. cyanipennis* (Grilat, 1886) comb. nov., *M. depressa* (LaFerté-Sénéctère, 1849) comb. nov., *M. dolichocephala* (Baudi di Selve, 1877) comb. nov., *M. duplex* (Nardi, 2004) comb. nov., *M. edmondi* (Pic, 1893) comb. nov., *M. escalerae* (Pic, 1904) comb. nov., *M. finalis* (Telnov, 2003) comb. nov., *M. fuscomaculata* (Pic, 1893) comb. nov., *M. insignita* (Pic, 1906) comb. nov., *M. luristanica* (Pic, 1911) comb. nov., *M. meloiformis* (Reitter, 1890) comb. nov., *M. mesopotamica* (Pic, 1912) comb. nov., *M. ocreata* (LaFerté-Sénéctère, 1847) comb. nov., *M. olivacea* (LaFerté-Sénéctère, 1849) comb. nov., *M. ottomana* (LaFerté-Sénéctère, 1849) comb. nov., *M. pallicra* (Dufour, 1849) comb. nov., *M. paralleliceptis* (Reitter, 1890) comb. nov., *M. paupercula* (LaFerté-Sénéctère, 1847) comb. nov., *M. platiai* (Degiovanni, 2000) comb. nov., *M. siccensis* (Normand, 1950) comb. nov., *M. subaerea* (Reitter, 1890) comb. nov., *M. subcaerulea* (Pic, 1906) comb. nov., *M. subsericea* (Pic, 1898) comb. nov., *M. tarifana* (Pic, 1904) comb. nov., *M. tibialis* (Waltl, 1835) comb. nov., *M. velox* (LaFerté-Sénéctère, 1849) comb. nov., *M. viridipennis* (Pic, 1899) comb. nov., and *M. viturati* (Pic, 1893) comb. nov., all from *Tenuicomus* Pic, 1894. *Microhoria decolorata* (Pic, 1897) comb. nov. and *M. truncata* (Pic, 1895) comb. nov. from *Stricticomus* Pic, 1894. *Microhoria truncatipennis* (Pic, 1897) comb. nov. from *Anthelephila* Hope, 1833. **(v) Lectotype designations.** Lectotypes are designated for the following species: *Anthicus depressus* LaFerté-Sénéctère, 1849, *A. edmondi* Pic, 1893, *A. luristanicus* Pic, 1911, *A. merkli* Pic, 1897, *A. mouzafferi* Pic, 1910, *A. pietschmi* Pic, 1938, *A. pinicola* Reitter, 1889, *A. posthumus* Krekich-Strassoldo, 1931, and *A. spinosus* Pic, 1912.

**Key words.** Coleoptera, Anthicidae, Microhoriini, *Aulacoderus*, *Clavicomus*, *Falsophilus*, *Liparoderus*, *Neocrohoria*, *Microhoria*, *Tenuicomus*, taxonomy, faunistics, new species, new synonymy, new status, Palaearctic Region

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## Introduction

The tribe Microhoriini Bondona, 1974 has been recognized as a natural group based on external anatomy and genitalic form (BONADONA 1974, BUCCIARELLI 1980), and more recently by shared canthariphilous behavior and associated chemical adaptations of its members (HEMP 1994). However, definitions of most Microhoriini genera are still rather archaic and questionable, based mainly on shape of the pronotum in dorsal view.

In the first world classification of Anthicidae, LaFERTÉ-SÉNECTÈRE (1849c) dealt with only 43 species that would eventually be placed as Microhoriini, and the creation of his groups based on pronotal characters was more straightforward. As knowledge of the microhoriine fauna has grown, separation of the included genera has become increasingly problematic as the defined boundaries among genera break down due to the discovery of species that are intermediates of the body and genitalic forms. In his treatment of the Italian fauna BUCCIARELLI (1980) provided broader and much more complete characterizations of the genera and subgenera by describing the differences in distinctness and setation of the lateral antebasal foveae of the pronotum, form of the pubescence on the elytra, male features of the elytral apices, and more fully describing form and position of the male genitalia. Yet he (BUCCIARELLI 1977: 20, 1980: 185) commented that in his opinion *Tenuicomus* Pic, 1894 was likely a subgenus of *Clavicomus* Pic, 1894 due to the convergent characters of the two groups, and problems in separating these two groups had been noted by PIC (1894: 42, footnote) and NARDI (2003: 55). VAN HILLE (1984: 2) commented on the issue of using pronotal form to characterize *Aulacoderus* LaFerté-Sénectère, 1849, and in essence concluded that pronotal form varies so much within the genus that it is useless in characterizing the genus.

The basic issue described above has led us to revise the classification of the tribe Microhoriini by reevaluating traditional characters and incorporating new data obtained by extensive comparative studies. As one of major outcomes the genera *Clavicomus* and *Tenuicomus* are synonymized here with *Microhoria* Chevrolat, 1877, and their species are newly placed in 10 species-groups. It has become clear that previous subdivisions are untenable with respect to variation of traditional pronotal characters (Figs 156–161). This is best demonstrated by the fact that some species-groups of *Microhoria sensu novo* are composites of species previously placed in 2–4 different genera, such as the *M. schimperi* species-group which includes species that had been residing in four genera.

Additional outcomes are the description of 19 new species of *Microhoria* from the western half of the Palaearctic Region, documentation of 10 new synonyms based on study of the types, and discussion of known nomenclatural issues dealing with species placement, authorship, and year of description, with two species being removed from *Microhoria* and placed in genera of the Anthicini Latreille, 1819. The new species are described in order to clarify issues with recognition of described species, as well as to further support the definitions of the species groups. Lectotypes are designated for nine species to fix their identity and newly proposed synonymies.

The Microhoriini is primarily a Palaearctic and Afro-tropical group, with some diffusion by species into the Oriental Region in southeast Asia. A recently described monotypic genus, *Neocrohoria* Telnov, 2019, is distributed in central Chile in the southern temperate area of the Neotropical Region, and is the only New World representative of this tribe. *Neocrohoria* is considered to be closest to *Aulacoderus*, a group that is most diverse in the southern subtropical and temperate areas of the Afrotropical Region.



## Material and methods

Specimens were examined with a Leica MZ 9.5 stereo-microscope; morphological measurements were taken by using an ocular graticule. Male genitalia were examined after being cleared in a hot 10% KOH solution and then placed on the same card as the specimen in water-soluble dimethyl hydantoin formaldehyde resin (DMHF). Illustrations were made using a drawing tube attached to an Olympus CH-2 compound microscope. SEM micrographs were taken using a Tescan Lyra3 GMU FIB Scanning Electron Microscope and JEOL JSM-7401F Field Emission Scanning Electron Microscope, and edited with Adobe Photoshop 9.0.2. software. Digital images were taken using a Nikon Coolpix 4500 digital camera attached to a Leica MZ 9.5 trinocular stereomicroscope; images of the same specimen at different focal planes were combined with Helicon Focus 5.2 Pro and edited with Adobe Photoshop 9.0.2. software.

Data from locality labels are cited verbatim for the type specimens only, and comments are placed in square brackets. Separate labels are indicated by double slashes ( // ). Locality data of the specimens from Iran collected by the expeditions of the National Museum in Prague are specified and/or supplemented by coordinates according to HOBERLANDT (1974, 1981, 1983).

The terminology of body setation follows WERNER & CHANDLER (1995).

The acronyms of the specimen depositories are:

ADBC	Augusto Degiovanni collection, Bubano, Italy;
BMNH	The Natural History Museum, London, United Kingdom;
DCDC	Donald S. Chandler collection, Durham, New Hampshire, U.S.A.;
DFPC	David Frank collection, Prague, Czech Republic;
MCSN	Museo Civico di Storia Naturale ‘Giacomo Doria’, Genova, Italy;
MNHN	Museum National d’Histoire Naturelle, Paris, France;
MZLU	Biological Museum, Lund University, Lund, Sweden;
NHMW	Naturhistorisches Museum in Wien, Austria;
NMPC	National Museum, Prague, Czech Republic;
SBPC	Stanislav Benedikt collection, Plzeň, Czech Republic;
ZFMK	Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany;
ZKDC	Zbyněk Kejval collection, Domažlice, Czech Republic;
ZSMC	Zoologische Staatssammlung München, Germany.

Other abbreviations used: [h] – handwritten; [p] – printed; alt. – altitude; coll. – collection; env. – environs of; lgt. – collected by; Mts – mountains; prov. – province; spec. – specimen(s).

## Systematic part

### I. Anthicinae (tribal classification), mesothoracic form and function, canthariphily

The subfamily Anthicinae Latreille, 1819 is currently composed of three tribes: Anthicini, Formicomini Bonadonna, 1974, and Microhoriini. A fourth tribe, the monotypic Endomiini Kaszab, 1956 based on *Endomia* Laporte, 1840, was placed as a junior synonym of Anthicini by BONADONA (1974) without comment, which was followed in a few later papers (BONADONA 1976, 1991, 2013; BUCCIARELLI 1977), or

not followed for reasons unexplained (BUCCIARELLI 1980). This synonymy is accepted here, as *Endomia* is undoubtedly close to *Anthicus* Paykull, 1798 (BONADONA 1976), sharing both aedeagal and important external characters (mainly structure of the mesothorax). The genus is distinct by the presence of the lateral lobes of the frons covering the antennal bases (bases not covered in other Anthicini), the lack of an antebasal sulcus of pronotum (variably distinct within the Anthicini), and reduced terminal spurs of tibia (though present); the short, scale-like setae of the body have been shown to transition to longer, aciculate setae as seen in *Endomia kejvali* Degiovanni, 2016. We treat this combination of features as strong support for recognizing the genus *Endomia*, but not for treating this genus as the sole member of a separate tribe.

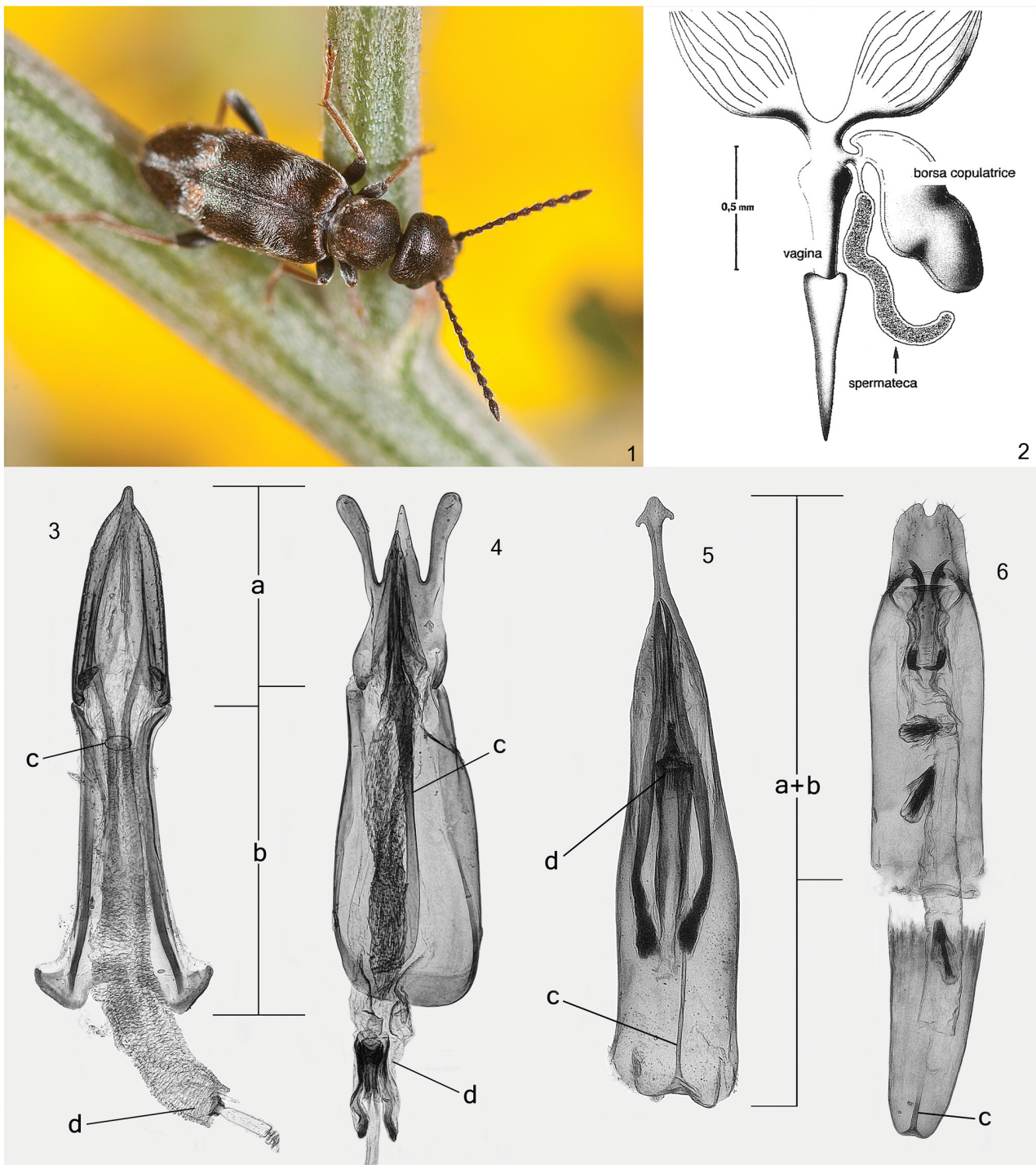
Major characters for grouping into tribes reside with the genitalic characters (BONADONA 1958a, 1974, 1990a, 2013; BUCCIARELLI 1980; CHANDLER 2010), but some external characters can be used as sets for accurately placing genera into tribes without resorting to examination of the male genitalia.

**Anthicini:** (i) mesepimera almost exclusively distinctly impressed to excavate and frequently distinctly setose; (ii) tibial spurs (especially mesotibial) mostly spinulose; (iii) intercoxal process of first abdominal ventrite more or less distinctly pointed to rounded apically (very rarely subtruncate) in dorsal view, its marginal bead almost exclusively complete; (iv) elytra with sutural stria present on at least apical third; (v) tegmen always open ventrally and clearly divided into parameral plate and phallobase, phallobase flattened, its basal margin truncate (Fig. 3); (vi) penis distinct, baculi of penis more or less widely separated (fused in some *Endomia*), primary gonopore slight; (vii) male elytral apices simple, channel/pores for cantharidin gland absent, species rarely canthariphilous, if canthariphilous then both sexes equally [?] attracted.

**Formicomini:** (i) mesepimera with small, nude fovea posteriorly, at most slightly impressed (never excavate); (ii) tibial spurs smooth; (iii) intercoxal process of first abdominal ventrite always broadly rounded to subtruncate, its marginal bead interrupted apically; elytra with sutural stria present on at most apical third; (v) tegmen always entirely open ventrally and clearly divided into parameral plate and phallobase, phallobase somewhat convex, its basal margin rounded (Fig. 4); (vi) penis distinct, baculi fused into elongate apodeme (at least in basal half), base of apodeme simple, primary gonopore distinct, with small opening; elytral apices simple, channel/pores for cantharidin gland absent, species rarely canthariphilous, if so both sexes attracted.

**Microhoriini:** (i) mesepimera excavate (Figs 35, 36), except *Falsophilus* and some apterous *Aulacoderus*; (ii) tibial spurs smooth; (iii) intercoxal process of first abdominal ventrite variable in form but its marginal bead almost exclusively complete, except *Falsophilus* (Fig. 38); (iv) elytra with sutural stria lacking to slightly indicated near apex; (v) tegmen partly closed, circular (sleeve-like), encasing endophallus (Figs 5, 6), exceptionally open ventrally but then strongly convex (*Neocrohoria*, Fig. 47), separation of parameral plate and phallobase either weakly indicated or indistinct (mostly); (vi) penis indistinct, baculi forming





Figs 1–6. 1 – *Liparoderus venator* (Dufour, 1849), Spain, Zaragoza (D. Molina det., photo by B. Campo, [www.biodiversidadvirtual.org](http://www.biodiversidadvirtual.org)). 2 – *Microhoria raveli* (Pic, 1899), female internal reproductive structures, after DE MARZO (1996). 3–6 – Aedeagus in ventral view: 3 – *Sapintus oceanicus* (LaFerté-Sénectère, 1849), India, Tamil Nadu, Poovar (ZKDC); 4 – *Anthelephila cyanea* (Hope, 1833), South Africa, Western Cape prov., Greyton (ZKDC); 5 – *Microhoria garavuti* sp. nov., holotype; 6 – *M. cervi* sp. nov., paratype, Al Mughsayl (a = parameral plate, b = phallobase, c = baculi of endophallus, d = primary gonopore). Scale not specified.

short to long thin free apodeme, base of apodeme attached to membranous apically-facing ‘cup/plate’ (Fig. 48), primary gonopore usually well-developed with opening large, but may be also indistinct; (vii) elytra almost exclusively with apical modifications related to presence of channel/pores for cantharidin gland (varying in prominence, Figs 41–46), many species are canthariphilous, with only the males being attracted.

**Mesothoracic form and function.** BONADONA (1958a: 7–8) was the first author to fully present characters of the ventral sclerites of the mesothorax when he systematically illustrated and discussed its structure for the genera treated in his monograph of the Madagascan Anthicidae. He continued providing these data for genera in some following papers: the African/Madagascan Tomoderini (BONADONA 1961), the genera of Notoxinae of France (BONADONA

1971), and for several other genera that occur in France (BONADONA 1974). Mesovenal characters were later used also by WERNER & CHANDLER (1995) to characterize groups of the New Zealand Anthicinae. Morphology of the mesovenal, mesepisterna, and mesepimera have been shown to be valuable in characterization of subfamilies, tribes, generic clusters, and genera of Anthicidae, with our focus being on the characteristics of the Microhoriini.

**Mesovenal.** The basic form of the mesovenal is triangular with the lateral margins straight and convergent anteriorly to an acute median point (BONADONA 1974; BUCCIARELLI 1980; WERNER & CHANDLER 1995; CHANDLER 2002, 2009; LAWRENCE & ŚLIPIŃSKI 2013). The posterolateral angles are narrowly rounded and acute, and extend no further laterally than to the outer margins of the mesocoxal cavities; medially it extends posteriorly as the mesovenal process that separates the mesocoxal cavities. This shape is typical of Pyrochroidae, Ischaliidae, Meloidae (Eleticinae and members of other subfamilies), and basal subfamilies of Anthicidae (Eurygeniinae, Steropinae), with Copobaeninae and Macratriinae being differently modified from this basic form. In Anthicinae there are genera/generic clusters that have the lateral margins of the mesovenal strongly, laterally lobed, with the posterolateral angles broadly rounded and extending laterally beyond a point even with the lateral margins of the mesocoxal cavities. One of the generic clusters with the lobed mesovenal is found in the Microhoriini. Here the ancestral form with straight lateral margins is present for the genera *Aulacoderus*, *Falsophilus*, and *Neocrohoria* (Figs 7, 9), with the derived lobed form characterizing the genera *Liparoderus* LaFerté-Sénéctère, 1849 and *Microhoria* (Figs 11, 13).

**Mesepisterna.** The apical portion of the mesothorax is weakly to strongly constricted near the point of articulation with the pronotum to form a more or less broad apical ‘neck.’ The anterior margin of the mesothorax is formed by the apices of the mesepisterna that are medially touching or fused to different extents. The procoxal rests present in this area may be connected to or isolated from the anterior thickened rim of the mesepisterna, and the area immediately posterior to this rim can be shallowly impressed (ancestral for Anthicinae; microhoriine genera *Aulacoderus*, *Falsophilus*, *Neocrohoria*; Figs 8, 10) or modified to form deep, transverse, well-defined lateral grooves (derived; microhoriine genera *Liparoderus* and *Microhoria*; Figs 12, 14). There are analogous but different modifications of the mesepisterna in the other Anthicinae groups, mainly in those with lobed mesovenals.

**Mesepimera.** The basal Anthicidae (e.g. Steropinae, Copobaeninae, and Eurygeniinae) and closely related heteromeran families (e.g. Meloidae, Pyrochroidae) have large mesepimera that are quite distinct, lack lines of longer setae on the posterior margin, lack any marginal foveae, and if they are tightly connected with mesepisterna, the suture is clearly defined, except for some *Stereopalpus* LaFerté-Sénéctère, 1849 and for *Mitraelabrus* Solier, 1851 (Eurygeniinae).

In Anthicinae the mesepimera are always inconspicuous, being narrow and smoothly fused to the mesepisterna, with

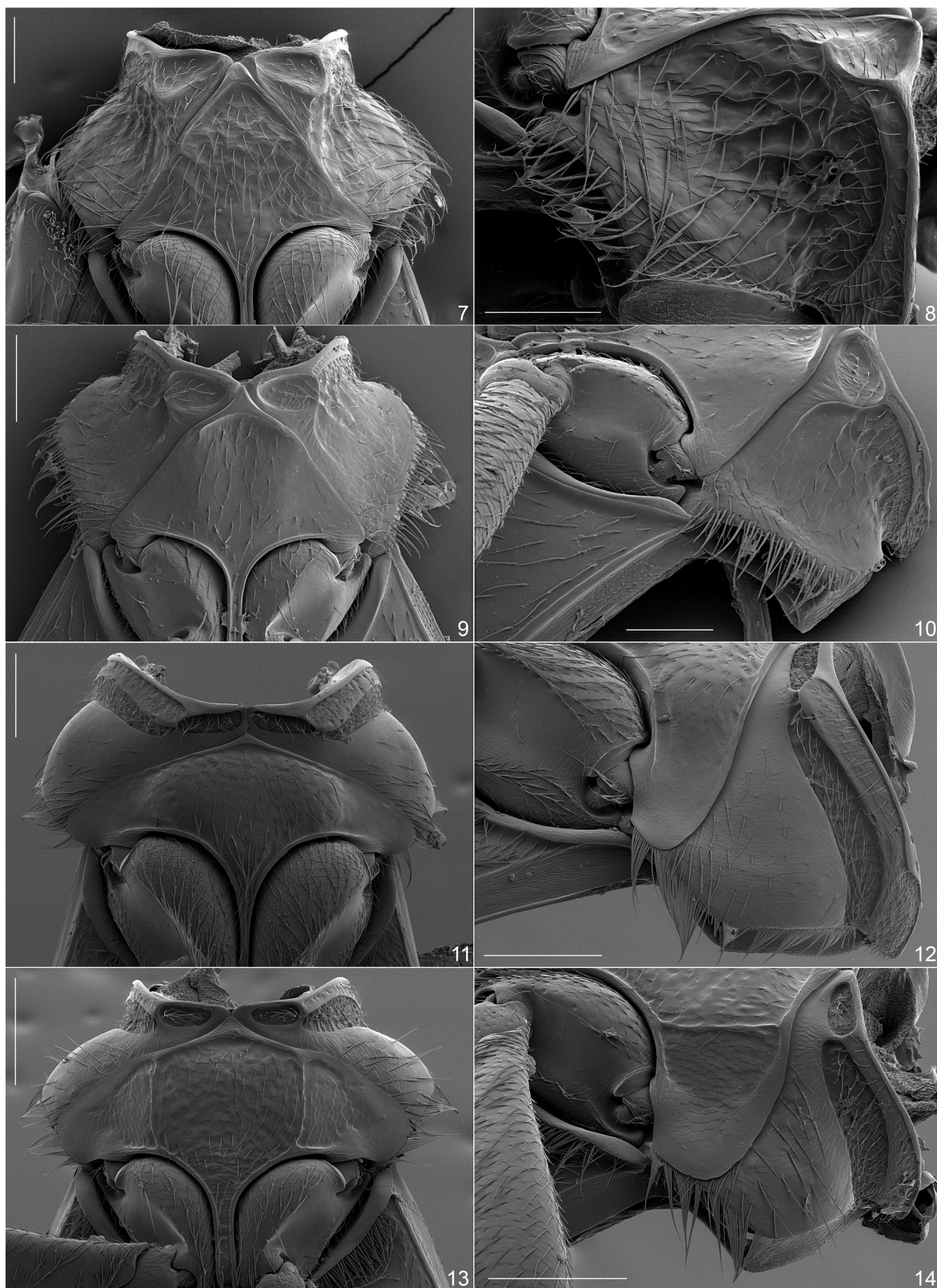
the line of fusion often seen internally as a linear flange, meaning that the apparent outer portion of the mesepisterna is in reality the mesal portion of the mesepimera. In addition they always have one or two internally projecting foveae at the sides facing the metepisterna, which is more or less deeply impressed and frequently conspicuously setose on/along the postero-ventral margin. These mesepimeral setae may be modified in various ways that are useful in recognizing generic clusters. If well-developed, the postero-lateral impression/cavity of mesepimera can be distinctly setose, including some thicker, specialized setae (Figs 34, 36).

The function of mesepimeral foveae is unknown. They are often small, but can be conspicuously large, as in *Africomus* Kejval & Chandler, 2016, numerous *Sapintus* Casey, 1895, and *Aulacoderus*. VAN HILLE (1984) discussed presence and form of these foveae in defining his species-groups of *Aulacoderus*, with their differences being included in his keys and species descriptions.

**Mesothoracic glands.** The functions of the laterally lobed mesovenal and transverse mesepisternal grooves that are characteristic of *Microhoria sensu novo* and *Liparoderus* have not been wholly determined. However, the anteromedial margin of the mesovenal is immediately posterior to the opening of the mesothoracic glands where iridoid compounds are released and which probably repel ants and other potential predators (see below). HEMP & DETTNER (1997) theorized that the channel formed at the juncture of the mesovenal and mesepisterna/mesepimera could serve as a conduit to disperse the iridoid compounds laterally through capillary action to the point where the channel contacts the mesepimeral setal row. Here the row of dense or spaced setae can serve as dispersing structures for the iridoids by wicking the compounds up the setae so they may volatilize quickly, with the strong curve of the mesovenal allowing placement of a larger number of setae on the mesepimera to disperse the chemicals. Certainly many species of *Acanthinus*, seem to run or forage with ants without being attacked or even noticeably disturbed (D. S. Chandler, pers. observ.), which could be attributed to the chemical dispersal potential of the bowed mesovenals and the mesepimera with their long appressed to erect setae.

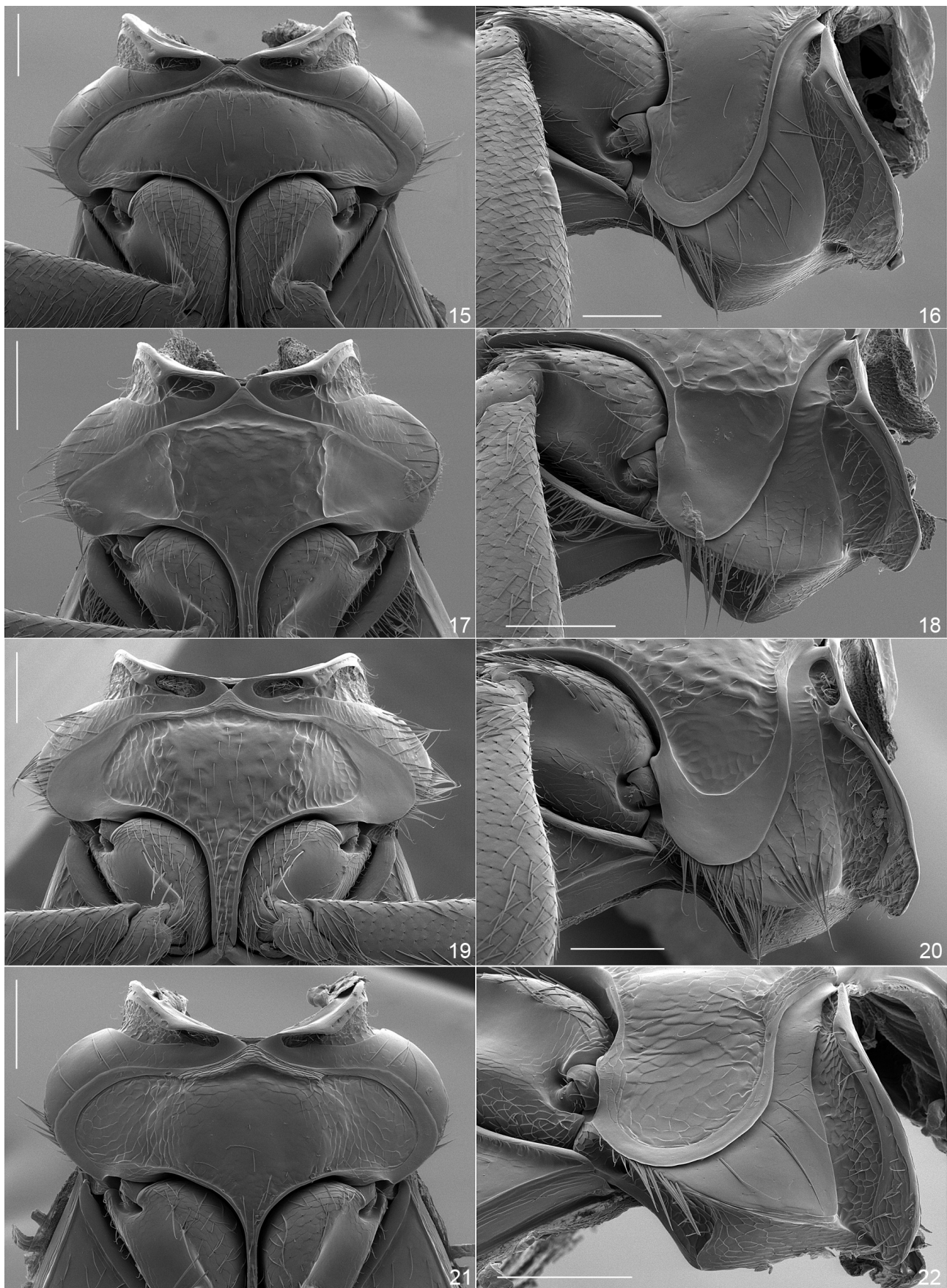
The mesothoracic glands have been found in all members examined of the Anthicinae, Notoxinae, and Tomoderinae (HEMP 1994, DE MARZO 2006, C. Hemp, in litt. [note: De Marzo did not find them in *Aulacoderus*, though other authors did, see below]). Size and morphology of these glands, chemical composition of their secretions and position of the gland orifice are variable (HEMP 1994, HEMP & DETTNER 1997, DE MARZO 2006). Different compounds are produced at the level of subfamily, with these glands producing various iridoid compounds and/or their precursors by members of the Anthicinae, aromatic compounds by Notoxinae, and indols by Tomoderinae (HEMP 1994; C. Hemp, in litt.). The defensive role of the iridoids was determined by laboratory tests and field observations in species of *Anthelephila* Hope, 1833 (HEMP & DETTNER 1997). Glands of Microhoriini were found to be moderately large in *Microhoria terminata* and small in *Aulacoderus* species (HEMP 1994, HEMP & DETTNER 1997). In an unpublished





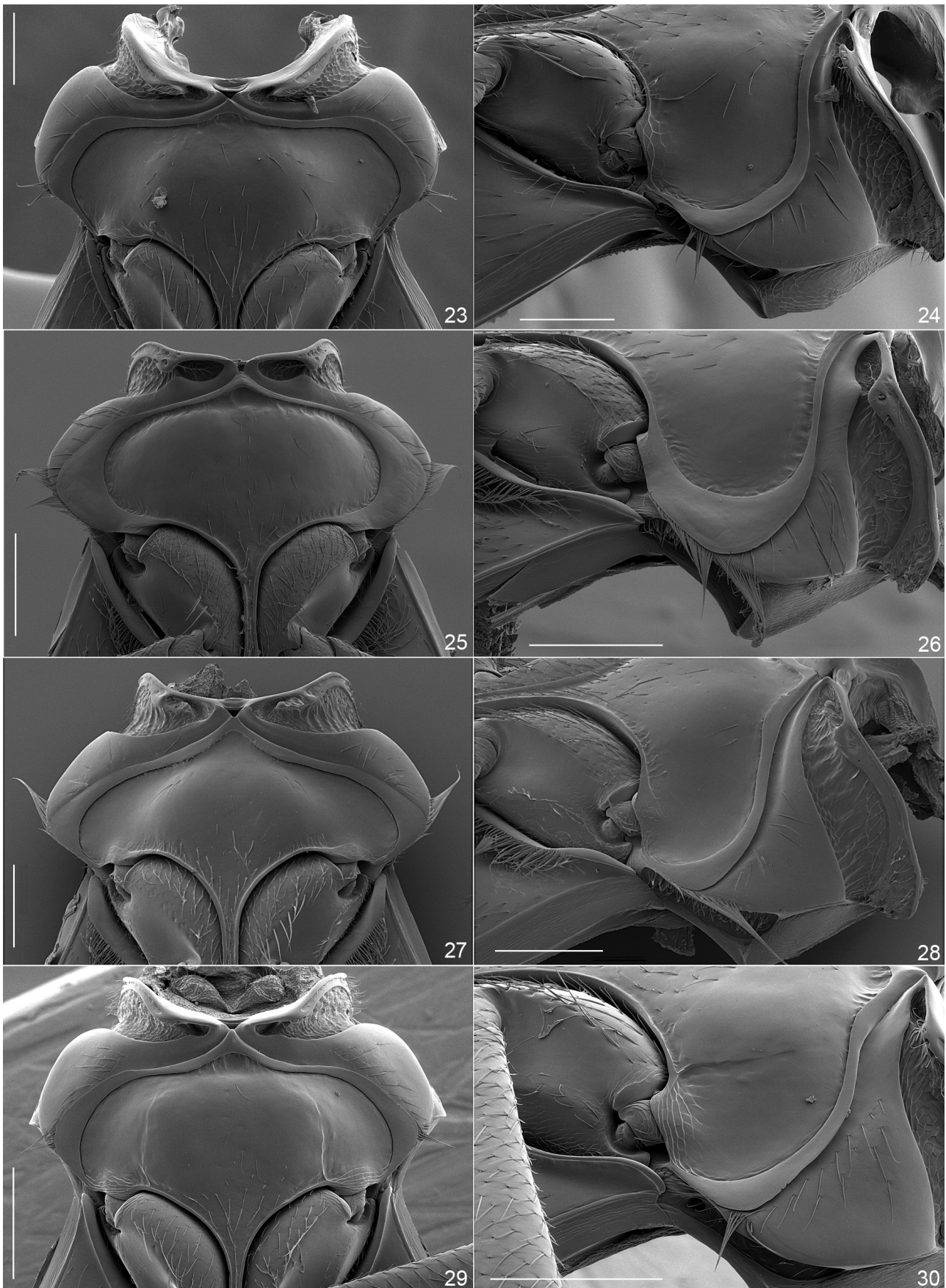
Figs 7–14. Mesothorax in ventral (left) and lateral (right) view: 7, 8 – *Neocrohoria melanura* (Fairmaire & Germain, 1863), Chile, Malleco prov., 4 km W Victoria (DCDC); 9, 10 – *Aulacoderus mutatus* (Gemming, 1870); 11, 12 – *Liparoderus venator* (Dufour, 1849); 13, 14 – *Microhoria oedipus* (Chevrolat, 1860). Scale bars: 100  $\mu$ m (Figs 7–10); 200  $\mu$ m (Figs 11–14).





Figs 15–22. Mesothorax in ventral (left) and lateral (right) view: 15, 16 – *Microhoria heydeni* (Marseul, 1879) comb. nov.; 17, 18 – *M. paupercula* (LaFerté-Sénéctère, 1849) comb. nov.; 19, 20 – *M. babaulti* (Pic, 1921) comb. nov.; 21, 22 – *M. viturati* (Pic, 1893) comb. nov. Scale bars: 100 µm.





Figs 23–30. Mesothorax in ventral (left) and lateral (right) view: 23, 24 – *Microhoria terminata* (W. L. E. Schmidt, 1842); 25, 26 – *M. longiceps* (La-Ferté-Sénectère, 1849) comb. nov.; 27, 28 – *M. gigas* (Pic, 1899) comb. nov.; 29, 30 – *M. caeruleicolor* (Pic, 1906) comb. nov. Scale bars: 100  $\mu$ m (Figs 23, 24); 200  $\mu$ m (Figs 25–30).

study by Claudia Hemp (in litt.) the mesothoracic glands of 18 species of *Microhoria* (mesoventrite laterally lobed) and four species of *Aulacoderus* (mesoventrite laterally straight) were examined, with all *Microhoria* measured and having ‘huge’ glands, and all *Aulacoderus* having ‘small to medium’ glands, with the correlation of laterally lobed mesoventrites with large glands being quite strong.

It is interesting that of the families that produce or consume cantharidin only the closely related Meloidae and Anthicidae have been documented as having mesothoracic glands (HEMP & DETTNER 1997). The defensive compounds produced by the mesothoracic glands act to protect the adults; for those species that do consume cantharidin, adults will be protected by the iridoid secretions whether or not they find cantharidin, but for those with access to a cantharidin source the eggs, larvae, and pupae will be protected also.

**Canthariphily.** Cantharidin is a monoterpene anhydride naturally produced by the fat body of many members of the Meloidae and Oedemeridae (HOLZ et al. 1994, DETTNER 1997, HASHIMOTO et al. 2016, JIANG et al. 2017). The compound is quite toxic to insects and vertebrates. Its presence is often coupled with strongly marked color patterns associated with aposematic coloration and serves as a potent feeding deterrent (CUÉNOT 1890, GÖRNITZ 1937, VAN HILLE 1954, CARRELL & EISNER 1974, DETTNER 1997). Meloid males are the primary producers of cantharidin, which is passed to the females in spermatid fluids during mating (SIERRA et al. 1976). The cantharidin is then passed by the females into their eggs (DETTNER 1997, NIKBAKHIZADEH et al. 2007) ensuring that this feeding deterrent is present not only in the female, but also serves to protect the eggs and subsequent larvae from predators and fungi (McCORMICK & CARRELL 1987, DETTNER 1997).

Though few insect groups produce cantharidin, its defensive properties have been appropriated by many groups by ingesting fluids and/or portions of living, moribund, and dead meloid and oedemerid beetles for a similar if derivative function (YOUNG 1984a, HEMP & DETTNER 2001). Relevant to this paper is that Anthicidae are the most abundant and diverse group of beetles attracted to cantharidin. Compilations of canthariphilous species have been produced by ABDULLAH (1965a), YOUNG (1984a), and HEMP & DETTNER (2001), and indicate that members of the Microhoriini and Notoxinae are the most diverse and abundant beetles attracted to cantharidin. This is in contrast to the Anthicini and the other tribes/subfamilies of Anthicidae, where scattered positive associations have been noted, but for many of these species their abundances are low. GUYON (1848) was the first to note this phenomenon for Anthicidae when he recorded *Notoxus monoceros* (Linnaeus, 1760) feeding on *Oedemera lurida* (Marsham, 1802). TYLDEN (1865) provided the earliest record for meloids when he reported several *N. monoceros* feeding on a dead *Meloe proscarabaeus* Linnaeus, 1758. Among the following succession of records during the 1800’s were notes establishing the strong attraction of members of the Microhoriini to meloids: *Liparoderus insignis* (Lucas, 1843) (SANZ DE DIEGO 1880, BOLIVAR Y URRUTIA 1896), *Microhoria fairmairei* (CHOBOUT 1895), *Microhoria*

*aubei*, *Microhoria chobauti*, *Microhoria cinctuta*, and *Microhoria pumila* (PIC 1896; all as *Anthicus*), with many subsequent records summarized by YOUNG (1974) and HEMP & DETTNER (2001).

Members of the Microhoriini and many *Notoxus* Geoffroy, 1762 (Notoxinae) have apical modifications of the male elytra where small amounts of cantharidin are secreted to attract females. During mating the cantharidin-rich spermatid fluids carry this compound to the females where some is placed in the eggs, conveying protection to the eggs and larvae from predators as well as fungi (SCHÜTZ & DETTNER 1992). In the most recent list of canthariphilous species by HEMP & DETTNER (2001), the totals for Microhoriini are: *Aulacoderus*, 48 species; *Liparoderus*, two subspecies of *L. insignis*; *Microhoria sensu novo*, 18 species (*oedipus* species-group, 10 species; *terminata* species-group, 5 species; *schimperii* species-group, 2 species; and *ocreata* species-group, 1 species). HASHIMOTO & HAYASHI (2014) recently added *Microhoria fugiens* (as *Clavicollis*, presently *fugax* species-group) as a canthariphilous species. The male/female sex ratio for attracted specimens of these species is usually near or at 100% males (VAN HILLE 1954, SCHÜTZ & DETTNER 1992, DETTNER 1997, HEMP et al. 1999, HASHIMOTO & HAYASHI 2014). It is interesting that two phylogenetically distant groups of Anthicidae (Notoxinae and Anthicinae: Microhoriini) have either independently evolved or primitively retained these elytral glands that use cantharidin as an allomone to reduce predation pressure, with the chemical also acting as a selective agent that increases male reproductive success (VAN HILLE 1984).

Scattered members of certain genera, such as *Anthelephila* and some species-groups of *Notoxus*, may be strongly attracted to cantharidin, but lack the male elytral modifications and have both sexes attracted in roughly equal numbers (VAN HILLE 1954, ABDULLAH 1965b, DETTNER 1997). For these groups cantharidin appears to function as both an aggregation and sex pheromone (ABDULLAH 1965b) that brings both sexes together where they actively mate, and also obtain a defensive compound that provides protection to both sexes after they consume their cantharidin source (DE MARZO 1992, HEMP et al. 1997, DETTNER 1997, HEMP et al. 1999).

## II. Microhoriini, history of classification

The tribe Microhoriini was proposed by BONADONA (1974) to hold *Clavicomus*, *Tenuicomus*, *Microhoria*, and *Aulacoderus*, with *Microhoria* containing five subgenera: *Liparoderus*, *Microhoria* s. str., *Immichoria* Pic, 1894, *Submicrohoria* Bonadona, 1952, and *Platyhoria* Bonadona, 1952. Species of the genera recognized by Bonadona were perspicaciously placed by LAFERTÉ-SÉNECTÈRE (1849b) as the sole members of his Quatrième Division of *Anthicus*, which held the 16° Groupe (= *Clavicomus*), 17° Groupe (= *Microhoria* and *Tenuicomus*), and 18° Groupe (= subgenus *Aulacoderus*). His subgenus *Liparoderus* was placed as the preceding 15° Groupe of the Troisième Division of *Anthicus* (LAFERTÉ-SÉNECTÈRE 1849a). The Divisions of LaFerté-Sénectère were based on differences of form as viewed dorsally, and the presence/absence of lateral ‘fossettes laterales’ (lateral setose impressions/foveae) on



the pronotum. The Quatrième Division was characterized by the presence of these lateral setose impressions, while all other groups were judged to lack these impressions, including the group containing *Liparoderus*.

LaFerté-Sénectère's informal groups continued to be recognized as distinct groups by subsequent authors and in catalogues, with the groups usually placed together or nearby, but in slightly different arrangements that increasingly emphasized differences of pronotal form as a critical factor in placement near other genera. MARSEUL (1879) proposed a series of informal names for these groups (while apparently unaware of the description of *Microhoria*) ending with '-colles' (for pronotum). These were later formalized as available scientific names by PIC (1894) as subgenera within the genus *Anthicus*: 'Clavicolles' [= *Clavicomus*], 'Tenuicolles' [= *Tenuicomus*], and 'Bifossicolles' [= *Microhoria*]. PIC (1894) also added the new subgenus *Immichoria* to the generic cluster formed around the subgenus *Microhoria*. Preceding and following catalogues treating the Coleoptera of Europe (HEYDEN 1883; REITTER 1891, 1906; WINKLER 1927) clustered *Liparoderus*, *Microhoria*, and *Aulacoderus* together, with *Clavicomus* and *Tenuicomus* placed closely anterior to this cluster, with all being treated as subgenera of *Anthicus*.

Separation of species within these subgenera was dependent solely on differences in color patterns, setal patterns, body form, and microsculpture. Hans von Kreckich-Strassoldo produced the first key to the subgenera of *Anthicus* (KREKICH-STRASSOLDO 1911) following the original key by PIC (1894), but used the informal group names of MARSEUL (1879). KREKICH-STRASSOLDO (1914) was also the first anthicid worker to use figures of the male genitalia to support his species descriptions, when he began producing figures of the male genitalia of *Anthelephila* (tribe Formicomini). Genitalic figures became increasingly common in his papers, and were critical components of major treatments of the *Anthicus humilis* group (= *Cyclodinus* Mulsant & Rey, 1866, Anthicini) (KREKICH-STRASSOLDO 1919), and relevant to this paper, the 'Bifossicolles' Group of Marseul (= *Microhoria*, *Microhoriini*) (KREKICH-STRASSOLDO 1929). This last paper was a landmark in providing modern species characterizations that incorporated figures and descriptions of the male genitalia for most of the species, while presenting other useful information such as description of the modifications of the male abdominal sternites and elytral apices.

Scattered species descriptions by Maurice Pic and other authors accumulated through the following years, with no synthetic treatments until Paul Bonadona and Johann Christoph van Hille began to publish on the Anthicidae, with the latter author contributing immensely to the knowledge of *Aulacoderus*. Dealing with taxonomy of the large genus *Anthicus*, BONADONA (1952) noted that the subgenera *Microhoria* and *Immichoria* share large lateral dimples (impressions/fossettes) on the pronotum, modified male elytral apices, and the male genitalia exhibited a unique structure within the Anthicidae. Therefore he raised *Microhoria* to the generic level and proposed its subdivision into four subgenera: *Microhoria* s. str.,

*Immichoria*, *Submicrohoria*, and *Platyhoria*, reflecting Kreckich-Strassoldo's 'Bifossicolles' Groups 4 and 5 respectively (KREKICH-STRASSOLDO 1929: 151). Subsequently Bonadona, without discussion, began treating three other subgenera of *Anthicus* as genera, namely *Aulacoderus* (BONADONA 1956: 118), *Clavicomus* (BONADONA 1960: 55), and *Tenuicomus* (BONADONA 1974: 108). These genera were more formally characterized as such by BONADONA (1974) when he proposed the tribe Microhorini (sic!, now Microhoriini [cf. NARDI 2003, BOUCHARD et al. 2011]) to hold these three genera together with *Microhoria*, which now contained four subgenera: *Liparoderus*, *Microhoria* s. str., *Immichoria*, and *Platyhoria* (BONADONA 1974). BONADONA (1988: 13) later raised *Liparoderus* to the generic level, noting *Liparoderus* LaFerté-Sénectère, 1849 was an older name than *Microhoria* Chevrolat, 1877. He subsequently used Liparoderini in place of Microhorini (BONADONA 1990a: 20) in his key to the anthicid genera of France, without an explanation of his rationale for creating this new name. In his treatment of the Anthicidae of France BONADONA (1991) used Microhorini in the key to genera (pp. 12, 14) while using Liparoderini in the text (p. 123), which was repeated in a posthumous updated and annotated reissue of this treatment (BONADONA 2013).

NARDI (2003) pointed out that Liparoderini was an unnecessary replacement name for the tribe, synonymized it with Microhoriini, and placed the names *Immichoria*, *Platyhoria*, and *Submicrohoria* as junior synonyms of *Microhoria*, leaving *Aulacoderus*, *Clavicomus*, *Liparoderus*, *Microhoria*, and *Tenuicomus* as the members of Microhoriini. TELNOV (1999) incorrectly included three New World genera as members of this tribe, based on unpublished portions of the Doctoral Dissertation of Claudia Hemp, and UHMANN (2000, 2007) incorrectly placed many Australian species in *Microhoria* and *Aulacoderus*. Recently KEJVAL (2015) added a new genus, *Falsophilus* Kejval, 2015, which was based on the distinctive Section 5 of *Aulacoderus* that had been proposed by VAN HILLE (1984), and provided a redescription of *Aulacoderus* in his treatment of the Palaearctic species of the genus (KEJVAL 2017).

In a case ruled on by the International Commission of Zoological Nomenclature (ICZN 2016), based on a petition by ALONSO-ZARAZAGA (2013), use of Marseul's names that typically ended with the suffix '-colles', and which had been used by CHANDLER et al. (2004, 2008), were adjudicated to be incorrectly formed names that were to be rejected, with the correctly formed names of PIC (1894) ending with the suffix '-comus' to be retained.

### III. Microhoriini, biology, distribution, new classification

#### Microhoriini Bonadona, 1974

Microhorini Bonadona, 1974: 106, 108, 110, Figs 9–15.

Microhoriini: BONADONA (1991): 12, 14 (key to genera, France); BUCCIARELLI (1980): 48, 175 (characters, key to genera); BOČÁK (1993): 114 (checklist); HEMP (1994): 114 (characters, relationships, phylogeny, canthariphily); DETTNER (1997): 126 (canthariphily); KUBISZ & SZWALKO (1998): 9, 32 (checklist); NARDI (2003): 53 (note, synonymy). Microhoriini: DE MARZO (1996): 150, 160 (internal reproductive structures); CHANDLER (2002): 550, 555 (biology, note); NARDI (2003): 53

(note); BOUCHARD et al. (2011): 448 (checklist); ZÁHRADNÍK (2017): 319 (checklist).

Liparoderini Bonadona, 1990a: 20.

Liparoderini: BONADONA (1991): 123 (characters, key to genera and species, France); BONADONA (2013): 11, 82 (ditto); NARDI (2003): 53 (synonymy).

**Diagnosis.** Antennal insertion exposed and clearly visible; mandibles always with two apical teeth, distinct mola, cutting edge on right mandible, and well-developed prosthema (Figs 51, 52); maxillary galea rounded and simply densely setose apically; apical maxillary palpomere small and more or less elongate to subtriangular (never conspicuously triangular/securiform); labial palpi always trimorous; latero-basal pronotal foveae usually distinct (varying in distinctness); mesepisterna usually narrowly separate medially at anterior margin (except *Liparoderus*, Fig. 32); procoxal rests with extension of anterior margin laterally; intercoxal process of mesoventrite always fully developed; mesepimera usually deeply excavate and conspicuously setose in cavity and along its ventral margin (except some apterous *Aulacoderus* and all *Falsophilus*); mesepimeral foveae always present, varying in prominence (extremely developed in some *Aulacoderus*); metendosternite with well-developed lamina (Fig. 53, simplified in apterous species only); mesoscutellum usually rounded apically, rarely bluntly pointed (apterous species only); sutural striae of elytra absent or at most indicated subapically and thus indistinct; elytral apices in males almost always modified, with channel/pores for cantharidin gland (Figs 41–46, except *Neocrohoria* and some species of *Microhoria*); metacoxae with complete posterior carina (except *Liparoderus*); terminal spurs of tibiae simple; abdominal sternite VIII formed by single or paired sclerites (sometimes conspicuously modified, Figs 90–92, 99); abdominal segment IX (spiculum) Y-shaped; tegmen of aedeagus at least partly tubular (except monotypic *Neocrohoria*); endophallus of aedeagus with various sclerotized inner structures (spines, projections, longitudinal sclerite/-s), and slender free apodeme with basal cup/plate (both sometimes strongly reduced); ovipositor with well-developed, slender coxites and styli.

**Remarks.** BONADONA (1974) proposed Microhoriini to include those groups with a unique form of the aedeagus that he described as cuculliform (= like a cap or hood). His description of this form (here modified using the terminology of LAWRENCE et al. 2011) stated that the elongate, tubular phallobase formed a ‘sleeve’, with the fused parameres forming a triangular apical parameral plate that was angled over the phallobase like a cap, and with the endophallus typically containing some large hooks/spines/teeth. This form of the aedeagus is indeed unique in the Anthicidae. The tegmen (the combined phallobase and parameral plate) forms a circular, ventrally closed structure, within which the endophallus moves. Slight lateral indentations usually indicate the separation point of the parameral plate and phallobase, but for numerous species this is not apparent. A distinct penis (median lobe) is absent. At the basal end of the tegmen is typically a distinct, lightly sclerotized ‘cup’ (VAN HILLE 1984: 6, Figs

7–9) that can move freely within the tubular tegmen. The ‘cup’ has its basal portion usually distinctly sclerotized, with the fused baculi (struts) extending apically as an apodeme that can be minute or conspicuous and may extend through the length of the endophallus. The cup can be easily pulled out and disassociated from the aedeagus. While the function of the ‘cup’ is unknown, its apodeme possibly serves to provide rigidity to the endophallus when everted during mating. The primary gonopore is typically found in the apical half near the apex of the endophallus, and is usually visible as a broad, lightly sclerotized ring.

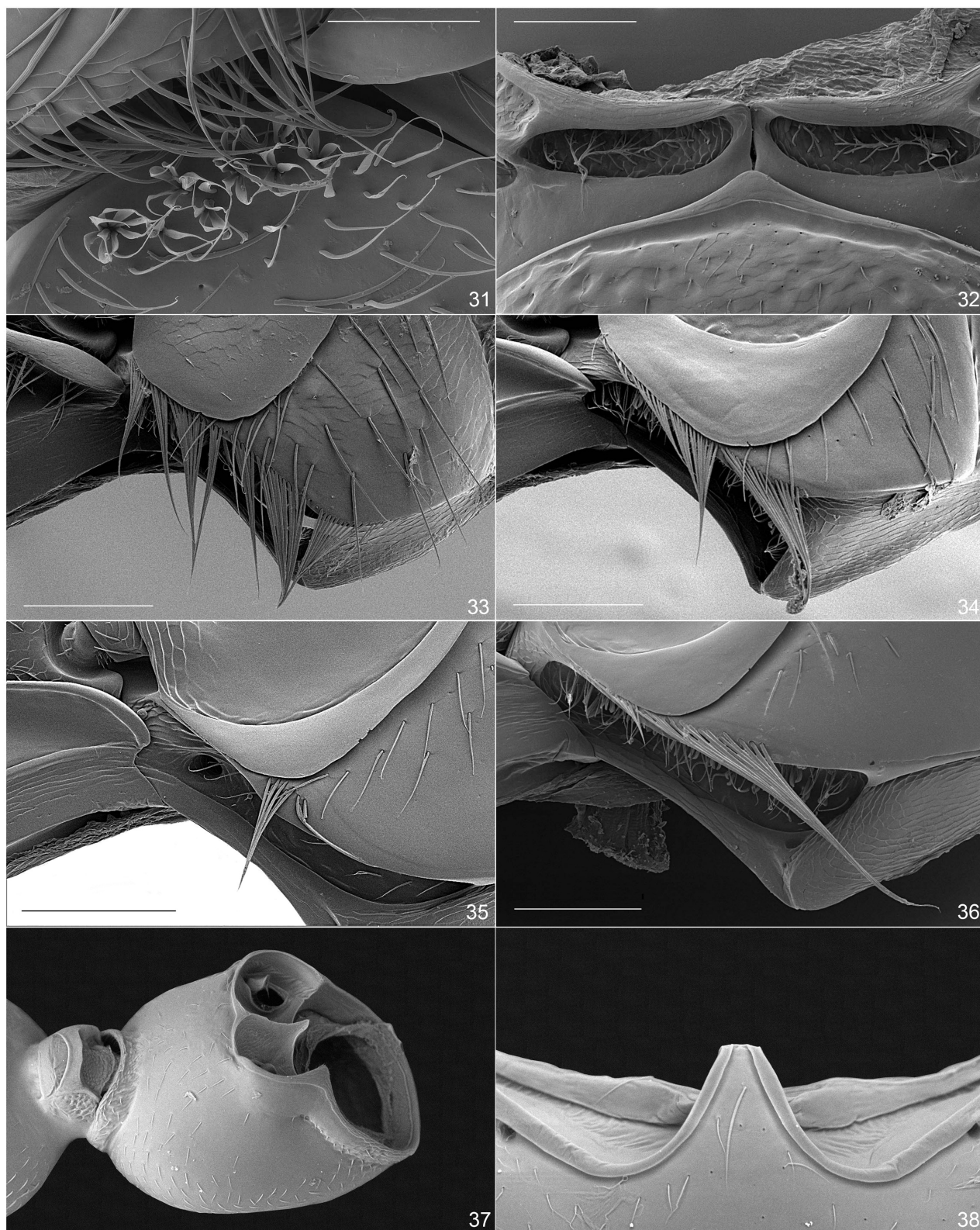
DE MARZO (1996) produced the only paper dealing explicitly with the internal female and male reproductive structures of Anthicidae. He covered 23 European species that were members of the Notoxinae and Anthicinae. Two species of Microhoriini were examined (*Clavicomus paganettii* and *Microhoria raveli*), one species of Formicomini, 17 species of Anthicini from 8 genera including *Endomia* (all preceding are Anthicinae), and three species of *Notoxus* (Notoxinae – *N. monoceros* species-group). He found that males of Microhoriini and Notoxinae species lack an ejaculatory ampulla (present in all other groups examined), and that for the females only the Microhoriini had a large thick-walled bursa copulatrix (Fig. 2) adjacent to the spermatheca in which he found 1–6 spermatophores in the *Microhoria* species and one in the single *Clavicomus* species examined. The members of *Notoxus* and other genera had a flexible expandable spermathecal receptacle situated at some distance from the vagina, with that of the Notoxinae comparably quite large. These genera lacked spermatophores, and the sperm were deposited freely mixed with secretions of the male accessory glands (DE MARZO 1996). Analogous similarities of Notoxinae and Microhoriini are that both have large sperm storage receptacles and that males could potentially share a large amount of cantharidin-laden secretions with females when mating, potentially much more than would be shared with non-canthariphilous species. In consideration of the female large seminal fluid storage organs and lack of a male ejaculatory ampulla (DE MARZO 1996), the very large primary gonopore suggests the ability to move large amounts of seminal fluid under a lower pressure, one of the issues necessary to address in transfer of cantharidin-laden fluids. Members of the European Anthicini genera, including *Endomia*, typically have a long, narrow ejaculatory duct coupled to a muscular ejaculatory ampulla that can force the free, non-motile sperm quickly through their narrow conduit (DE MARZO 1996).

The unique form of the male genitalia, with its basal cup, lack of a penis, and tubular form, along with the presence of modified male elytra associated with canthariphily provide strong support for recognizing Microhoriini as a monophyletic group, and the shared form of the mesothoracic sclerites (Figs 11–30) provides similarly strong support that *Microhoria sensu novo* is a monophyletic group. DE MARZO (1996) examined 17 species from eight European genera of Anthicini and two species of *Microhoria* placed



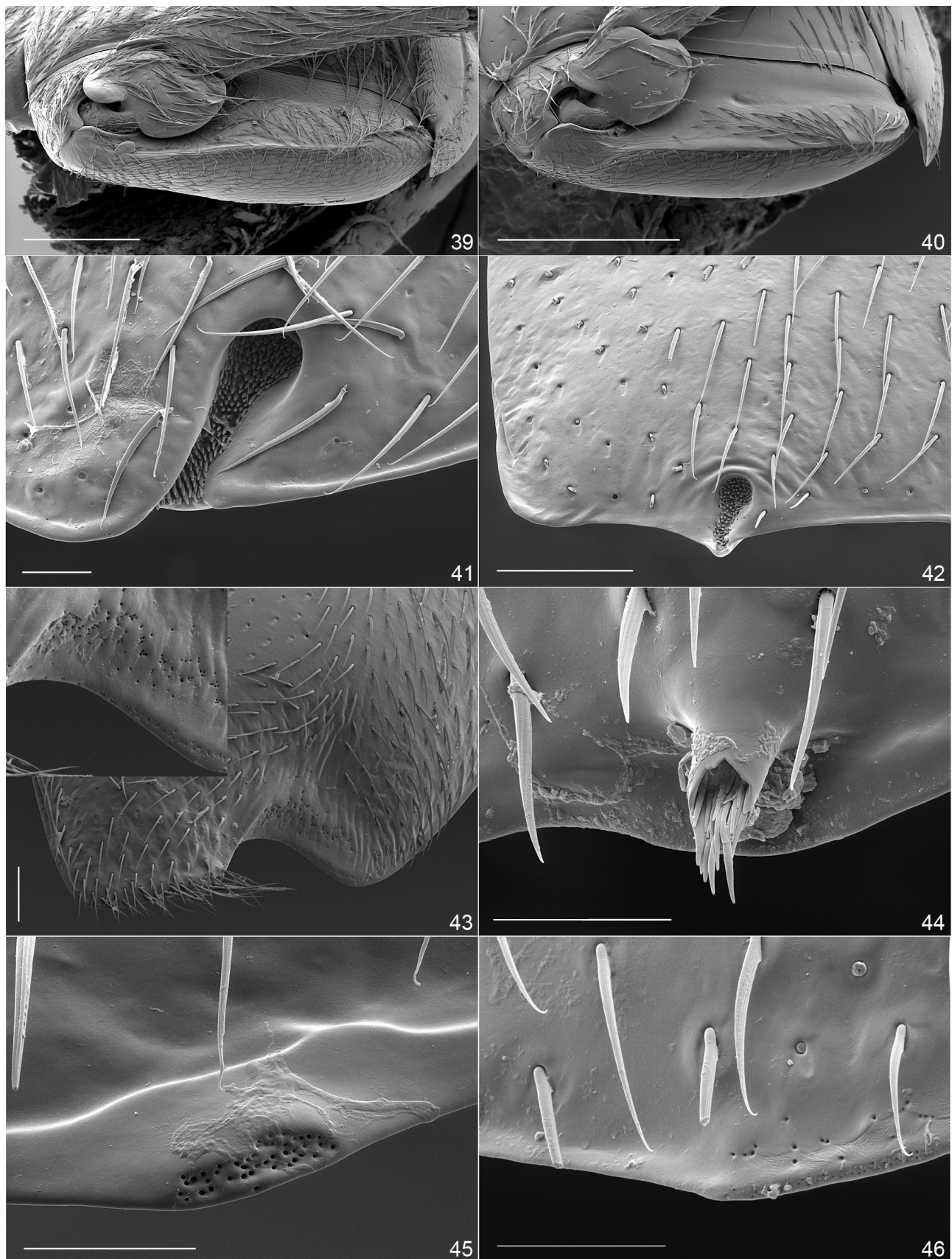
in different species-groups, and provided additional, if limited, evidence for the monophyly of the Microhoriini in noting that the female internal genitalia of *Microhoria* are different from those of Anthicini by possession of a large bursa copulatrix, presumably enlarged to receive poten-

tially large amounts of cantharidin-rich spermathecal fluids. This coupled with the quite large primary gonopore can allow the freer and quicker passage of male fluids during mating (the primary gonopore being comparatively very small in the Anthicini studied).



Figs 31–38. 31 – *Neocrohoria melanura* (Fairmaire & Germain, 1863), Chile, Malleco prov., 4 km W Victoria (DCDC), setae of metepisterna. 32 – *Liparoderus insignis* (Lucas, 1843), antero-median margin of mesothorax. 33–36 – Mesothorax in lateral view (detail): 33 – *Microhoria oedipus* (Chevrolat, 1860); 34 – *M. longiceps* (LaFerté-Sénéctère, 1849) comb. nov.; 35 – *M. caeruleicolor* (Pic, 1906) comb. nov.; 36 – *M. gigas* (Pic, 1899). comb. nov. 37, 38 – *Falsophilus minutus* (Pic, 1894), after KEJVAL (2015): 37 – prothorax in ventro-lateral view; 38 – intercoxal process of abdomen. Scale bars: 100  $\mu$ m.





Figs 39–46. 39, 40 – Metacoxa: 39 – *Liparoderus venator* (Dufour, 1849); 40 – *Microhoria oedipus* (Chevrolat, 1860). 41–46 – Apex of male elytron: 41 – *Microhoria fasciata* (Chevrolat, 1834); 42 – *M. paupercula* (LaFerté-Sénéctère, 1849) comb. nov.; 43 – *M. oedipus* (Chevrolat, 1860); 44 – *M. terminata* (W. L. E. Schmidt, 1842); 45 – *M. caeruleicolor* (Pic, 1906) comb. nov.; 46 – *M. heydeni* (Marseul, 1879) comb. nov. Scale bars: 20 µm (Figs 41, 44–46); 50 µm (Figs 42, 43), 200 µm (Figs 39, 40).

**Biology and collecting information.** Larvae of *Microhoriini* are unknown. Limited information on biology of the adults at best generally indicates where or how they were collected. In northern India adults of *Microhoria* have been most commonly taken by beating the vegetation of trees and shrubs (Z. Kejval, pers. observ.). Others have stated that beating/sweeping of oak, hazel, alder, and cherry shrubs is productive, particularly when they are flowering, as well as by sweeping trees and herbaceous plants in grasslands and meadows (BUCCIARELLI 1980, TEZCAN et al. 2002, BONADONA 2013, KEJVAL 2017). TAKADA et al. (2006) found *Microhoria fugiens* (as *Clavicollis*) to be commonly taken by sweeping the shrub layer in a Japanese forest. NARDI & MIFSUD (2003) reported the collection of *Microhoria velox velox* (as *Tenuicomus*) on *Foeniculum vulgare* (Apiaceae) in Malta, while this species was common on low whitish walls separating crops. Also *Aulacoderus sulcithorax melitensis* (Pic, 1903) was taken mainly by sweeping flowers, and in 2002 was collected primarily on mature shrubs of *Lonicera implexa* (Caprifoliaceae). *Microhoria* species have also been taken by hand-collecting from the ground where they crawl in or beneath plant debris, or very occasionally have been found beneath stones or on sand in riparian areas, though this is not a typical habitat for members of the genus.

Baits are especially effective for collecting many species of this tribe. The odor of cantharidin is quite attractive to many species of *Microhoriini*. The odor can be produced from the cantharidin present in living or dead meloid beetles, or may be generated by using ‘cantharidin traps’, Petri dishes with filter paper impregnated with a solution containing cantharidin dissolved in acetone and then dried to recrystallize the compound in the paper, or by following a similar process with cantharidin infused ethanol from vials that held meloids (VAN HILLE 1954, ABDULLAH 1965a, CHANDLER 1976, YOUNG 1984b, KEJVAL 2017). Other attractants for some *Microhoria* species are rancid lard or fats from sausage or ham (BUCCIARELLI 1980), while meat, banana, or feces may attract many species of *Aulacoderus* (VAN HILLE 1985).

AUDISIO & TAGLIANTI (2010) listed three taxa of *Microhoria* (as *Tenuicollis*) as occurring in the marine littoral zone of Italy, and COLOMBINI et al. (1991) indicated that *Microhoria dejeani* was present in the littoral zone from the vegetated area of the foredunes to the area of the back dunes with its mesophytic vegetation and ground cover. Non-overlapping succession over the course of a year was documented for six species of *Aulacoderus* at one site in Botswana by FORCHHAMMER (1986).

ELMALI (1997) reported that *Microhoria unicolor* was an effective predator of the aphid *Diuraphis noxia* (Kurdjumov, 1913) in Turkish wheat fields, though since there are numerous externally similar species occurring in Turkey and no identification keys, the accuracy of the species identification is open to question. Activity of Anthicidae as micropredators of small arthropods in crops has been noted by others (CHANDLER 2010, with references).

**Distribution.** *Microhoriini* is almost exclusively an Old World group, with the exception of the monotypic *Neo-*

*crohoria* from Chile. Biogeographically the two genera (*Aulacoderus* and *Neocrohoria*) with straight lateral mesoventral margins have a Gondwanan distribution, while the Palearctic lineage is essentially Laurasian, holding *Liparoderus* and *Microhoria*. The tribe is most speciose in subtropical areas. Many *Aulacoderus* species are present in southern Africa, but no records are known from Madagascar. In the Oriental Region, they appear to be restricted to higher elevations of the Asian mainland, with southernmost records originating from the northern provinces of Laos, Thailand, and Vietnam, and southeastern Myanmar (about same latitude as northern Thailand). *Microhoriini* species are known from Japan and Taiwan, but they are absent from the islands of the Philippines and Indonesia. Similarly, many species occur in the Himalaya, but no reliable records are known from the Indian subcontinent. The records of *Microhoria* and *Aulacoderus* from Australia by UHMANN (2000, 2007) actually belong to the anthicine genera *Sahulanthicus* Telnov, 2018 and *Sapintus* Casey, 1895 (KEJVAL 2017, TELNOV 2018b).

### Key to genera of *Microhoriini*

- 1(6) Mesoventrite triangular (Figs 7, 9); mesepisterna shallowly impressed (Figs 8, 10).
- 2(3) Anterior margin of procoxal cavity with paired incisions laterally, similarly as to Fig. 50; intercoxal process of proventrite well-developed; postcoxal bridge simple; elytral apices in males simple; distribution: Chile. .... *Neocrohoria* Telnov, 2019
- 3(2) Anterior margin of procoxal cavity simple (Fig. 49); intercoxal process of proventrite reduced; postcoxal bridge with median process (Fig. 37); elytral apices in males modified (cavity with pores); distribution: Afrotropical and Palearctic Regions.
- 4(5) Intercoxal process of abdomen narrow and subtruncate apically (Fig. 38); all tibiae with paired terminal spurs; basal piece of tegmen open. .... *Falsophilus* Kejval, 2015
- 5(4) Intercoxal process of abdomen rather short and wide, mostly rounded apically, subtriangular and pointed in some species (never narrow and subtruncate); meso- and metatibiae with single terminal spur; basal-piece of tegmen tubular. .... *Aulacoderus* LaFerté-Sénéctère, 1849
- 6(1) Mesoventrite conspicuously transverse, with strongly expanded and rounded lateral lobes (Figs 11, 13); mesepisterna with transverse groove (Figs 12, 14).
- 7(8) Mesepisterna distinctly touching medially (Fig. 11); pore of mesothoracic gland recessed into sclerite and thus well-sclerotized (Fig. 32); transverse posterior carina of metacoxae weak and reduced laterally (Fig. 39). .... *Liparoderus* LaFerté-Sénéctère, 1849
- 8(7) Mesepisterna narrowly separated medially (Fig. 13); pore of mesothoracic gland situated at margin of mesothorax; transverse posterior carina of metacoxae prominent and fully developed (Fig. 40). .... *Microhoria* Chevrolat, 1877



***Aulacoderus* LaFerté-Sénectère, 1849**

(Figs 9, 10, 49, 124, 125)

*Anthicus* subg. *Aulacoderus* LaFerté-Sénectère, 1849b: 133. Type species: *Anthicus transversalis* LaFerté-Sénectère, 1849, by original designation; currently a junior homonym, replaced with *Anthicus mutatus* Gemminger, 1870.

*Anthicus* (*Aulacoderus*): LaFerté-Sénectère (1849c): 266 (repeated description); Heyden (1883): 141 (catalogue); Heyden (1891): 268 (catalogue); Reitter (1906): 445 (catalogue); Winkler (1927): 850 (catalogue); Van Hille (1961): 232 (characters, species-groups); Van Hille (1971): 368 (list); Van Hille (1984): 2, Figs 2–4, 7–8 (monograph); Van Hille (1985): 56 (characters, key to species-groups).

*Aulacoderus*: Bonadona (1974): 108 (list); Uhmman (1976): 173 (key to genera); Uhmman (1978): 76, 79 (checklist); Bucciarelli (1980): 175, 218 (characters, key to genera and species, Italy); Angelini et al. (1995): 24 (checklist, Italy); Chandler et al. (2004): 113, 117 (nomenclature, list); Chandler et al. (2008): 429 (catalogue); Kejval (2015): 178 (characters, relationships); Kejval (2017): 57 (redescription, biology, distribution, variation, key to species, Palaearctic Region).

**Species/specimens examined.** *Aulacoderus mutatus* (Gemminger, 1870), South Africa, Simons Town, J. C. van Hille det. (ZKDC). In addition, nearly all Palaearctic species (Kejval 2017), and members of most species-groups proposed by Van Hille (1984).

**Diagnosis.** (i) Mandibles with uneven cutting edge, at most with small denticle distally on right mandible; (ii) anterior margin of procoxal cavity nearly evenly concave, lacking distinct incision, Fig. 49; (iii) intercoxal process of proventrite reduced; (iv) postcoxal bridge with median projection; (v) mesoventrite subtriangular, Fig. 9; (vi) mesepisterna shallowly impressed, lacking transverse groove, Fig. 10; (vii) mesepisterna distinctly separate medially on anterior margin; (viii) pore of mesothoracic gland situated at margin of mesothorax, orifice inconspicuous; (ix) intercoxal process of abdomen rather short and wide, mostly rounded apically, subtriangular and pointed in some species; (x) posterior transverse carina of metacoxae distinct and fully developed; (xi) meso- and metatibiae with single terminal spur; (xii) basal-piece of tegmen tubular and well-developed (mostly longer or about as long as apical portion).

**Distribution.** Afrotropical and Palaearctic Region (about 140 species). The genus is extremely speciose in southern Africa, however no records are known from Madagascar. In the Palaearctic Region it is restricted to the western subtropical areas (27 species); its northernmost reliable records originate from Armenia, Croatia, Italy, and the easternmost records are from Afghanistan (Chandler et al. 2008, Kejval 2017).

**Relationships.** *Aulacoderus* is a distinctive genus, closely related to *Falsophilus* as indicated by the following shared features. The characters i, iii, v–viii (symplesiomorphies) and ii, iv, x (synapomorphies) are shared with this genus (Kejval 2017). As for differences (ix, xi, xii), the shape of the intercoxal process of the abdomen (ix) is variable, but never narrow and subtruncate (as it is in *Falsophilus*) or narrowed and sharply pointed apically (plesiomorphic condition). The reduced number of terminal spurs of the meso- and metatibiae (xi) is undoubtedly derived and seems to be stable, however, this character, as well as the well-developed, tubular basal-piece of the tegmen (xii), are shared with numerous *Microhoria*.

In addition, *Aulacoderus* seems to lack any metathoracic and/or abdominal foveae or setose impressions that are known in *Liparoderus*, many *Microhoria*, and numerous *Falsophilus*.

***Falsophilus* Kejval, 2015**

(Figs 37, 38, 126)

*Falsophilus* Kejval, 2015: 176, figs 1–4. Type species: *Formicomus minutus* Pic, 1894, by original designation.

**Diagnosis.** (i) mandibles with uneven cutting edge, at most with small denticle distally on right mandible; (ii) anterior margin of procoxal cavity nearly evenly concave, lacking distinct incision; (iii) intercoxal process of proventrite reduced; (iv) postcoxal bridge with median projection, Fig. 37; (v) mesoventrite almost exclusively subtriangular; (vi) mesepisterna shallowly impressed, lacking transverse groove; (vii) mesepisterna separate or at most narrowly touching medially on anterior margin; (viii) pore of mesothoracic gland situated at margin of mesothorax, orifice inconspicuous; (ix) intercoxal process of abdomen narrow and subtruncate apically, Fig. 38; (x) posterior transverse carina of metacoxae fully developed; (xi) meso- and metatibiae with two terminal spurs; (xii) basal-piece of tegmen open and very short.

**Distribution.** Afrotropical Region (16 species, all apterous); known only from South Africa (Western, Northern and Eastern Cape) and Namibia.

**Relationships.** *Falsophilus* is undoubtedly very closely related to *Aulacoderus*, differing only in three characters (ix, xi, xii). The subtruncate intercoxal process of abdomen (locking mechanism of abdomen generally) may be related to aptery, however it was not found in apterous *Aulacoderus* species, and seems to represent a generic autapomorphy (Kejval 2015).

In addition, most species are remarkable in having small, nude, paired metaventral and abdominal foveae that are rather dissimilar to the setose impressions/slits in numerous *Microhoria* and *Liparoderus*.

***Liparoderus* LaFerté-Sénectère, 1849**

(Figs 1, 11, 12, 32, 39, 50, 52, 127)

*Anthicus* subg. *Liparoderus* LaFerté-Sénectère, 1849a: 85. Type species: *Anthicus insignis* Lucas, 1843, by monotypy.

*Anthicus* (*Liparoderus*): LaFerté-Sénectère (1849c): 229 (repeated description); Heyden (1883): 141 (catalogue); Heyden (1891): 267 (catalogue); Reitter (1906): 443 (catalogue); Pic (1911b): 30 (catalogue); Winkler (1927): 846 (catalogue); Fuente (1932): 117 (catalogue, Iberian Peninsula).

*Microhoria* (*Liparoderus*): Bonadona (1955): 102, 104 (key to species, France); Bonadona (1958b): 296 (characters, checklist, key to species); Bonadona (1974): 108 (checklist, France); Bucciarelli (1980): 191, 194 (characters).

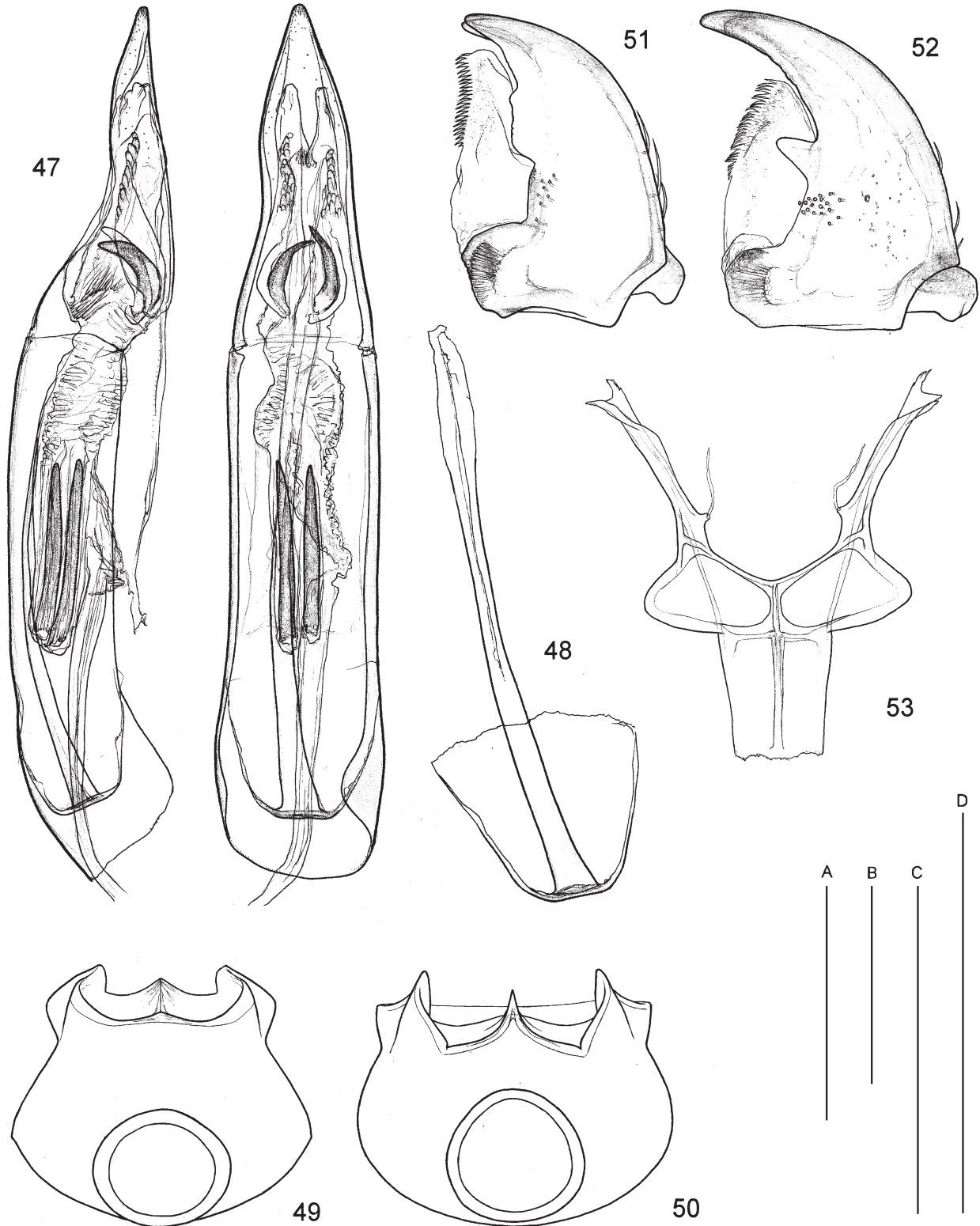
*Liparoderus*: Bonadona (1988): 13 (genus status, characters, key to species); Bonadona (1990a): 21, 23 (characters, key to genera, France); Bonadona (1991): 126 (characters); Nardi (2003): 58 (note); Chandler et al. (2004): 113, 119 (nomenclature, list); Chandler et al. (2008): 438 (catalogue); Bonadona (2013): 10, 78, 80, 107 (characters, key to genera, France); Gouvérs & Ponel (2014): 559 (checklist, France).

**Species/specimens examined.** *Liparoderus insignis*, Spain [no precise data], Z. Kejval det. (ZKDC); *L. venator* (Dufour, 1849), Spain, Alicante, Z. Kejval det. (ZKDC).



**Diagnosis.** (i) mandibles on inner margin always with conspicuous, apically bluntly pointed tooth-like process, Fig. 52; (ii) anterior margin of procoxal cavity with distinct paired incisions, Fig. 50; (iii) intercoxal process of proventrite well-developed; (iv) postcoxal bridge simple; (v) meso-ventrite conspicuously transverse, with strongly expanded/

lobed, apically rounded lateral arms, Fig. 11; (vi) mesepisterna with transverse groove, Fig. 12; (vii) mesepisterna distinctly touching medially; (viii) pore of mesothoracic gland situated ventrally, orifice quite distinct, sclerotized, Fig. 32; (ix) intercoxal process of abdomen conspicuously long, narrow and sharply pointed; (x) posterior transverse



Figs 47–53. 47, 48 – *Neocrohoria melanura* (Fairmaire & Germain, 1863), O'Higgins prov., Cuesta Chada (ZKDC): 47 – aedeagus in lateral (left) and ventral (right) view; 48 – fused baculi of endophallus. 49, 50 – Prothorax in ventro-cranial view: 49 – *Aulacoderus mutatus* (Gemminger, 1870); 50 – *Liparoderus venator* (Dufour, 1849). 51, 52 – Right mandible: 51 – *Microhoria oedipus* (Chevrolat, 1860); 52 – *Liparoderus insignis* (Lucas, 1843). 53 – *M. oedipus*, metendosternite. Scale bars: 0.2 mm – A (Figs 51, 52); 0.5 mm – B (Fig. 50), C (Fig. 53), D (Figs 47, 48, 49).

carina of metacoxae incomplete, reduced laterally, Fig. 39; (xi) meso- and metatibiae with two terminal spurs; (xii) basal piece of tegmen well-developed, tubular.

**Distribution.** Western Palaearctic Region (5 species); restricted to the northern, Mediterranean part of Africa and south-western Europe (Spain and southern France) (CHANDLER et al. 2008).

**Relationships.** *Liparoderus* is a rather distinctive genus, and is undoubtedly closely related to *Microhoria*. It was treated as its subgenus by BONADONA (1955), despite having priority (NARDI 2003). It differs from *Microhoria* by three major characters (vii, viii, x); the medially touching mesepisterna and well-defined pore of the mesothoracic gland (vii, viii) are undoubtedly derived and unique within the Microhoriini. These states are known, however, in some genera from different Anthicinae tribes, e.g. *Anthelephila*, *Acanthinus* LaFerté-Sénéctère, 1849, and *Ischyropalpus* LaFerté-Sénéctère, 1849.

In addition, the two species examined display peculiar short, slit-like metaventral foveae, robust terminal spurs of the metatibiae that are articulated rather subapically, and a conspicuously long, narrow, and sharply pointed intercoxal process of the abdomen. The mandibular process (i), noted already by CHANDLER (2010), is also present in *Microhoria*, though it is less prominent, and has been found only in a single unidentified species of the *M. fasciata* species-group from Spain (out of the seven species of same group examined, which holds 107 species in total).

### *Microhoria* Chevrolat, 1877

(Figs 13–30, 33–36, 40–46, 51, 128–147, 151–155)

*Anthicus* subg. *Microhoria* Chevrolat, 1877: 168. Type species: *Anthicus oedipus* Chevrolat, 1860, subsequent designation by BONADONA (1952).

*Anthicus* (*Microhoria*): PIC (1911b): 30 (catalogue); WINKLER (1927): 849 (catalogue).

*Microhoria*: BONADONA (1952): 233 (genus status, subgenera); BONADONA (1955): 101 (characters, key to species, France); BONADONA (1974): 108 (list, key to genera, France); UHMANN (1976): 172 (key to genera); UHMANN (1978): 76, 79 (checklist); BONADONA (1990a): 21 (key to genera, France); BONADONA (1990b): 364 (characters, subgenera, key to species, France); BONADONA (1991): 124, 128 (characters, key to species, France); BONADONA (2013): 11, 82, 108 (France); BUCCIARELLI (1980): 176, 191 (characters, key to genera and species, Italy); UHMANN (1992): 88, 140 (key to genera and species, Iberian Peninsula); KUBISZ & SZWALCO (1998): 9, 32 (characters, checklist, key to species, Poland); CHANDLER et al. (2004): 113, 119 (nomenclature, list); CHANDLER et al. (2008): 438 (catalogue); ALONSO-ZARAZAGA (2013): 172, 180 (notes); BONADONA (2013): 11, 82 (characters, key to species, France); GOUVERS & PONEL (2014): 559 (checklist, France); ZAHRADNÍK (2017): 319 (checklist).

*Microhoria* (misspelling): HORION (1956): 90 (note).

*Bifossicollis* Sahlberg, 1903a: 31. Type species: *Anthicus iscarriotes* LaFerté-Sénéctère, 1849, by monotypy.

*Bifossicollis*: CHANDLER et al. (2004): 113, 118 (list, nomenclature); ALONSO-ZARAZAGA (2013): 175, 176, 180 (notes).

*Anthicus* subg. *Immicrohoria* Pic, 1894: 72. Type species: *Notoxus fasciatus* Chevrolat, 1834, subsequent designation by BONADONA (1952).

*Anthicus* (*Immicrohoria*): PIC (1911b): 30 (catalogue); WINKLER (1927): 846 (catalogue).

*Microhoria* (*Immicrohoria*): BONADONA (1952): 234 (new combination); BONADONA (1974): 108 (list of subgenera); BONADONA (1990b): 364 (characters); BONADONA (1991): 128 (characters); BUCCIARELLI (1980): 194 (characters); ANGELINI et al. (1995): 23 (checklist, Italy); NARDI

(2003): 58 (synonymy); CHANDLER et al. (2004): 120 (note); BONADONA (2013): 11, 82 (France).

*Microhoria* subg. *Platyoria* [sic!] Bonadona, 1952: 234. Type species: *Anthicus terminatus* W. L. E. Schmidt, 1842, by original designation.

*Microhoria* (*Platyoria*): NARDI (2003): 58 (correction of original spelling).

*Microhoria* (*Platyhoria*): BONADONA (1974): 108 (list of subgenera); BONADONA (1990b): 364 (characters); BONADONA (1991): 128 (characters); BUCCIARELLI (1980): 194 (characters); ANGELINI et al. (1995): 23 (checklist, Italy); NARDI (2003): 58 (correction of spelling, synonymy); CHANDLER et al. (2004): 118 (note); BONADONA (2013): 11, 82, 108 (France).

*Microhoria* subg. *Submicrohoria* Bonadona, 1952: 234. Type species: *Anthicus plumbeus* LaFerté-Sénéctère, 1849, by original designation.

*Microhoria* (*Submicrohoria*): BONADONA (1974): 108 (list of subgenera); BUCCIARELLI (1980): 194 (characters); NARDI (2003): 58 (synonymy); CHANDLER et al. (2004): 118 (note).

*Anthicus* subg. *Clavicomus* Pic, 1894: 70, **syn. nov.** Type species: *Anthicus longiceps* LaFerté-Sénéctère, 1849, subsequent designation by BUCCIARELLI (1980).

*Anthicus* (*Clavicomus*): PIC (1911b): 30 (catalogue); WINKLER (1927): 842 (catalogue).

*Clavicomus*: BONADONA (1964): 239; BONADONA (1974): 108, 110 (list, key to genera); UHMANN (1976): 173 (key to genera); UHMANN (1978): 76, 79 (checklist); BONADONA (1990a): 21 (characters, key to genera, France); BONADONA (1991): 124 (character, key to genera, France); BUCCIARELLI (1980): 176 (characters, key to genera and species, Italy); UHMANN (1992): 88, 131 (key to genera and species, Iberian Peninsula); ANGELINI et al. (1995): 23 (checklist, Italy); CHANDLER et al. (2004): 118 (note); ALONSO-ZARAZAGA (2013): 174, 176, 180 (notes, synonymy); BONADONA (2013): 11, 79, 108 (characters, key to genera, France).

*Clavicolis* Sahlberg, 1903b: 55. Type species: *Anthicus longiceps* LaFerté-Sénéctère, 1849, subsequent designation by BUCCIARELLI (1980).

*Clavicolis*: CHANDLER et al. (2004): 113, 118 (nomenclature, list, synonymy); CHANDLER et al. (2008): 430 (catalogue); MIN et al. (2012): 276 (diagnosis, records); ALONSO-ZARAZAGA (2013): 175, 176, 182 (notes, synonymy); GOUVERS & PONEL (2014): 559 (checklist, France).

*Pseudanthicus* Desbrochers des Loges, 1868: 80. Type species: *Formicomus oliverii* Desbrochers des Loges, 1868, by monotypy.

*Pseudanthicus*: ALONSO-ZARAZAGA (2013): 178, 180, 182 (note, synonymy).

*Pseudanthicus* (misspelling): CHANDLER et al. (2004): 118 (note, synonymy); ALONSO-ZARAZAGA (2013): 178 (note on spelling).

*Anthicus* subg. *Tenuicomus* Pic, 1894: 69, **syn. nov.** Type species: *Anthicus pumilus* Baudi, 1877, subsequent designation by ALONSO-ZARAZAGA (2013).

*Anthicus* (*Tenuicomus*): PIC (1911b): 30 (catalogue); WINKLER (1927): 844 (catalogue).

*Tenuicomus*: BONADONA (1974): 108, 110 (list, key to genera); UHMANN (1976): 173 (key to genera); UHMANN (1978): 76, 80 (checklist); BUCCIARELLI (1980): 176, 185 (characters, key to genera and species, Italy); UHMANN (1992): 88, 136 (key to genera and species, Iberian Peninsula); ANGELINI et al. (1995): 23 (checklist, Italy); CHANDLER et al. (2004): 121 (note); ALONSO-ZARAZAGA (2013): 174, 177, 179, 181, 182 (notes, type species designation, synonymy); BONADONA (2013): 11 (key to genera, France).

*Tenuicollis* Sahlberg, 1903b: 56. Type species: *Anthicus pumilus* Baudi, 1877, subsequent designation by ALONSO-ZARAZAGA (2013).

*Tenuicollis*: CHANDLER et al. (2004): 113, 121 (nomenclature, list); CHANDLER et al. (2008): 447 (catalogue); ALONSO-ZARAZAGA (2013): 175, 177, 182 (notes, synonymy).

**Species/specimens examined.** *Microhoria dejeani* (LaFerté-Sénéctère, 1849), Corse, Pinetu, Z. Kejval det. (ZKDC); *M. fasciata* (Chevrolat, 1834), Greece, Peloponnesos, Kalogria, Z. Kejval det. (ZKDC); *M. oedipus* (Chevrolat, 1860), Morocco, Ifrane, Z. Kejval det. (ZKDC); *M. pallidula* (Pic, 1892), Russia, Orenburg Region, Totskoye, Z. Kejval det. (ZKDC, NMPC); *M. paykulli* (Gyllenhal, 1808), Spain, Teruel prov., El Portillo, Z. Kejval det., tentatively identified (ZKDC); *M. plumbea* (W. L. E. Schmidt, 1842), France, Le Levandou, Z. Kejval det. (ZKDC, NMPC); *M. schimperi*



(Pic, 1898), Ethiopia ('MUSEUM PARIS ABYSSINIE SCHIMPER 430-50'), possibly syntype (ZKDC); *M. terminata* (W. L. E. Schmidt, 1842), Greece, Corfu, Agios Georgios, Z. Kejval det. (ZKDC); *M. venusta* (A. Villa & J. B. Villa, 1833), Italy, Trentino-Alto Adige Region, Folgaria, Z. Kejval det. (ZKDC); *M. volxemi* (Marseul, 1878), Portugal, Faro Carrapateira-Amado, Z. Kejval det., tentatively identified (ZKDC); *M. vosseleri* (Pic, 1894), Algeria, Aïn Sefra, Z. Kejval det. (ZKDC).

*Clavicomus antinorii* (Pic, 1894), Ethiopia, Scioa, Argu Agher, syntype (MCSN); *C. apicordiger* (Bonadona, 1954), Morocco, Khenifra, P. Bonadona det. (ZSMC); *C. caeruleicolor* (Pic, 1906), Thailand, Mae Hong Son Province, Soppong, Z. Kejval det. (ZKDC); *C. biguttatus* Bonadona, 1964, Afghanistan, Tangi-Gharuh, paratype (ZKDC); *C. callimus* (Baudi di Selve, 1877), Spain, Motril-Carchuna, G. Uhmann det. (ZKDC); *C. fugax* (LaFerté-Sénéctère, 1849), Myanmar, J. V. Helfer lgt., H. Krekich-Strassoldo det. (NMPC, ZKDC); *C. fugiens* (Marseul, 1876), Japan, Honshu, Osaka-fu Iwawakiyama, Z. Kejval det. (ZKDC); *C. gigas* (Pic, 1899), Turkey, Marmaris, Z. Kejval det. (ZKDC); *C. henoni* (Pic, 1892), Algeria, Misserghin, M. Pic det. (NHMW); *C. heydeni* (Marseul, 1879), Portugal, Odiáxere, G. Uhmann det. (ZKDC); *C. longiceps* (LaFerté-Sénéctère, 1849), Italy, Palermo, H. Krekich-Strassoldo det. (ZKDC); *C. optabilis* (LaFerté-Sénéctère, 1849), France, Nice, P. Bonadona det. (MNHN); *C. semiviridis* (Pic, 1951), Ethiopia, Djem-Djem Forest, syntype (ZKDC); *C. versicolor* (Kiesenwetter, 1866), Spain, Valencia, Z. Kejval det. (NMPC, ZKDC).

*Tenuicomus babaulti* (Pic, 1921), Tanzania, Arusha District, Mto Wa Mbu env., Z. Kejval det. (ZKDC); *T. barnevillei* (Pic, 1892), Spain, Valencia, Burjasot, H. Krekich-Strassoldo det. (ZKDC); *T. cyanipennis* (Grilat, 1886), Tunisia [no precise data], Z. Kejval det. (ZKDC); *T. fuscomaculatus* (Pic, 1893), Algeria [no precise data], Z. Kejval det. (ZKDC); *T. ocreatus* (LaFerté-Sénéctère, 1847), Algeria, Bouïra, Z. Kejval det. (ZKDC); *T. olivaceus* (LaFerté-Sénéctère, 1849), Spain, Malaga Province, Puente de Salina, Z. Kejval det. (ZKDC); *T. pauperculus* (LaFerté-Sénéctère, 1849), Algeria, Miliana, H. Krekich-Strassoldo det., as *Anthicus pumilus* (ZKDC); *T. subcaeruleus* (Pic, 1899), India, Himachal Pradesh, Keylong, Z. Kejval det. (ZKDC); *T. viturati* (Pic, 1893), Algeria, Ait Hassem, Z. Kejval det. (ZKDC).

**Diagnosis.** (i) mandibles almost exclusively with simple, at most uneven cutting edge, with small denticle distally on right mandible, Fig. 51 (see Remarks); (ii) anterior margin of procoxal cavity with paired lateral incisions, similarly as to Fig. 50; (iii) intercoxal process of proventrite almost exclusively well-developed (see Remarks); (iv) postcoxal bridge simple; (v) mesoventrite transverse, strongly expanded and rounded laterally, Fig. 13; (vi) mesepisterna with transverse groove, Fig. 14; (vii) mesepisterna narrowly separated medially; (viii) pore of mesothoracic gland situated at margin of mesothorax, orifice well-defined, separated from intersegmental membrane by sclerotized bridge; (ix) intercoxal process of abdomen more or less pointed or at most narrowly rounded apically; (x) posterior transverse carina of metacoxae fully developed,

Fig. 40; (xi) mesotibiae with two, metatibiae with one or two terminal spurs; (xii) basal-piece of tegmen well-developed, tubular.

**Distribution.** Afrotropical, Palaearctic and Oriental region (presently about 340 species). All Oriental species are known from higher altitudes of the Asian mainland. Afrotropical species are distributed in northeastern Africa (mostly Ethiopia), and their southernmost records originate from Tanzania. **Relationships.** *Microhoria* is undoubtedly very close to *Liparoderus* and especially larger, robust species, having silvery setose markings of elytra (formerly classified in the subgenus *Immichoria*) can be easily confused with it. *Microhoria* can be distinguished from *Liparoderus* by three characters (vii, viii, x), and at least the fully developed posterior transverse carina of the metacoxae (x) can be regarded as a derived character state.

**Remarks.** The type species of *Microhoria* is *Anthicus oedipus*. Its species name refers to conspicuously modified metatibiae in this species (Fig. 139), and it seems likely that Chevrolat named his species after Oedipus, mythical Greek king of Thebes (who was named for his swollen feet). In this case the name should be treated as a noun in apposition, without change of suffix (ICZN, 31.2.1).

The intercoxal process of the proventrite is typically well-developed in *Microhoria*. It may be exceptionally reduced as in *M. fasciata*, but even this species has a simple postcoxal bridge that lacks a median process (small posterior protrusion of median carina is situated shortly before even posterior margin of this bridge). Similarly, the mandibles of *Microhoria* display rather uniform morphology (Fig. 51), but there is at least one species from Spain (unidentified, *M. fasciata* species-group, ZKDC) showing a small but distinct process that resembles the condition exhibited in *Liparoderus* (Fig. 52).

**Clavicomus.** *Clavicomus* is traditionally characterized by a somewhat elongate pronotum, which is more or less distinctly impressed laterally at the posterior half (BONADONA 1974, BUCCIARELLI 1980). Its type species, *C. longiceps*, shares all important characters of *Microhoria* (*sensu stricto*). The only two noteworthy differences outside of the secondary sexual characters are: mesoventrite with margins completely bordered (cf. Figs 26 *versus* 14), and the mesoventrite disc being evenly convex and lacking submedian carinae (cf. Figs 25 *versus* 13). As documented below (see also remarks under *Tenuicomus*), these two characters are subject to interspecific variation and/or they are shared by numerous species currently placed in *Microhoria*.

The submedian carinae of the mesoventrite are variably present in *Microhoria* (*sensu lato*), but may appear to be characteristic for more robust/sclerotized species treated formerly in the subgenera *Microhoria* (*sensu stricto*), *Immichoria*, and *Submicrohoria*. However, even these groups include aberrant species that lack or have rather slight carinae, e.g. *M. paykulli* and *M. volxemi*. Also, *Clavicomus optabilis* is undoubtedly much closer to *Microhoria* (*sensu stricto*), in having an incomplete submarginal sulcus of the mesoventrite (clearly absent laterally) and lacks a distinct submedian carinae. Its questionable position within *Clavicomus* was noted previously by BUCCIARELLI (1980).

Most (if not all) species of the former subgenus *Platyhoria* of *Microhoria* (which is most speciose in the Middle East) and *Tenuicomus* distributed from Turkey eastwards have a prominent submarginal sulcus of the mesoventrite, which is only shortly interrupted posteriorly at the area where the middle legs articulate (cf. Figs 24 *versus* 26). They differ from *Clavicomus longiceps* by the reduced setose fringe of the mesepimera (cf. Figs 24 *versus* 26, 34), and have the unique, tubular outflow channel for the elytral gland of the males (Fig. 44).

*Clavicomus gigas* from the eastern Mediterranean Region is undoubtedly very close to *C. longiceps*, as is suggested by its larger size, similar external appearance, and a number of details, e.g. swirled elytral setation, outflow channel of elytral gland forming cavity (minute, situated near somewhat tapering elytral apices) with pores and cuticular cones, and longer paired sclerites of the endophallus. On the other hand, it has a somewhat reduced setose fringe of the mesepimera (cf. Figs 36 *versus* 34), and differs by having an incomplete submarginal sulcus, as was discussed above for *Microhoria* (cf. Figs 28 *versus* 26).

*Clavicomus heydeni* is a very distinctive species, showing unique sexual dimorphism (modified tarsi in males) together with a peculiar morphology of the tegmen, which is quite dissimilar to that of *C. longiceps*, see Figs 62, 64. It has a nearly complete submarginal sulcus of the mesoventrite, as is similarly seen in numerous Mediterranean *Tenuicomus*, e.g. *T. barnevillei*, *T. viturati*, and *T. olivaceus* (Figs 16, 22).

Finally, all Asian species of *Clavicomus* have a prominent submarginal sulcus of the mesoventrite, which may be shortly interrupted posteriorly at the place of articulation with the middle legs (Fig. 30), in combination with the strongly reduced setose fringe of the mesepimera (Fig. 35). In addition, they differ from *C. longiceps* by possessing a single terminal metatibial spur plus some male characters, e.g. apical position of primary gonopore.

***Tenuicomus.*** *Tenuicomus* is characterized by the comparatively short and simple pronotum, which is not impressed postero-laterally, lacking the so-called ‘fossetes laterales’, and the more conspicuous setation of this latero-basal area (BONADONA 1974). These characters are shared with a small group of externally uniform species distributed in the western part of the Mediterranean Region, including *Tenuicomus ocreatus*, that was listed as the type species by BUCCIARELLI (1980). However, ALONSO-ZARAZAGA (2013) found this designation invalid (the species was not originally included), and selected *Anthicus pumilus* as the type species.

*Anthicus pumilus* was described by BAUDI DI SELVE (1877) from an unstated number of specimens collected at the locality Misserghin in Algeria (Oran Province). It is currently treated as a junior synonym of *Tenuicomus pauperculus* (CHANDLER et al. 2008: 49), and its type material was probably never examined (the collection of Baudi di Selve has been unavailable for some time). We have examined several specimens from northern Algeria (ZKDC, NHMW) identified as *Anthicus pumilus* by Hans

von Kreckich-Strassoldo. They agree with the descriptions of BAUDI DI SELVE (1877) and LAFERTÉ-SÉNÉCÈRE (1847), the species remarks of PIC (1894), and their aedeagal form (Fig. 85) is very similar to the figures of *T. pumilus* by BUCCIARELLI (1980).

*Tenuicomus pauperculus* clearly differs from *T. ocreatus* (Figs 141, 138), including the presence of well-developed ‘fossetes laterales’, and thus does not fit the recent concept of *Tenuicomus* generated by BONADONA (1974) and BUCCIARELLI (1980), as already stated for *T. pumilus* by the latter author. On the other hand, *T. pauperculus* shares all major characters of *Microhoria* s. str., and the morphology and setation of the mesoventrite are essentially identical (cf. Figs 17, 18 *versus* 13, 14). Remarkably, this species is here classified within the *Microhoria schimperi* species-group in Section IV, with members of this species-group having the mesoventrite characters being somewhat variable, with a few possessing a complete submarginal sulcus (Figs 19, 20).

Based on the preceding comments, form of the submarginal sulcus and submedian carinae of mesoventrite proved to be variable characters, and are useless for separation of the discussed genera. Consequently, *Clavicomus* and *Tenuicomus* are regarded as junior synonyms of *Microhoria*.

### ***Neocrohoria* Telnov, 2019**

(Figs 7, 8, 31, 47, 48, 123)

**Type species.** *Anthicus melanurus* Fairmaire & Germain, 1863, by original designation.

**Diagnosis.** (i) mandibles with uneven cutting edge, at most with small denticle distally on right mandible; (ii) anterior margin of procoxal cavity with paired incisions laterally; (iii) intercoxal process of proventrite well-developed; (iv) postcoxal bridge simple; (v) mesoventrite triangular; (vi) mesepisterna shallowly impressed, lacking transverse groove; (vii) mesepisterna separate medially on anterior margin; (viii) pore of mesothoracic gland situated at margin of mesothorax in intersegmental membrane, orifice inconspicuous; (ix) intercoxal process of abdomen rather wide basally, pointed apically; (x) posterior transverse carina of metacoxae fully developed; (xi) meso- and metatibiae with two terminal spurs; (xii) tegmen open, basal-piece well-developed, longer than apical portion.

**Relationships.** *Neocrohoria* is a rather aberrant member of the Microhoriini, being remarkable in the males having simple elytral apices and a ventrally open tegmen. It shares most major characters (i, v–viii, x) with *Aulacoderus* and *Falsophilus*, genera that are distributed exclusively (*Falsophilus*) or are most speciose (*Aulacoderus*) in southern Africa. *Neocrohoria* differs from both genera by the morphology of procoxal cavities (ii–iv); from *Aulacoderus* additionally by the paired terminal spurs of the tibiae (xi) and the open basal-piece of the tegmen (xii); from *Falsophilus* additionally by the shape of the intercoxal process of the abdomen (ix), and the well-developed basal-piece of the tegmen, that is longer than its apical portion. On the other hand, the distinguishing



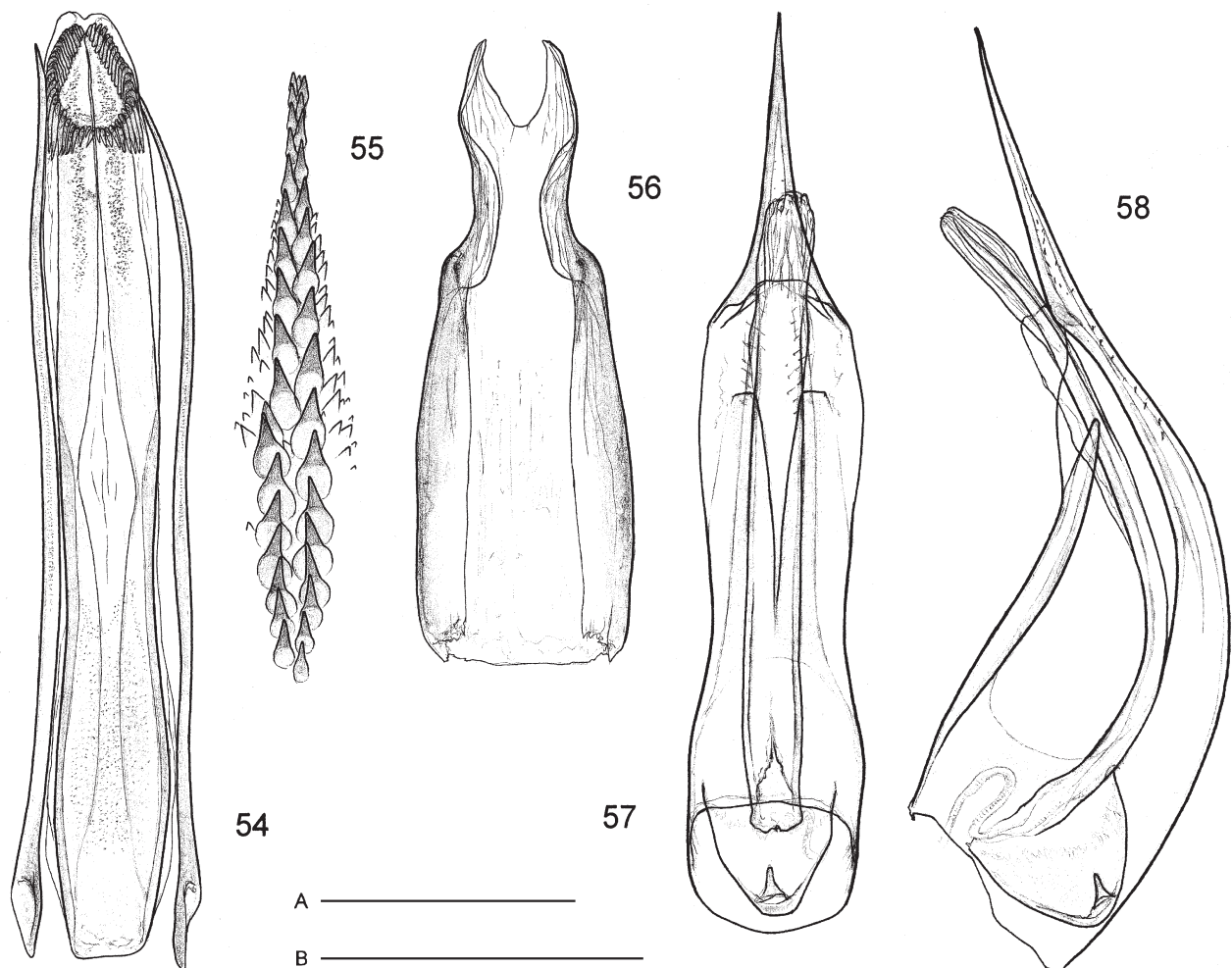
characters of the procoxal cavities (ii–iv) are shared with *Microhoria* and *Liparoderus*, whose ranges are confined to the Northern Hemisphere.

**Distribution.** Neotropical Region: Chile. The genus contains a single species, *Neocrohoria melanura* (Fairmaire & Germain, 1863), originally described from ‘Forêts de Chillán’ in Diguillín Province (east of Concepción). Its published records and specimens examined in this study originate from the following provinces in the Central part of the country: San Felipe de Aconcagua, Cachapoal, Cardenal Caro, Cautín, Concepción, Cordillera, Curicó, Diguillín, Linares, Malleco, Maule, and Santiago (WERNER 1974, TELNOV 2019; ZKDC, ZSMC).

#### IV. Species-groups, new species, and synonymy within *Microhoria*

*Microhoria sensu lato*, as proposed herein, holds 344 known species, and represents a large and diverse genus, as does *Aulacoderus*. Subdivisions of such a large group are useful, and development of informal species-groups seem to be most appropriate, considering variation of the characters and the present state of knowledge. Ten species-groups are established below, and the following key can be used for their identification.

- 1(2) Metatibiae with single terminal spur (rarely absent, see species-group remarks); elytral apices in males rather slightly modified, never with conspicuous cavity or tubular process (Fig. 46); gonopore situated at apex of longitudinal sclerite (Figs 54, 57–60); distribution: Asia (from Afghanistan eastwards). ..... ***M. fugax* species-group**
- 2(1) Metatibiae with two terminal spurs; elytral apices in males mostly quite distinctly modified; gonopore free (except *M. ocreata* species-group); distribution: northeastern Africa and western part of Palaearctic Region (few easternmost records in Nepal, northern India, Pakistan and Tibet).
- 3(4) Mesoventrite with nearly completely developed submarginal sulcus (Fig. 23); setose fringe of mesepimera strongly reduced (Fig. 24); channel of elytral gland in males formed as short tubular process (Fig. 44, absent in single species). ..... ***M. terminata* species-group**
- 4(3) Mesoventrite mostly with strongly reduced submarginal sulcus (absent laterally) and setose fringe of mesepimera well-developed; elytral apices in males quite simple (*M. globipennis*) or showing different modifications of gland channel: pores inside sclerotized cavity, together with short cuticular cones (Figs 41, 42), or simple and scattered at/near margin (Figs 43, 45).
- 5(14) Mesoventrite almost exclusively with largely reduced submarginal sulcus, slightly indicated to absent laterally (Figs 14, 18), its surface unevenly convex medially, frequently with distinct submedian carinae (at least indicated anteriorly); elytral apices in males almost exclusively distinctly modified, subtruncate to bilobed (Fig. 43), with subapical sclerotized cavity (Figs 41, 42) or sinuous groove (Fig. 148).
- 6(9) Tegmen hood-like (‘cuculliform’), with comparatively well-sclerotized, pointed apex (Figs 76, 77).
- 7(8) Elytral apices in males somewhat unevenly rounded, channel of gland forming sclerotized cavity, cavity inside with pores and cuticular cones (Fig. 41); metatibiae of males simple. .... ***M. fasciata* species-group**
- 8(7) Elytral apices in males conspicuously modified, subtruncate to bilobed, lacking sclerotized small cavity (pores scattered on surface as in Fig. 43); metatibiae of males frequently variously modified (Fig. 139). .... ***M. oedipus* species-group**
- 9(6) Tegmen somewhat less sclerotized and pigmented, with rounded or bilobed apex (‘capsuliform’), never sharply pointed apically.
- 10(11) Pronotum mostly with rather uniformly short setae (Fig. 138); endophallus with elongate sclerite, bearing gonopore apically, with extremely long, slender, flexible spine, originating from its base and directed apically (Fig. 75). .... ***M. ocreata* species-group**
- 11(10) Pronotum with mostly longer, dense setae laterally near base (Fig. 144); endophallus at most with short spinules or tooth-like sclerites, gonopore free, situated rather basally and frequently indistinct.
- 12(13) Elytra in males with peculiar sinuous groove at apical third (Fig. 148), lacking subapical cavity, rounded apically. .... ***M. plicatipennis* species-group**
- 13(12) Elytra in males with subapical sclerotized cavity and pointed protrusion of apical margin (Fig. 42). .... ***M. schimperi* species-group**
- 14(5) Mesoventrite always with complete submarginal sulcus (or nearly so), which is sometimes rather thin but developed laterally (Figs 16, 22, 26), its surface more or less evenly convex (never with distinct submedian carinae); elytral apices in males modified (distinct subapical cavity) or nearly simple.
- 15(16) Submarginal setose impressions of metaventrite and abdominal sternum III weakly indicated to conspicuous; elytral apices in males with sclerotized cavity (channel inside with pores and cuticular cones), rarely reduced to absent; tegmen pointed to narrowly rounded apically (Figs 64, 65, 68–72), narrowly bifurcate in single species (Fig. 67). .... ***M. longiceps* species-group**
- 16(15) Submarginal setose impressions of metaventrite and abdominal sternum III always reduced to indistinct; elytral apices of males somewhat unevenly rounded, but lacking any special sclerotized structures, with pores scattered at margin (Fig. 46); tegmen rounded to shortly bilobed apically.
- 17(18) Tegmen with conspicuous subapical projection(s) (Figs 62, 63). .... ***M. heydeni* species-group**
- 18(17) Tegmen simply tubular, at most with slight apical lobes (Figs 78–81). .... ***M. olivacea* species-group**



Figs 54–58. 54–56 – *Microhoria caeruleicolor* (Pic, 1906), inner structures of endophallus: 54 – sclerite with primary gonopore and paired spinules; 55 – spines of connecting membrane; 56 – membranous sheath. 57, 58 – *M. fugiens* (Marseul, 1876) comb. nov.: 57 – aedeagus in ventral view; 58 – same, lateral view. Scale bars: 0.2 mm – A (Figs 57, 58), B (Figs 54–56).

### *Microhoria fasciata* species-group

**Diagnosis.** Mostly larger, robust species, frequently with colour markings and/or modified setation of elytra (patches of swirled setae or silvery setose bands, Figs 131, 132); moderately variable in pronotal characters, latero-basal impressions mostly distinct and longer, densely setose (Figs 160, 161). Mesoventrite always with partly bordered lateral margins (simple laterally), mostly with longitudinal submedian carinae, as in Fig. 13; setose fringe of mesepimera always well-developed; submarginal setose impressions of metaventrite and abdominal sternum III conspicuous; all tibiae with paired terminal spurs; elytral apices in males modified, channel of gland forming sclerotized cavity, cavity inside with pores and cuticular cones (Fig. 41, apical elytral margin rounded, no pointed protrusion). Aedeagus similar to Figs 76, 77; tegmen hood-like, with simple pointed apex ('cuculliform'); gonopore free.

**Distribution.** Predominantly Western Mediterranean group, most speciose in Algeria, Morocco, Spain, and Tunisia. Few species are known from SE Europe, Caucasian region and Central Asia: *M. lederi* (Marseul, 1879), *M. pallidula* (Pic, 1892), *M. piciceps* (Desbrochers des Loges, 1875), and *M. rectipennis* (LaFerté-Sénéctère, 1849).

**Species included** (107 spp.). *Microhoria abdeselami* (Escalera, 1914), *M. abeillei* (Pic, 1892), *M. advecta* (Krekich-Strassoldo, 1929), *M. adventicia* (Krekich-Strassoldo, 1929), *M. agtayi* Bonadonna, 1986, *M. albopilosa* (Krekich-Strassoldo, 1929), *M. amata* (Bonadonna, 1958), *M. amicitiae* (Dufour, 1849), *M. andalusiaca* (LaFerté-Sénéctère, 1849), *M. annulipes* (Pic, 1894), *M. antoinei* (Chobaut, 1923), *M. aspernata* (Chobaut, 1923), *M. atlasica* (Pic, 1951), *M. aubei* (LaFerté-Sénéctère, 1849), *M. balearica* (Pic, 1904), *M. barrosi* (Pic, 1938), *M. baudii* (Pic, 1893), *M. baudueri* (Baudi di Selve, 1877), *M. benigna* (Krekich-Strassoldo, 1929), *M. biargenteofasciata* (Pic, 1929), *M. bicoloripes* (Pic, 1932), *M. binotaticollis* (Pic, 1919), *M. bispilifasciata* (Marseul, 1978), *M. bleusei* (Pic, 1892), *M. bremondi* (Pic, 1936), *M. brevipilis* (Pic, 1893) comb. nov., *M. brisouti* (Desbrochers des Loges, 1875), *M. cantabrica* (Marseul, 1879), *M. capito* (LaFerté-Sénéctère, 1849), *M. caprai* Bucciarelli, 1977, *M. chardoni* (Pic, 1893), *M. chobauti* (Pic, 1892), *M. cinctuta* (Marseul, 1878), *M. codinai* (Pic, 1919), *M. constricticollis* (Desbrochers des Loges, 1870), *M. curticollis* (Pic, 1894), *M. decora* (Krekich-Strassoldo, 1929), *M. dejeanii* (LaFerté-Sénéctère, 1849), *M. dentipalpis* Bonadonna, 1977,



*M. digitalis* Marseul, 1878, *M. espunana* (Pic, 1930), *M. fairmairei* (C. Brisout de Barneville, 1863), *M. fasciata* (Chevrolat, 1834), *M. ferianensis* (Pic, 1900), *M. franzi* Bonadona, 1958, *M. fuscipes* Marseul, 1879, *M. ghilianii* (LaFerté-Sénéctère, 1849), *M. gouversi* Bonadona, 1986, *M. hafidi* (Pic, 1923), *M. hameti* (Escalera, 1914), *M. helenae* (Koch, 1923), *M. hipponensis* (Pic, 1893), *M. hispanica* (Pic, 1899), *M. imbasicornis* (Pic, 1931), *M. insignita* (Pic, 1906) comb. nov., *M. lanata* (Krekich-Strassoldo, 1929), *M. latecincta* Chobaut, 1923), *M. lavocati* (Pic, 1951), *M. lederi*, *M. leonhardi* (Krekich-Strassoldo, 1913), *M. lindbergi* (Pic, 1923), *M. ludovici* (Pic, 1893), *M. mactae* (Pic, 1894), *M. maculicollis* (Pic, 1893), *M. madoni* (Pic, 1931), *M. magnifica* (Pic, 1936), *M. major* (Pic, 1896), *M. mateui* Bonadona, 1954, *M. melanocephala* (Bonelli, 1812), *M. mogadorica* (Escalera, 1914), *M. moroderi* (Pic, 1930), *M. mylabrina* (Gené, 1839), *M. oberthuri* (Baudi di Selve, 1877), *M. opipara* Bonadona, 1977, *M. optabilis* (LaFerté-Sénéctère, 1849) comb. nov., *M. pallidioritarsis* (Pic, 1936), *M. pallidula*, *M. pardoii* Bonadona, 1952, *M. paykullii* (Gyllenhal, 1808), *M. piceodiscoidalis* (Pic, 1936), *M. piciceps*, *M. planiceps* (Desbrochers des Loges, 1875), *M. plumbea* (LaFerté-Sénéctère, 1842), *M. postluteomaculata* (Pic, 1938), *M. rectipennis*, *M. robustioriceps* (Pic, 1938), *M. roseicollis* (Pic, 1892), *M. rubrofasciata* (Pic, 1894), *M. saidi* (Escalera, 1914), *M. scrobicollis* (LaFerté-Sénéctère, 1849), *M. selvei* (Pic, 1895), *M. separanda* (Krekich-Strassoldo, 1929), *M. simplicipes* (Pic, 1936), *M. subgracilis* (Krekich-Strassoldo, 1929), *M. superba* (Pic, 1896), *M. taeniata* (Baudi di Selve, 1877), *M. testaceofasciata* (Pic, 1894), *M. torretassoi* (Pic, 1931), *M. valida* (Pic, 1896), *M. velutina* (LaFerté-Sénéctère, 1849), *M. venusta* (A. Villa & J. B. Villa, 1833), *M. veris* (Pic, 1893), *M. villiersi* (Bonadona, 1984), *M. violaris* (Marseul, 1875), *M. volxemi* (Marseul, 1878), *M. vosseleri* (Pic, 1894), and *M. zonata* (LaFerté-Sénéctère, 1849).

**Remarks.** This species-group holds all species of *Microhoria* formerly treated in the subgenera *Immichoria* and *Submicrohoria*.

#### *Microhoria insignita* (Pic, 1906) comb. nov.

*Anthicus insignitus* Pic, 1906: 285.

*Anthicus insignitus*: Pic (1911b): 55 (catalogue); WINKLER (1927): 845 (catalogue).

*Tenuicollis insignitus*: CHANDLER et al. (2008): 448 (catalogue, distribution).

**Type locality.** Tunisia, Oued Defaa, Fom Tatahouine.

**Type material.** SYNTYPES: see Remarks (at least partly MNHN).

**Distribution.** Tunisia.

**Remarks.** Pic (1906) described *Anthicus insignitus* from an unstated number of specimens collected by L. Vibert in southern Tunisia, which were deposited in his and the Vibert Collection. Its present placement in *Microhoria* is provisional, dependant on the generic synonymy proposed here. This species may belong in *Liparoderus*, as stated below, however this possibility must be confirmed by examination of the type specimens. Searching in Pic's collection, Z. Kejval found a single pin with the locality, identification, and type labels for this species (the specimen

was lacking), together with a specimen of *Liparoderus* bearing the following data: 'Tunisie [h] // insignitus Pic [h] // Krekich vid [p].' This specimen is not quite excluded from being a member of the type series, however it lacks the type locality data and type labels. There are additional facts suggesting placement of *A. insignitus* in *Liparoderus* – Pic (1906) compared this new species with *Anthicus barnevillei* and *Anthicus insignis* var. *insignior* (the latter is presently a member of *Liparoderus*, see CHANDLER et al. 2008), and some characters given in the original description agree with *Liparoderus*, mainly the larger size (3.5–4 mm), large, posteriorly subtruncate head, robust pronotum, and two silvery, sinuous setose bands on the elytra.

#### *Microhoria fugax* species-group

**Diagnosis.** Small to medium-sized species, with uniform setation of elytra; rather variable in shape of head and pronotum, the latter mostly distinctly constricted in dorsal view and with uniformly short setae (Figs 128–130). Mesoventrete with nearly completely bordered margins (sulcus always rather distinct), and frequently with short submedian carinae, at least indicated posteriorly (Figs 29, 30); setose fringe of mesepimera strongly reduced (Figs 30, 35); submarginal setose impressions of metaventrete and abdominal sternum III indistinct; metatibiae almost exclusively with single terminal spur (see Remarks); elytral apices in males nearly simple, secretory pores situated directly on/near margin (Fig. 45), which is usually somewhat swollen, uneven, bearing small projection. Aedeagus (Figs 54–61): tegmen with distinct, narrowed apex, mostly weakly sclerotized; endophallus always with longitudinal sclerite (gonopore situated apically, Figs 54, 60), in addition to various spinules, sometimes also with spines arranged in longitudinal row on connecting membrane (Fig. 55) and membranous inner sheath (Fig. 56).

**Distribution.** Eastern Palaearctic and Oriental Region, most speciose in the Himalaya and mountains of SW China (Yunnan). The westernmost records originate from eastern Afghanistan.

**Species included** (61 spp.). *Microhoria abscondita* (Telnov, 2000) comb. nov., *M. adusta* (Krekich-Strassoldo, 1931) comb. nov., *M. afghana* (Telnov, 2010) comb. nov., *M. almoraie* (Krekich-Strassoldo, 1931) comb. nov., *M. ambusta* (Krekich-Strassoldo, 1931) comb. nov., *M. anomala* (Telnov, 1998) comb. nov., *M. aquatilis* (Krekich-Strassoldo, 1931) comb. nov., *M. assamensis* (Pic, 1907) comb. nov., *M. assequens* (Krekich-Strassoldo, 1931) comb. nov., *M. atrata* (Krekich-Strassoldo, 1931) comb. nov., *M. biguttata* (Bonadona, 1964) comb. nov., *M. brunneipes* (Krekich-Strassoldo, 1931) comb. nov., *M. caeruleicolor* (Pic, 1906) comb. nov., *M. comes* (Krekich-Strassoldo, 1931) comb. nov., *M. cordata* (Krekich-Strassoldo, 1931) comb. nov., *M. curticeps* (Pic, 1923) comb. nov., *M. disconotata* (Pic, 1907) comb. nov., *M. feai* (Pic, 1907) comb. nov., *M. fossicollis* (LaFerté-Sénéctère, 1849) comb. nov., *M. fugax* (LaFerté-Sénéctère, 1849) comb. nov., *M. fugiens* (Marseul, 1876) comb. nov., *M. garze* (Telnov, 2018) comb. nov., *M. gravaida* (Krekich-Strassoldo, 1931)

comb. nov., *M. harmandi* (Pic, 1899) comb. nov., *M. hauseri* (Pic, 1906) comb. nov., *M. himalayana* (Pic, 1909) comb. nov., *M. hummeli* (Pic, 1933) comb. nov., *M. immaculipennis* (Krekich-Strassoldo, 1931) comb. nov., *M. inabsoluta* (Telnov, 2003) comb. nov., *M. indepressa* (Telnov, 2000) comb. nov., *M. kejvali* (Telnov, 1999) comb. nov., *M. kham* (Telnov, 2018) comb. nov., *M. kuluensis* (Pic, 1914) comb. nov., *M. lepidula* (Marseul, 1876) comb. nov., *M. longicornis* (Uhmman, 1983) comb. nov., *M. manifesta* (Pic, 1907) comb. nov., *M. muguensis* (Telnov, 2000) comb. nov., *M. nigrocyanea* (Marseul, 1877) comb. nov., *M. nigrofusca* (Telnov, 2000) comb. nov., *M. notatipennis* (Pic, 1909) comb. nov., *M. nystii* (LaFerté-Sénéctère, 1849) comb. nov., *M. phungi* (Pic, 1926) comb. nov., *M. picea* (Laferté-Sénéctère, 1849) comb. nov., *M. posthuma* (Krekich-Strassoldo, 1931) comb. nov., *M. prolatithorax* (Pic, 1899) comb. nov., *M. separatithorax* (Pic, 1914) comb. nov., *M. shibatai* (Nomura, 1962) comb. nov., *M. sikkimensis* (Pic, 1907) comb. nov., *M. sinensis* (Pic, 1907) comb. nov., *M. sporadica* (Krekich-Strassoldo, 1931) comb. nov., *M. strandi* (Krekich-Strassoldo, 1931) comb. nov., *M. striaticollis* (Krekich-Strassoldo, 1931) comb. nov., *M. subpicea* (Pic, 1914) comb. nov., *M. tersa* (Krekich-Strassoldo, 1931) comb. nov., *M. tonkinensis* (Krekich-Strassoldo, 1928) comb. nov., *M. truncatella* (LaFerté-Sénéctère, 1849) comb. nov., *M. turgida* (Krekich-Strassoldo, 1928) comb. nov., *M. uniformis* (Krekich-Strassoldo, 1931) comb. nov., *M. variabilis* (Krekich-Strassoldo, 1931) comb. nov., *M. weigeli* (Telnov, 2000) comb. nov., and *M. wuyishanensis* (Nardi, 2004) comb. nov.

**Remarks.** This group holds nearly all Eastern Palaearctic (from Afghanistan eastwards) and Oriental species placed previously in *Clavicomus* (CHANDLER et al. 2008, as *Clavicollis*) with the exception of *C. protervus* (Krekich-Strassoldo, 1931) from northern India (Uttarakhand).

The terminal spurs of the metatibiae were found to be further reduced in males of species that exhibit modifications of the terminal portion of the tibiae; they are both absent in *M. anomala* and *M. kejvali* (based on tentatively identified specimens, ZKDC), and in two unnamed species from China and Laos (ZKDC).

### *Microhoria posthuma* (Krekich-Strassoldo, 1931)

#### comb. nov.

(Figs 59–61, 130)

*Anthicus posthumus* Krekich-Strassoldo, 1931: 32.

*Clavicomus posthumus*: TELNOV (2003): 296 (checklist, distribution, record Nepal).

*Clavicollis posthumus*: CHANDLER et al. (2008): 431 (catalogue, distribution).

*Anthicus fumeoalatus* Krekich-Strassoldo, 1931: 39, **syn. nov.**

*Microhoria fumeolata* [misspelling]: UHMANN (1989): 250 (record Nepal).

*Microhoria fumeoalata*: TELNOV (2003): 297 (checklist, distribution, record Nepal); CHANDLER et al. (2008): 440 (catalogue, distribution).

**Type locality.** *Anthicus posthumus* – India, Uttarakhand, West Almora; *A. fumeoalatus* – India, Uttarakhand, Nainital.

**Type material.** *Anthicus posthumus* – LECTOTYPE (herewith designated): ♂, ‘W. Almora Kumaon India H. G. Champion [p] // 98B [h] // TYPE [p; red label] // *A. posthumus* Kr. det. v. Krekich [p+h] // *posthumus* Kr. [h; ochraceous label] // coll. Heberdey [p]’ (NHMW). PARALECTOTYPES:

3 ♂♂ 1 ♀, ‘W. Almora Kumaon India H. G. Champion [p] // [male or female sex-symbol [p] // CO-TYPE [p; red label] // *A. posthumus* Kr. det. v. Krekich [p+h] // coll. Heberdey [p]’; 2 ♂♂ 1 ♀, ‘W. Almora Kumaon India H. G. Champion [p] // COTYPE [p; red label] // *A. posthumus* Kr. det. v. Krekich [p+h] // coll. Heberdey [p]’ (all NHMW).

*Anthicus fumeoalatus* – HOLOTYPE: ♂, ‘Nainital, UP, 7-8600 ft. July 1923 HGC [p] // 747B [h] TYPE [p; red label] // *A. fumeolatus* Kr. det. v. Krekich [p+h] // *fumeolatus* Kr. [h; ochraceous label] // *Microhoria fumeolata* (Krek.) vid. D. Telnov, 1998 [p]’ (NHMW).

**Additional material.** INDIA: HIMACHAL PRADESH: 12 spec., Shimla District, Kufri, 2500 m, 15.–17.vii.1989, Hiermeier lgt. (ZKDC); 3 spec., same data, except: 16.vii.1989, A. Riedel lgt. (ZKDC). UTTARAKHAND: 3 ♂♂, ‘W. Almora, Kumaon, India. H. G. C.’ (ZKDC); 1 ♂, 30 km N of Rishikesh, NW of Chamba, 1500 m, 29.–31.vii.2003, Z. Kejval & M. Trýzna lgt. (ZKDC); 1 ♂, 20 km NE of Rishikesh, Kaudiyala env., Ganga River valley, ca. 500 m, 25.–17.vii.2003, Z. Kejval & M. Trýzna lgt. (ZKDC); 2 spec., Dhanolti env., 2200–2400 m, 11.–13.vii.1989, Hiermeier lgt. (ZKDC); 5 spec., same data, except: 11.vii.1989, A. Riedel lgt. (ZKDC); 1 ♂, Joshimath, Auli, 2800 m, 13.–17.vii.1994, M. Snížek lgt. (ZKDC); 2 spec., ca. 13 km NW of Nainital, Khairna Bridge env., 900–1000 m, 13.–17.vii.2003, Z. Kejval & M. Trýzna lgt. (ZKDC); 16 spec., ca. 55 km NE of Bageshwar, W of Loharket, 1800–1900 m, 24.vi.2003, Z. Kejval & M. Trýzna lgt. (ZKDC); 5 spec., ca. 55 km NE of Bageshwar, Munsyari, 2200–2400 m, 6.–9.vii.2003, Z. Kejval & M. Trýzna lgt. (ZKDC); 15 spec., Nainital, 1900 m, 18.–19.vii.2003, Z. Kejval & M. Trýzna lgt. (ZKDC).

**Diagnosis.** *Microhoria fugax* species-group; smaller, somewhat robust species, with widely rounded head base (Fig. 130). Elytral apices in males simple, margin evenly curved (pores possibly very slight, if present at all). Male sternum VII simple; sternum VIII forming pair of delicate, simple sclerites, narrowly connected medially; tergum VII simple; tergum VIII with slightly produced (flanged) posterior margin. Female sternum VII simple; tergum VII simple. Aedeagus (Figs 59–61): tegmen with small apical notch; endophallic armature with numerous coarse spinules and flattened, longitudinal sclerite, bearing gonopore apically.

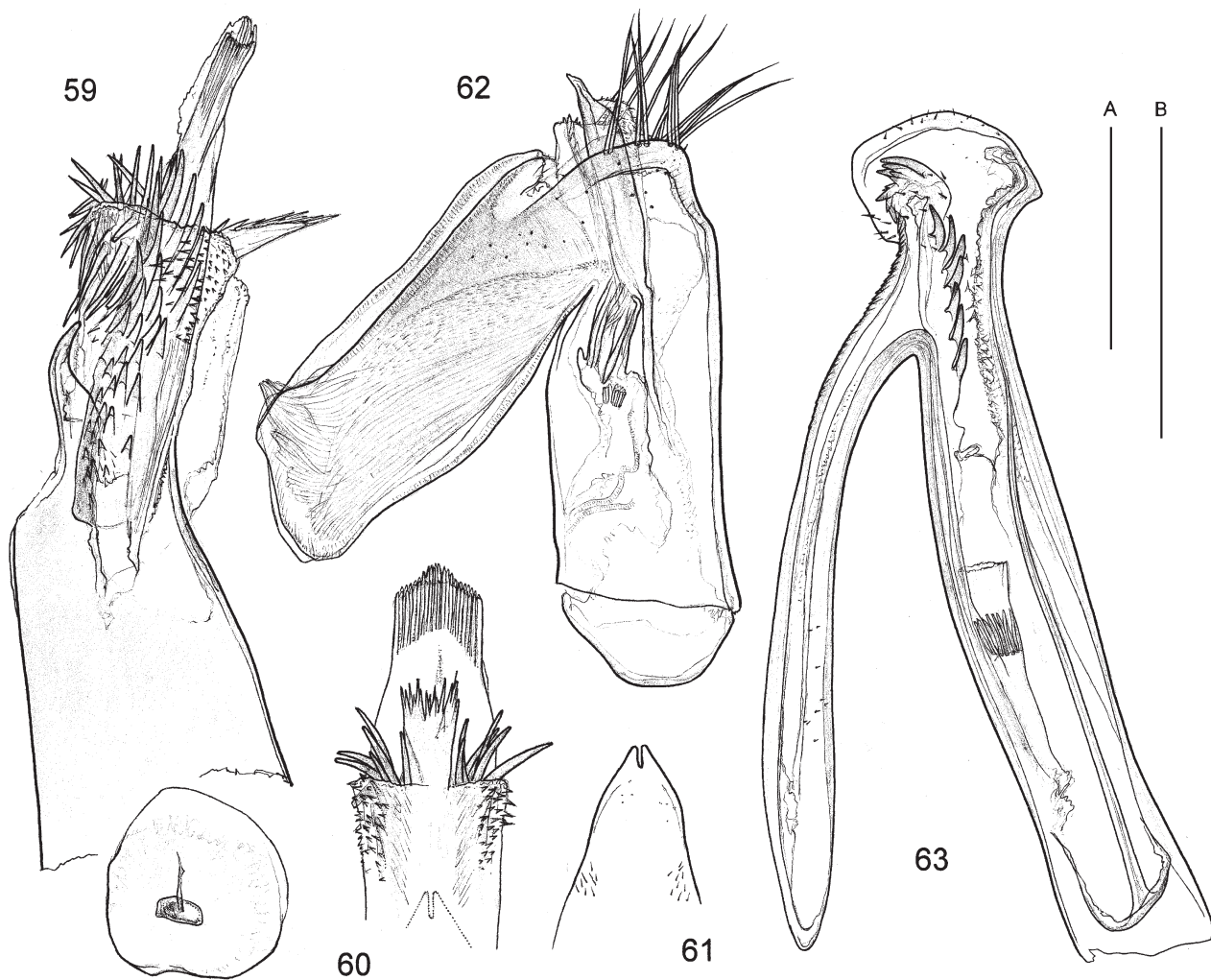
**Variation.** Body length (♂♀) 2.1–2.6 mm. Body reddish-brown to brownish-black; elytra unicolorous, sometimes with vague indication of paler markings in dark-coloured specimens.

**Distribution.** India (Uttarakhand, Himachal Pradesh), Nepal.

**Remarks.** KREKICH-STRASSOLDO (1931) described both *Anthicus posthumus* and *A. fumeoalatus* from material collected by H. G. Champion in SE Uttarakhand; the former from a series of specimens (number unstated, deposited partly at BMNH); the latter from a single specimen, judging from singular in his statement ‘Type in meiner Sammlung’ (presently NHMW). In the same paper, he placed them in different groups (X and XIII, later genera *Clavicomus* and *Tenuicomus*) established by MARSEUL (1879). Having examined types of both species, we failed to find any differences in the male characters, as assumed from very similar original figures of the aedeagi by KREKICH-STRASSOLDO (1931). Consequently, *Anthicus fumeoalatus* is regarded as a junior synonym of the former species.

The lectotype is designated herein for a male syntype of *Anthicus posthumus* that was dissected and most probably used for the original description and figures by Krekich-Strassoldo; its aedeagus is present on microscope slide no. 98B (examined, NHMW).





Figs 59–63: 59–61 – *Microhoria posthuma* (Krekich-Strassoldo, 1931) comb. nov., India, Nainital (ZKDC): 59 – aedeagus in lateral view; 60 – apex of everted endophallus; 61 – apex of tegmen. 62, 63 – Aedeagus in lateral view: 62 – *M. heydeni* (Marseul, 1879); 63 – *M. barnevillei* (Pic, 1892). Scale bars: 0.2 mm – A (Figs 59–62), B (Fig. 63).

#### *Microhoria heydeni* species-group

**Diagnosis.** Mostly smaller species, with unicolorous elytra, and elytral setae at most weakly swirled in postbasal area (no conspicuous setose bands); pronotum moderately constricted in dorsal view, with uniformly short setae (Fig. 133). Mesoventrite with nearly completely bordered lateral margins, submarginal sulcus delicate (Figs 15, 16), sometimes inconspicuous laterally; setose fringe of mesepimera well-developed; submarginal setose impressions of metaventre and abdominal sternum III absent; all tibiae with paired terminal spurs; elytral apices in males nearly simple, secretory pores scattered along somewhat swollen margin (Fig. 46). Aedeagus (Figs 62, 63): tegmen with rounded apex ('capsuliform'), and with robust subapical projection(s); gonopore free.

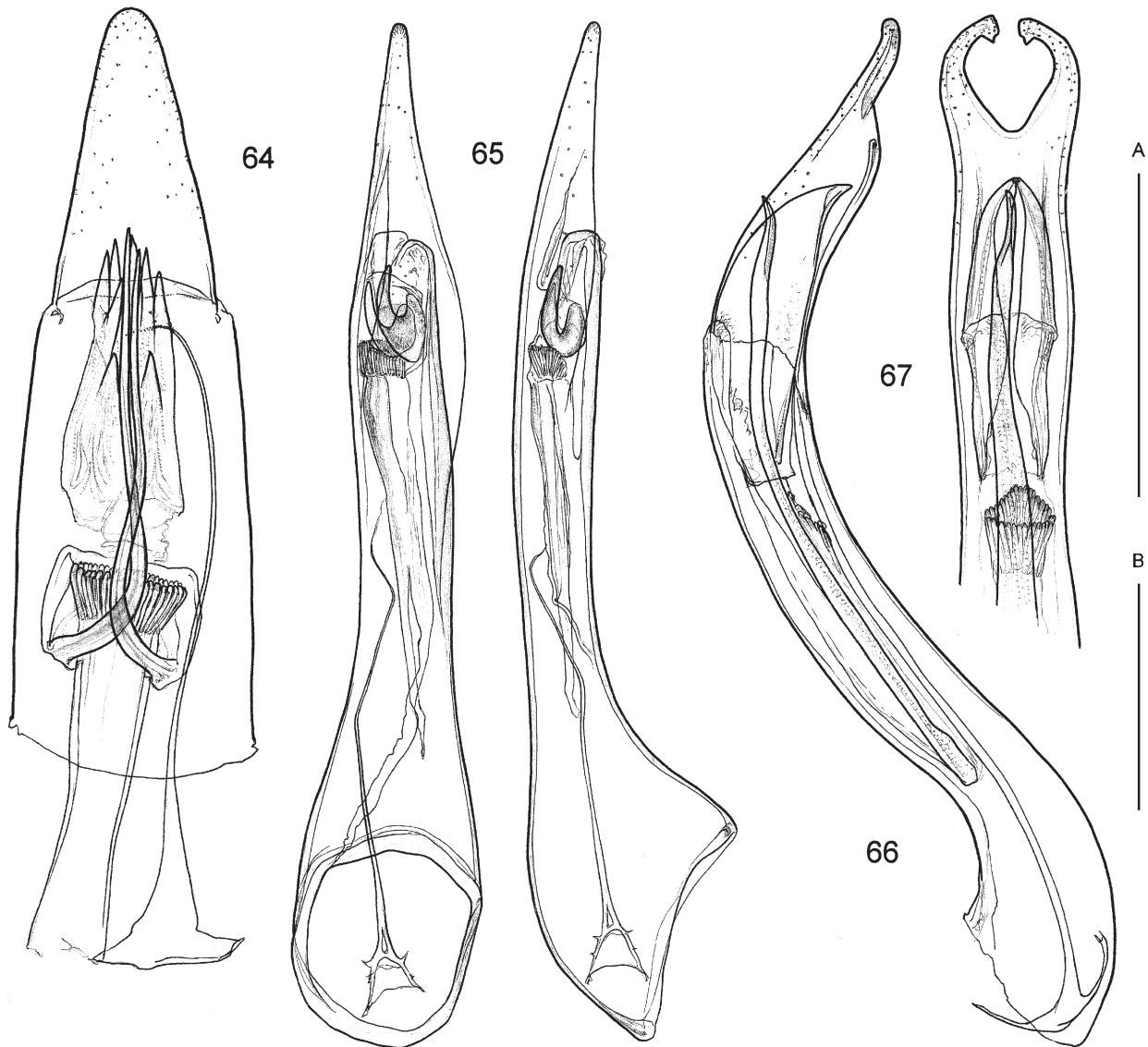
**Distribution.** Western Mediterranean Region (Portugal, Spain) and Canary Islands.

**Species included** (5 spp.). *Microhoria barnevillei* (Pic, 1892) comb. nov., *M. heydeni* (Marseul, 1879) comb. nov., *M. martinezi* (Pic, 1932) comb. nov., *M. schrammi* (Pic, 1913) comb. nov., and *M. uhagoni* (Pic, 1904) comb. nov.

**Remarks.** This species-group holds species previously placed in *Clavicomus* and *Tenuicomus* (CHANDLER et al. 2008, as *Clavicollis* and *Tenuicollis*). They can be easily confused with members of the *M. olivacea* species-group, differing mainly by the peculiar shape of the tegmen, which has robust subapical projection(s). Two species, *M. martinezi* and *M. uhagoni*, are known to the authors only from their female types, and their tentative placement here is based on external similarity.

#### *Microhoria longiceps* species-group

**Diagnosis.** Mostly elongate species, with oval head, constricted pronotum and somewhat modified setation of elytra (at most swirled, no distinct setose bands, Figs 134–137); latero-basal pronotal setation variable, forming small patches of dense setae around fovea, fringe longer and sparser, or quite inconspicuous (e.g. *M. dichrous* and *M. proterva*). Mesoventrite with rather sharply bordered margins, lacking paired submedian carinae (Figs 25–28); setose fringe of mesepimera more or less well-developed (Figs 34, 36); submarginal setose impressions of metaventre and abdominal sternum III weakly indicated to



Figs 64–67. Aedeagus: 64 – *Microhoria longiceps* (LaFerté-Sénéctère, 1849) comb. nov., ventral view; 65 – *M. callima* (Baudi di Selve, 1877) comb. nov., ventral (left) and lateral (right) view; 66 – *M. globipennis* (Pic, 1897), Turkey, Cevlik (ZKDC), lateral view; 67 – same, apical portion in ventral view. Scale bars: 0.2 mm – A (Fig. 65), B (Figs 64, 66, 67).

conspicuous; all tibiae with paired terminal spurs; elytral apices in males usually modified (except *M. globipennis*), channel forming small sclerotized cavity, varying in prominence (very slight and situated near produced apex of elytra in some species, e.g. *M. antalya* sp. nov., *M. gigas*, and *M. truncata*). Aedeagus (Figs 64–73): tegmen mostly lengthily tubular and straight, apically simply narrowed and pointed (exceptionally bifurcate as in *M. globipennis*); gonopore free.

**Distribution.** Western Palaearctic (Mediterranean Region), and 1–2 isolated species in northern India and Pakistan (see Remarks).

**Species included** (21 spp.). *Microhoria angulifer* (Pic, 1893) comb. nov., *M. antalya* sp. nov., *M. austriaca* (Pic, 1901) comb. nov., *M. bicarinifrons* (Pic, 1892) comb. nov., *M. callima* (Baudi di Selve, 1877) comb. nov., *M. decolorata* (Pic, 1897) stat. restit., comb. nov., *M. dichrous* (LaFerté-Sénéctère, 1849) comb. nov., *M. doderoi* (Pic, 1902) comb. nov., *M. erythrodera* (Marseul, 1878) comb.

nov., *M. gigas* (Pic, 1899) comb. nov., *M. globipennis* (Pic, 1897), *M. kabyliana* (Pic, 1896) comb. nov., *M. longiceps* (LaFerté-Sénéctère, 1849) comb. nov., *M. olivierii* (Desbrochers des Loges, 1868) comb. nov., *M. paganettii* (Pic, 1909) comb. nov., *M. plagiostola* (Bonadona, 1958) comb. nov., *M. proterva* (Krekich-Strassoldo, 1931) comb. nov., *M. ragusae* (Pic, 1898) comb. nov., *M. tibialis* (Waltl, 1835) comb. nov., *M. truncata* (Pic, 1895) comb. nov., and *M. versicolor* (Kiesenwetter, 1866) comb. nov.

**Remarks.** This group holds mostly Mediterranean species treated previously as *Clavicomus* (CHANDLER et al. 2008, as *Clavicollis*).

*Microhoria globipennis* is rather aberrant in having a bifurcate apex of the tegmen and simple elytral apices in males, however it shares characters of mesothorax and externally resembles some eastern Mediterranean species of this group, see Figs 136, 137.

*Microhoria proterva* (Fig. 135) is another remarkable species, also with respect to its very isolated distribution.



It was described from an unstated number of specimens originating from the Indian state of Uttarakhand and never newly recorded. There are only two male syntypes, one each deposited in BMNH and NHMW, and Z. Kejval has also examined two recently collected males from northern Pakistan (ADBC, ZKDC), which may possibly belong to another unknown, but very close species. They resemble some members of the *M. fugax* species-group (very speciose in the Himalaya) in their external appearance and some detailed characters, e.g. short setose fringe on mesepimera, absent submarginal setose impressions of metaventrite and abdominal sternum III, and comparatively short tegmen. However, important characters suggesting placement within the *M. longiceps* species-group are as follows: paired terminal spurs of metatibiae (quite distinct), channel of elytral gland forming minute cavity at elytral margin, and the free primary gonopore of the aedeagus, which is situated at the middle part of the aedeagus.

***Microhoria antalya* Kejval, sp. nov.**

(Figs 68, 70, 136)

**Type locality.** Turkey, Antalya Province, Manavgat env., alt. 150 m.

**Type material.** HOLOTYPE: ♂, 'TR – Antalya; 150 m Umg. Manavgat; Ges 30.XII.1990 ASSING [p] // Clavicomus angulifer (Pic) det. G. Uhmann 1992 [p+h]' (ZSMC).

**Additional specimen.** TURKEY: 1 ♀, Antalya prov., 22 km W of Alanya, Avsallar, 9.–23.v.1995, A. Pütz lgt. (ZSMC).

**Description.** *Male* (holotype). Body length 3.2 mm. Body reddish-brown, head slightly darker, elytra with very vague paler markings (Fig. 136); legs and antennae reddish.

Head nearly 1.2 times as long as wide, widely rounded posteriorly; eyes small, moderately convex. Surface moderately glossy, distinctly punctate; punctures distinctly spaced; setation short, subdecumbent to decumbent, with several short erect setae. Antennae only moderately enlarged in apical half; antennomeres X 1.3 times, XI 2.1 times as long as wide.

Pronotum 1.1 times as long as wide, moderately narrower than head including eyes, somewhat widely rounded anteriorly, pronotal disc evenly moderately convex, outline in dorsal view with lateral margins moderately impressed posteriorly. Surface moderately glossy, distinctly punctate; punctation distinctly coarser, setation as on head, with some short erect setae.

Elytra 1.7 times as long as wide; humeri inconspicuous; apices modified, distinctly produced medially, channel of gland very slight, situated near apex. Surface moderately glossy, distinctly punctate; punctation coarser, setation somewhat longer than on head, with scattered short erect setae.

Legs slender, simple; all tibiae with paired terminal spurs.

Abdominal sternum VII moderately produced and evenly rounded apically; sternum VIII forming simple, subtriangular paired sclerites, narrowly connected medially, rounded and setose posteriorly. Aedeagus (Figs 68, 70): tegmen comparatively short and wide, straight, its apical portion somewhat flattened, straightly projecting, reinforced medially and bluntly pointed; endophallic armature

with paired row of densely spaced robust spines and pair of long, slender, bluntly pointed sclerites.

**Female.** Identical with male for most external characters; elytral apices simple, slightly produced and narrowly rounded; sternum VII simple; tergum VII simple, subtriangular, evenly rounded apically.

**Variation.** Body length (♂♀) 3.2–3.5 mm; body reddish to reddish-brown.

**Differential diagnosis.** *Microhoria antalya* sp. nov. belongs to the *Microhoria longiceps* species-group, having in general a similar armature of the endophallus as do most of the eastern Mediterranean members of this group. Considering their variation it may be difficult to recognize this species by its external characters; nevertheless, the following character set seems to be useful, at least for rough initial sorting: body reddish-brown, head base widely rounded, body punctation rather dense and distinct (especially on pronotum), setation of elytra moderately raised and uniform (setae rather evenly pointing posteriad), antennae comparatively long and slender. Major distinguishing characters of *M. antalya* sp. nov. are as follows: elytra evenly rounded postero-laterally and with prominent apical median protrusion (rather moderately angled in *M. decolorata*); tegmen comparatively short and wide, straight in lateral view, its apical part moderately produced and somewhat flattened, straightly projecting (Fig. 70), asetose and reinforced medially on ventral side (more convex and quite simple, moderately bent apically in lateral view in *M. decolorata* (Figs 69, 71); strongly convex, widened and then abruptly narrowed, with transverse carina subapically on ventral side in *M. gigas*; extremely produced, flattened and apically rounded in *M. angulifer*; for clearly different condition in *M. truncata* see Figs 72, 73).

**Etymology.** Named after the Turkish province Antalya where this species was discovered; noun in the nominative case, standing in apposition.

**Distribution.** So far known only from Antalya Province, southern Turkey.

**Remarks.** There is no serious doubt about the identity of the female examined. It is also from Antalya (about 30 km SE of Manavgat); however, it is preferable to leave the single female as a non-type specimen in this case.

***Microhoria decolorata* (Pic, 1897) stat. restit.**

**& comb. nov.**

(Figs 69, 71)

*Anthicus truncatus* var. *decoloratus* Pic, 1897a: 120.

*Anthicus truncatus* var. *decoloratus*: PIC (1911b): 78 (catalogue); WINKLER (1927): 841 (catalogue).

*Anthicus (Stricticomus) decoloratus*: PIC (1901): 179 (species status).

*Anthicus (Stricticollis) decoloratus*: SAHLBERG (1913b): 19 (record Corfu).

*Stricticomus truncatus* var. *decoloratus*: UHMANN (1985): 192 (record Greece); TELNOV (2010): 22 (checklist, synonymy).

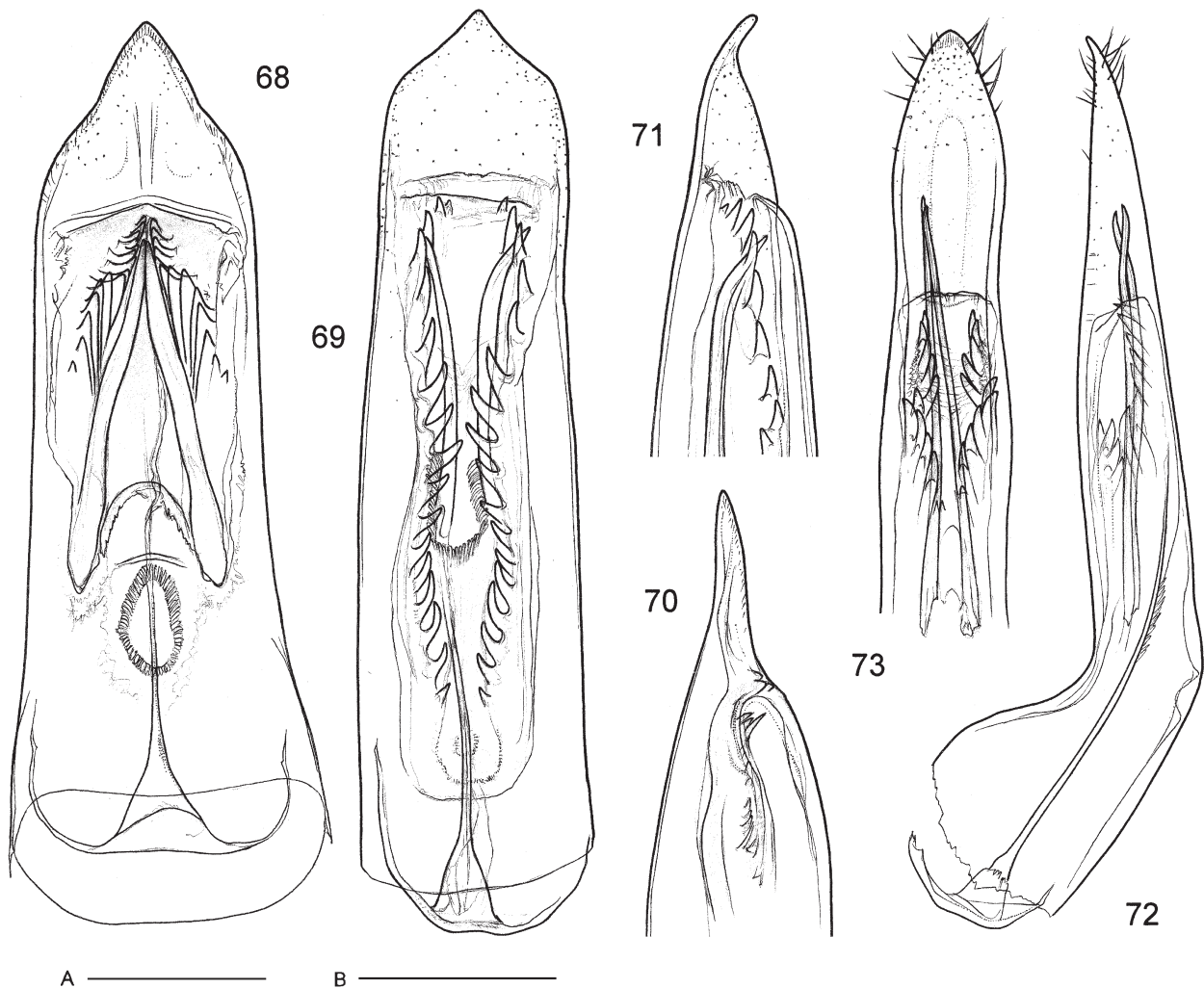
*Anthicus (Stricticomus) decoloratus* var. *subcoloratus* Pic, 1901: 179.

*Anthicus truncatus* var. *subcoloratus*: WINKLER (1927): 841 (catalogue).

*Stricticomus truncatus* var. *subcoloratus*: TELNOV (2010): 22 (checklist, synonymy).

**Type locality.** *Anthicus truncatus* var. *decoloratus* – Greece, Corfu, Gastouri; *A. decoloratus* var. *subcoloratus* – Greece, Peloponnese, Olympia.

**Type material.** *Anthicus truncatus* var. *decoloratus* – SYNTYPE: ♀, 'Gasturi Apfelbeck Corfu [p+h] // type [h; yellowish label] // TYPE [p; red



Figs 68–73. Aedeagus: 68 – *Microhoria antalya* sp. nov., ventral view; 69 – *M. decolorata* (Pic, 1897) stat. restit. & comb. nov., ventral view; 70 – *M. antalya* sp. nov., apex in lateral view; 71 – *M. decolorata*, apex in lateral view; 72 – *M. truncata* (Pic, 1895) comb. nov., lateral view; 73 – same, apical half in ventral view. Scale bars: 0.2 mm – A (Figs 72, 73), B (Figs 68–71).

label] // *A. angulifer* Pic var ? *tres désiré* immature [h] // *decoloratus* Pic ? var *de truncatus* [h] (coll. Pic, MNHN).

*Anthicus* (*Stricticomus*) *decoloratus* var. *subcoloratus* – SYNTYPES [common label 'v. subcoloratus Pic [h]' pinned on bottom]: 9 ♀♀, 'Olympia [h]'; 3 ♀♀, 'Olympia 8 Mai [h] // *decoloratus* Pic var [h]'; 3 ♀♀, 'Olympia 8 Mai [h]'; 3 ♀♀, 'Olympia 10 Mai [h]'; 4 ♀♀, 'Olympia Moree [h]'; 3 ♀♀, 'Morée Olympia [h] // *decoloratus* Pic var [h]'; 2 ♀♀, 'Morée Olympia [h] // *decoloratus* Pic [h]'; 5 spec., same plain card, no labels (all coll. Pic, MNHN).

**Additional specimens.** GREECE: EPIRUS: 1 ♀, Parga, 22.–26.iv.1998, P. Poot lgt. (ZSMC). IONIAN ISLANDS: 1 ♀, Cephalonia, Rudi, 1905, O. Leonhard lgt. (NHMW); 6 ♀♀, Corfu, Agios Mattheos [no date and collector] (NHMW, ZKDC); 1 ♀, Corfu, Mount Deca [no date and collector] (NHMW); 1 ♂, Corfu [no date], Reitter lgt. (ZKDC). NORTH AEGEAN ISLANDS: 2 ♀♀, Samos Island, Avlakia, 37°47'N 26°51'E, 100 m, 28.iv.2003, Brachat & Meybohm lgt. (ZSMC); 2 ♀♀, Samos Island, Manolates, 37°47'N 26°49'E, 300 m, 29.iv.2003, Brachat & Meybohm lgt. (ZSMC); 1 ♂ 3 ♀♀, Samos Island, Platanakia, Nightingale Valley, 37°47'N 26°50'E, 50–200 m, 21.iv.2003, Brachat & Meybohm lgt. (ZSMC, ZKDC).

**Diagnosis.** *Microhoria longiceps* species-group; robust, reddish-brown species. Male elytra slightly bulging subapically (flattened in female), apical margin distinctly angled, channel of gland slight (inconspicuous slit at margin). Male sternum VII produced and moderately widely

rounded apically; sternum VIII forming paired, triangular sclerites, narrowly rounded and setose apically; tergum VII simple; tergum VIII simple; aedeagus (Figs 69, 71). Female sternum VII simple; tergum VII simple.

**Variation.** Body length (♂♀) 2.6–3.1 mm; moderately variable in size and convexity of eyes; head base narrowly rounded to subtruncate (Epirus, Ionian Islands, Peloponnese), more or less evenly rounded (North Aegean); head and pronotal disc more or less coarsely and densely punctate. The male specimen from Samos Island has the apical part of the tegmen somewhat longer, with spines of the endophallus densely spaced, similar to Fig. 68.

**Distribution.** Greece.

**Remarks.** Pic (1897a) described *Anthicus truncatus* var. *decoloratus* from an unstated number of specimens collected on the Greek island of Corfu. It was recently treated as synonym of *Stricticollis truncatus* (Pic, 1895) by Chandler et al. (2008) and Telnov (2010), however its identity and generic placement were never accurately determined.

Based on examination of the type and additional specimens from Corfu (including males), *Anthicus truncatus* var. *decoloratus* is removed from synonymy and has proven



to be a separate species of *Microhoria*, differing clearly from *M. truncata* comb. nov. by the more elongate head and elytra, the distinct humeri and postbasal impression (while ovoid, lacking humeri and evenly convex in *M. truncata*), denser punctation of the pronotal disc and elytra, and mainly by characters of the aedeagus (Figs 69, 71).

The syntypes of variety *subcoloratus* that were examined are essentially identical with the type of *M. decolorata*. However, this synonymy should be confirmed by examination of male specimens taken in the Peloponnese.

**Remarks.** The specimens from Samos are tentatively identified as this species, while noting clear differences in the dense arrangement of spines of the endophallus. Nevertheless, in *Microhoria* species the internal sac is largely membranous and therefore position of its small sclerotized structures is not stable. Moreover, study of male material was limited to only two specimens.

### *Microhoria globipennis* (Pic, 1897)

(Figs 66, 67, 137)

*Anthicus globipennis* Pic, 1897a: 120.

*Anthicus globipennis*: PIC (1911b): 51 (catalogue).

*Anthicus globipennis*: WINKLER (1927): 849 (catalogue).

*Microhoria globipennis globipennis*: CHANDLER et al. (2008): 440 (catalogue, distribution).

*Anthicus globipennis quercicola* Sahlberg, 1913a: 59, **syn. nov.**

*Anthicus globipennis* var. *quercicola* Krekich-Strassoldo, 1913: 227 (junior homonym, see Remarks).

*Anthicus globipennis* var. *quercicola*: WINKLER (1927): 849 (catalogue).

**Type locality.** *Anthicus globipennis* – Syria, Latakia Governorate, Jabal al Akrad ('Djebel Akrah'); *A. globipennis quercicola* – S Turkey, Bolkar Mountains (= Bulgar Dag).

**Type material.** *Anthicus globipennis* – SYNTYPES: 1 spec., 'D.F. Leuthner Djebel Akrah 85 N. SYRIEN [p; frame] // type [h; yellowish label]'; 1 spec., 'Syrie [h] type [h; yellowish label] // Krekich vidit [h] // globipennis Pic [h]'; 1 spec., 'globipennis Pic (Syrie)' (all coll. Pic, MNHN).

*Anthicus globipennis quercicola* – SYNTYPES: 1 ♂, 'Bulghar-Dagh J. Sahlbg. [h] // TYPE [p; red label] // quercicola Krek. [h; ochraceous label]' (NHMW); 1 ♀, 'BulgharDagh [p] // J. Sahlb. [p] // [female sex-symbol; p] // TYPE [p; red label]' (NHMW); 1 ♀, 'BulgharDagh [p] // J. Sahlb. [p] // TYPE [p; red label] // det. v. Krekich globipennis var. quercicola Krek. [p+h] // globipennis v. quercicola Taurus Sahlb. [h; frame]' (NHMW); 1 ♀, 'BulgharDagh [p] // J. Sahlb. [p] // quercicola Sahlb. Spec. typ. [p+h] // [female sex-symbol; h] // A. quercicola n. sp. [h; frame]' (coll. Pic, MNHN).

**Additional specimens.** SYRIA: 1 spec., Jabal an Nusayriah, Qual'at al Saladin, 35°35.509'N 36°03.827'E, 1334 m, 17.iv.2008, P. Hlaváč lgt. (ZKDC); 1 ♂, Qualat al Mahaliban, E of Slinfah, 40 km E of Latakia, 31.v.2009, M. Šárovec lgt. (ADBC). TURKEY (Hatay prov.): 3 spec., Altinozu, near Antakya, 22.iv.1992, M. Kocian lgt. (ZKDC); 1 spec., Cevlik, near Samandag, 23.–26.iv.1994, P. Průdek & J. Kovalovský lgt. (ZKDC); 12 spec., Cevlik, 25 km W of Hatay, 22.–23.iv.1997, T. Růžicka lgt. (ZKDC); 1 spec., Nur Daglari Mts, Tulek, Ulucinar env., 5.v.2005, K. Orszulik lgt. (ZKDC); 2 spec., 19 km N of Antakya, Ziyaret Dağı, Şenköy, 913 m, 2.iv.2004, M. Schülke lgt. (ZKDC); 3 spec., same locality, 36°01'48"N 36°07'19"E, E slope, oak and laurel shrubs, sifted, 5.iv.2004, M. Schülke lgt. (ZKDC).

**Diagnosis.** Largely reddish, apterous species (Fig. 137). Elytral apices in males simple, margin quite evenly shaped (not swollen, channel of gland absent). Male sternum VII rather short, with slight median emargination; sternum VIII forming paired, subtriangular, asetose, weakly sclerotized sclerites; tergum VII and VIII simple. Female sternum VII simple; tergum VII subtriangular, slightly produced apically; aedeagus (Figs 66, 67).

**Variation.** Body length (♂♀) 2.1–2.9 mm; elytra unicolorous reddish or vaguely brownish laterally.

**Distribution.** Syria, Turkey.

**Remarks.** PIC (1897a) described *Anthicus globipennis* from an unstated number of specimens collected by F. J. Leuthner at the locality Jabal al Akrad, which is a mountainous region (400–1000 m) in northwestern Syria along the Coastal Mountain Range.

SAHLBERG (1913a) described *Anthicus globipennis quercicola* and KREKICH-STRESSOLD (1913) described *A. globipennis* var. *quercicola*, based on specimens from same collection sample (Bulghar Dag Mts, near Turunschli, from flowering *Quercus ilex*, 25.–28.iv.1906, J. & U. Sahlberg lgt.). Sahlberg sent representatives of this species to Krekich-Strassoldo for his comments, and subsequently received a letter from Krekich-Strassoldo confirming that '*Anthicus quercicola* Sahlberg' was a variety of *A. globipennis* Pic (SAHLBERG 1913a: 61). Sahlberg's description was published in issue 8 of volume 55 [1912–1913] of the *Öfversigt af Finska Vetenskaps-Societetens Förhandlingar* which when compared with dates of publication found in the following volumes of this journal suggested that this issue was published in April or May of 1913. Krekich-Strassoldo's description of the same taxon was published in issue VII/VIII of volume 32 of the *Wiener Entomologische Zeitung*, dated July 15, 1913. While the date of issue cannot be precisely identified for Sahlberg's paper, it was published in the first half of the year 1913, and Sahlberg indicated later in that year (SAHLBERG 1913c: 193) [published September, 2013] that the name of Krekich-Strassoldo was a junior synonym.

### *Microhoria truncata* (Pic, 1895) comb. nov.

(Figs 72, 73)

*Anthicus truncatus* Pic, 1895: cclxxxiv.

*Anthicus truncatus*: PIC (1901): 179 (note); PIC (1911b): 78 (catalogue); WINKLER (1927): 841 (catalogue).

*Striticollis truncatus*: CHANDLER et al. (2008): 447 (catalogue, distribution); TELNOV (2010): 22, 29 (checklist, synonymy, record Turkey).

**Type locality.** Turkey, Hatay Province, Akbez.

**Type material.** SYNTYPE: ♀, 'Akbés 1894 [h] // type [h; yellowish label] // sp. pres capilliger [h] // TYPE [p; red label] // truncatus Pic [h]' (coll. Pic, MNHN).

**Additional material.** TURKEY: 1 ♂ 1 ♀, Osmaniye, 1000 m, 1.–8.v.1969, F. Schubert lgt. (ZSMC, NHMW).

**Diagnosis.** *Microhoria longiceps* species-group; reddish, rather glossy, apterous species. Elytra evenly convex, lacking distinct humeri, subtruncate, median apical angle prominent, moderately produced (channel of gland forming slight cavity at apex). Male sternum VII distinctly produced and evenly rounded apically; sternum VIII forming paired simple sclerites; tergum VII and VIII simple; aedeagus (Figs 72, 73). Female sternum VII simple; tergum VII simple.

**Variation.** Body length (♂♀) 2.9–3.2 mm.

**Distribution.** Turkey.

**Remarks.** PIC (1895) described *Anthicus truncatus* from an unstated number of specimens collected at the locality Akbez in southern Turkey. The additional specimens examined originate from an adjacent province (Osmaniye

is about 30 km NW from Akbez). They were found to be identical with the single female syntype in Pic's collection, and confirm placement of *A. truncatus* in *Microhoria*.

#### *Microhoria ocreata* species-group

**Diagnosis.** Usually elongate species, with widely rounded head base and rather uniform short setae on elytra (at most weakly divergent in postbasal area, no conspicuous setose bands, Fig. 138); pronotal characters comparatively stable, with subparallel postero-lateral margins (never distinctly constricted in dorsal view) and inconspicuous setation. Mesoventrite with partly bordered margins (sulcus always thin to barely evident laterally), sometimes with indication of longitudinal submedian carinae (somewhat bulging medially); setose fringe of mesepimera well-developed; submarginal setose impressions of metaventrite and abdominal sternum III absent or indistinct; all tibiae with paired terminal spurs; elytral apices in males distinctly modified, with sclerotized cavity. Aedeagus (Figs 74, 75): tegmen capsuliform, rounded to flatly produced and somewhat tapering apically (never bilobed); endophallus with longitudinal sclerite, bearing gonopore apically and an extremely long, slender, flexible spine, originating from its base and pointing apically.

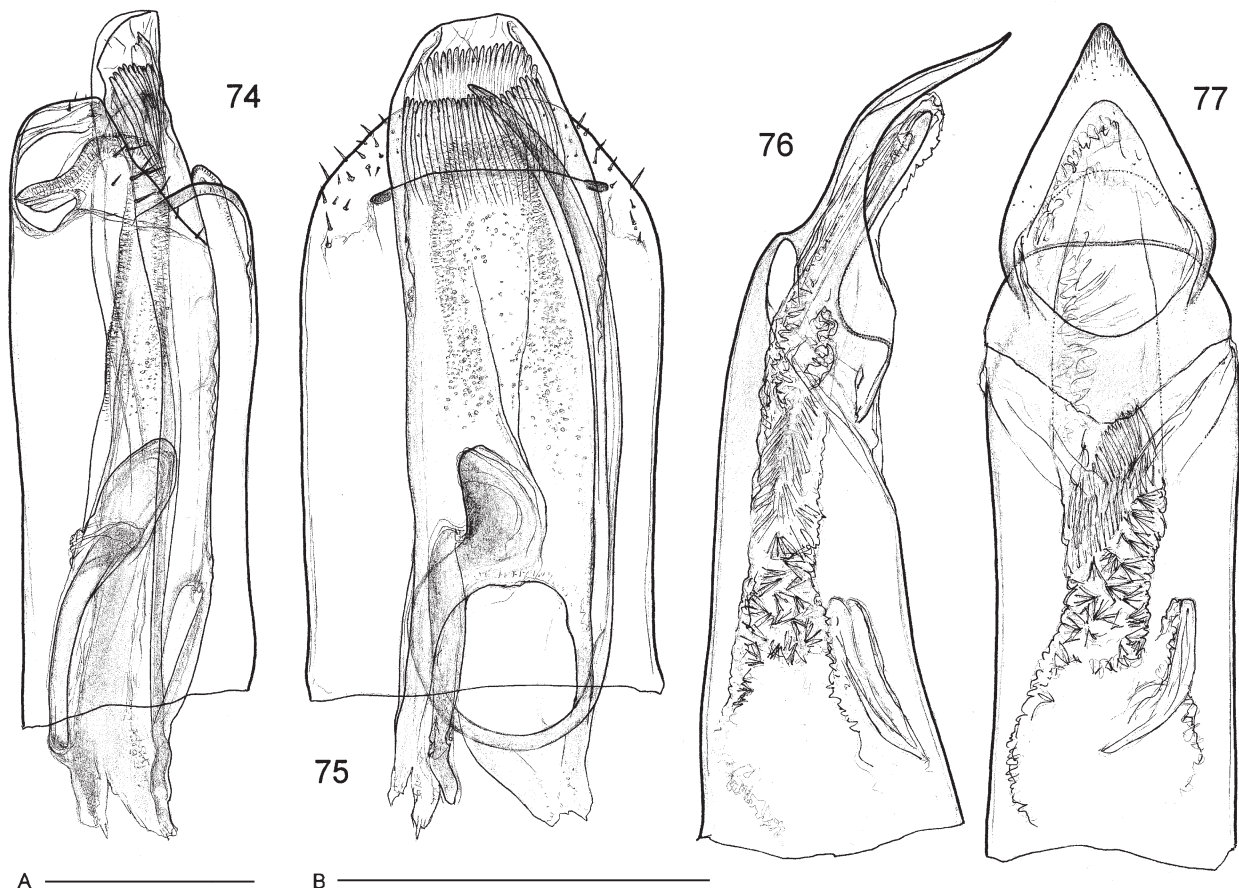
**Distribution.** Mediterranean Region (Algeria, Egypt, Italy, Morocco, Portugal, Spain, Tunisia). The record of *Tenuicomus pallicrus* from Saudi Arabia by UHMANN (1998) is probably erroneous.

**Species included** (7 spp.). *Microhoria agriliformis* (Pic, 1893) comb. nov., *M. alferii* (Pic, 1923) comb. nov., *M. escalerae* (Pic, 1904) comb. nov., *M. meloiformis* (Reitter, 1890) comb. nov., *M. ocreata* (LaFerté-Sénéctère, 1847) comb. nov., *M. pallicra* (Dufour, 1849), and *M. tarifana* (Pic, 1904) comb. nov.

**Remarks.** This group holds some species placed previously in *Tenuicomus* (CHANDLER et al. 2008, as *Tenuicollis*). They resemble members of the *M. fasciata* and *M. schimperi* groups based on characters of the mesoventrite and the male elytral apices, but differ by the reduced submarginal setose impressions of the metaventrite and abdominal sternum III, and by characters of the aedeagus (endophallic armature and position of the gonopore).

#### *Microhoria oedipus* species-group

**Diagnosis.** Robust species, showing usually more distinct sexual dimorphism (Fig. 139), mostly with modified elytral setation (swirled setae, setose bands); rather stable in pronotal characters, with distinct and longer setose latero-basal impressions. Mesoventrite with partly bordered lateral margins (sulcus absent laterally), and well-developed longitudinal submedian carinae (Figs 13, 14); setose fringe of mesepimera well-developed (Fig. 33); submarginal setose impressions of metaventrite and abdominal sternum III conspicuous; metatibiae more or less swollen and modified in males, with two terminal spurs; male metafemora with a row of coarser setae on inner side (at least in some



Figs 74–77. Aedeagus: 74 – *Microhoria ocreata* (LaFerté-Sénéctère, 1847) comb. nov., lateral view; 75 – same, ventral view; 76 – *M. oedipus* (Chevrolat, 1860), lateral view; 77 – same, ventral view. Scale bars: 0.2 mm – A (Figs 76, 77), B (Figs 74, 75).



species); elytral apices in males conspicuously modified, subtruncate to more or less strongly excavate and lobed, with scattered secretory pores (Fig. 43). Aedeagus (Figs 76, 77): tegmen hood-like, with simple pointed apex ('cuculliform'); gonopore free.

**Distribution.** Northern Africa (Algeria, Morocco, Tunisia).

**Species included** (13 spp.). *Microhoria admirabilis* (Pic, 1894), *M. biauriculata* (Pic, 1920), *M. fortissima* (Pic, 1894), *M. leprieuri* (Baudi di Selve, 1877), *M. lobata* (Pic, 1905), *M. normandi* (Pic, 1915), *M. obuncata* Normand, 1950, *M. oedipus* (Chevrolat, 1860), *M. sicardi* (Pic, 1893), *M. subtruncata* (Pic, 1920), *M. succinta* (Chevrolat, 1877), *M. tunisica* (Pic, 1893), and *M. valga* (Fairmaire, 1875).

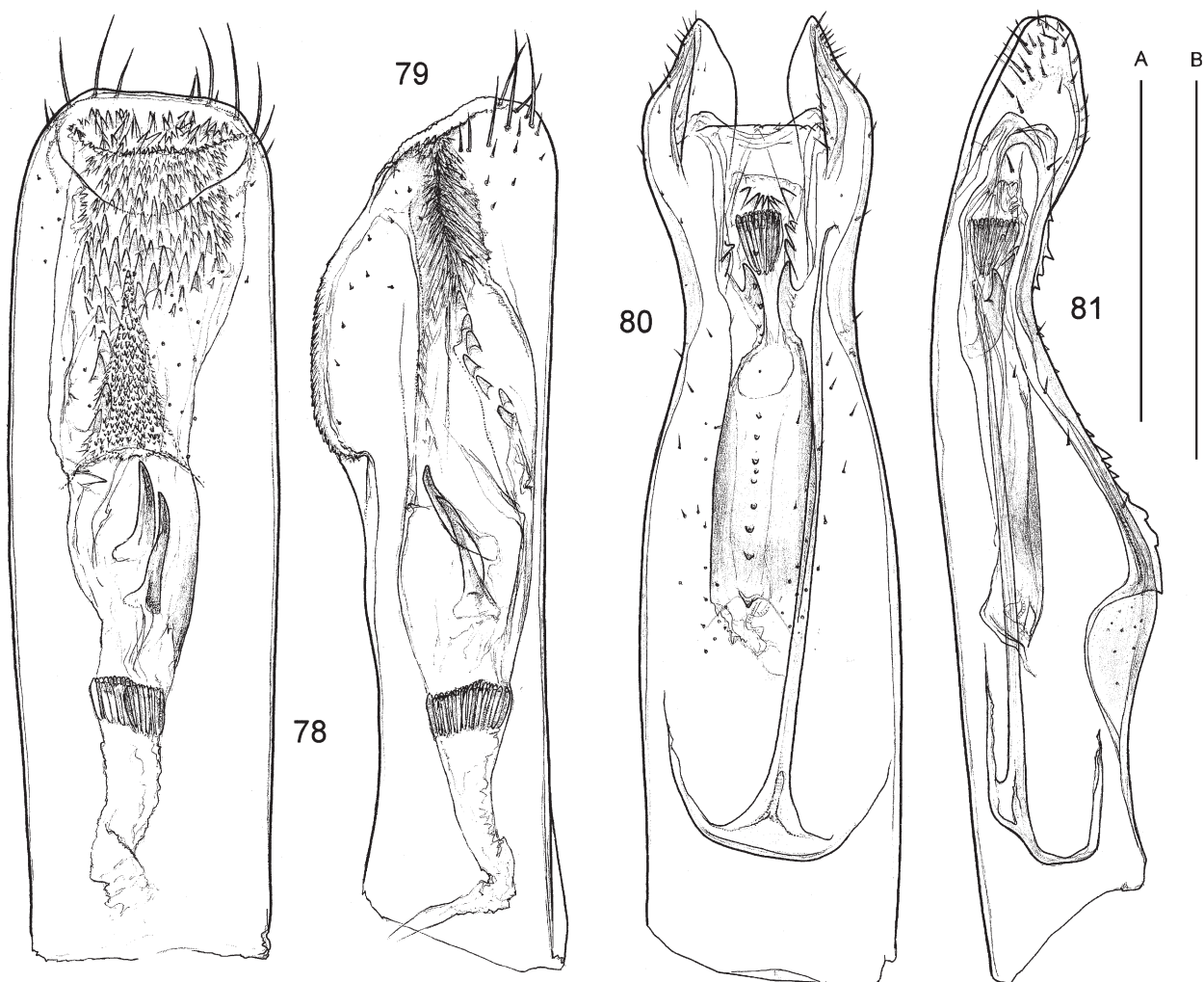
**Remarks.** This group holds the species formerly treated as *Microhoria sensu stricto*. They are undoubtedly closely related to members of the *M. fasciata* species-group, but differ by the more conspicuous sexual dimorphism. However, it should be stated, that both modifications of metatibiae and elytral apices of males in this group are variably developed and most of the above listed species were only briefly examined or included on the basis of original descriptions.

### *Microhoria olivacea* species-group

**Diagnosis.** Mostly smaller species, with unicolorous elytra (Fig. 140); moderately variable in pronotal characters, mostly with weak latero-basal impressions and uniformly short setation; elytral setae at most weakly divergent in postbasal area. Mesoventrite with nearly completely bordered lateral margins (Figs 21, 22), submarginal sulcus thin and sometimes inconspicuous laterally; setose fringe of mesepimera well-developed (Fig. 22); submarginal setose impressions of metaventrite and abdominal sternum III absent; all tibiae with paired terminal spurs; elytral apices in males nearly simple, pores scattered along somewhat swollen margin, similar to Fig. 46. Aedeagus (Figs 78–81): tegmen rounded to more or less distinctly bilobed apically ('capsuliform'), ventrally denticulate on outer side; gonopore free.

**Distribution.** Western Mediterranean Region (Algeria, Italy, Portugal, Spain, Tunisia).

**Species included** (8 spp.). *Microhoria bruckii* (Kiesenwetter, 1870) comb. nov., *M. olivacea* (LaFerté-Sénectère, 1849) comb. nov., *M. platiai* (Degiovanni, 2000) comb. nov., *M. semidepressa* (Pic, 1893) comb. nov.,



Figs 78–81. Aedeagus: 78 – *Microhoria viturati* (Pic, 1893) comb. nov., ventral view; 79 – same, lateral view; 80 – *M. olivacea* (LaFerté-Sénectère, 1849) comb. nov., ventral view; 81 – same, lateral view. Scale bars: 0.2 mm – A (Figs 80, 81), B (Figs 78, 79).

*M. subaerea* (Reitter, 1890) comb. nov., *M. subsericea* (Pic, 1898) comb. nov., *M. velox* (LaFerté-Sénéctère, 1849) comb. nov., and *M. vitureti* (Pic, 1893) comb. nov.

**Remarks.** This species-group holds some species placed previously in *Tenuicomus* and *Clavicomus* (CHANDLER et al. 2008, as *Tenuicollis* and *Clavicollis*). They share nearly all characters of the *M. heydeni* species-group, but differ by the simple tegmen that is at most shortly bilobed at the apex.

#### *Microhoria plicatipennis* species-group

**Diagnosis.** Elongate species, with oval head, conspicuously setose latero-basal impressions of pronotum distinct, and elytral setation somewhat modified. Mesoventrite with partly bordered lateral margins (sulcus reduced laterally), with indication of longitudinal submedian carinae; setose fringe of mesepimera well-developed; submarginal setose impressions of metaventrite and abdominal sternum III conspicuous; all tibiae with paired terminal spurs; elytral apices in males distinctly modified, with peculiar sinuate longitudinal sulcus near middle (Fig. 148). Aedeagus (Fig. 82): tegmen capsuliform, bilobed apically; gonopore free.

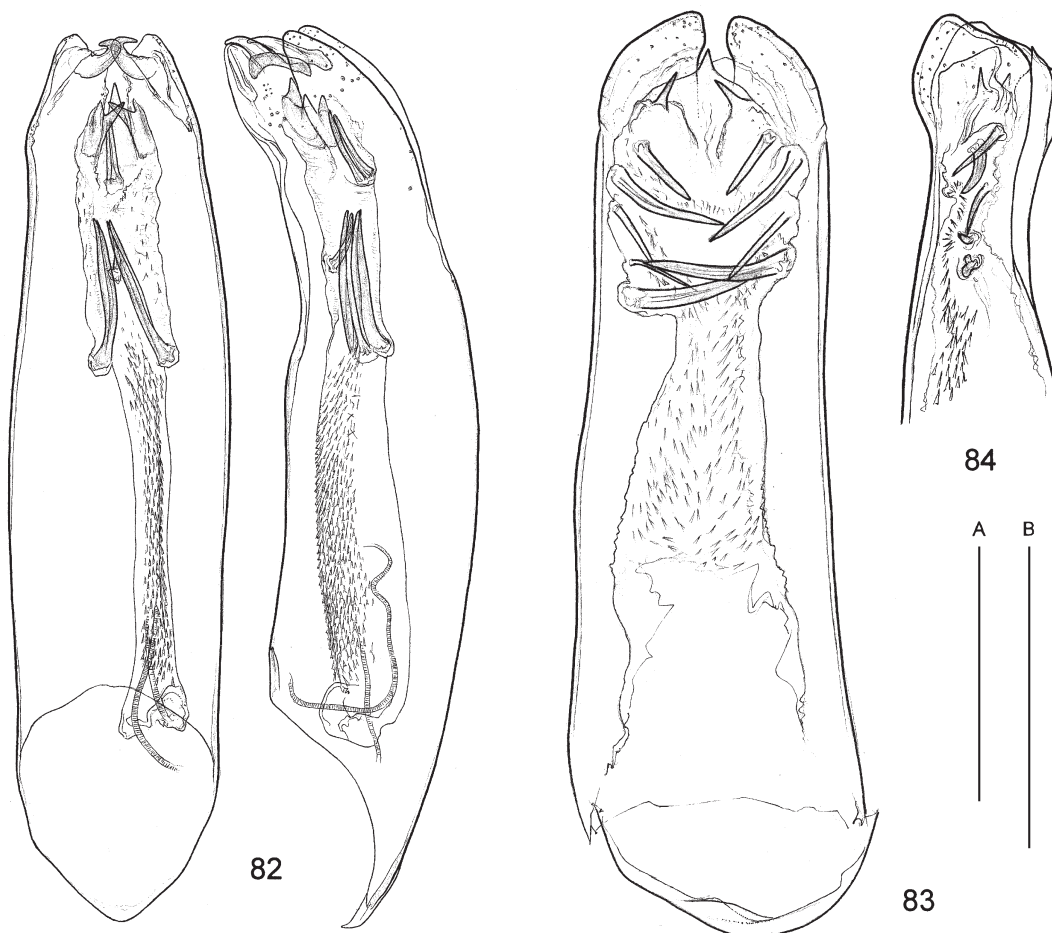
**Distribution.** Northern Africa (Morocco).

**Species included** (4 spp.). *Microhoria apicordiger* (Bonadona, 1954) comb. nov., *M. kocheri* (Pic, 1951) comb. nov., *M. plicatipennis* (Pic, 1936) comb. nov., and *M. postimpressa* (Pic, 1938) comb. nov.

**Remarks.** All four species of this group were previously placed in *Clavicomus* (CHANDLER et al. 2008, as *Clavicolis*). They share nearly all characters of the *A. schimperi* species-group, but differ by the peculiar modification of the male elytra (Fig. 148). Species-group placement of *M. kocheri* is tentative, based on relationships noted in the original description (described from a single female specimen).

#### *Microhoria schimperi* species-group

**Diagnosis.** Mostly elongate species, with distinct, conspicuously setose latero-basal impressions of pronotum, sometimes with contrasting markings on elytra (Figs 141–144). Mesoventrite with completely or partly bordered lateral margins (Figs 18, 20), mostly with distinct or at least weakly indicated longitudinal submedian carinae (Fig. 17); setose fringe of mesepimera well-developed; submarginal setose impressions of metaventrite and abdominal sternum III weakly indicated to conspicuous; all tibiae with paired terminal spurs; elytral apices in males distinctly modified, channel of gland forming sclerotized cavity (inside with pores and cuticular cones), adjacent apical margin of elytra with pointed protrusion, varying in prominence (Fig. 42). Aedeagus (Figs 83–89): tegmen capsuliform, frequently bilobed apically; gonopore free, situated basally and rather inconspicuous.



Figs 82–84. Aedeagus: 82 – *Microhoria apicordiger* (Bonadona, 1954) comb. nov. in ventral (left) and lateral (right) view; 83 – *M. henoni* (Pic, 1892) comb. nov., ventral view; 84 – same, apical part, lateral view. Scale bars: 0.2 mm – A (Figs 83, 84), B (Fig. 82).



**Distribution.** Northern and northeastern Africa and Middle East of Asia (Iraq, Oman, SW Pakistan, Yemen).

**Species included** (27 spp.). *Microhoria almukalla* sp. nov., *M. antinorii* (Pic, 1894) comb. nov., *M. arenaria* Bonadonna, 1956, *M. babaulti* (Pic, 1921) comb. nov., *M. bonnairii* (Fairmaire, 1883) comb. nov., *M. cervi* sp. nov., *M. cyanipennis* (Grilat, 1886) comb. nov., *M. dolichocephala* (Baudi di Selve, 1877) comb. nov., *M. erythraea* (Pic, 1899) comb. nov., *M. fuscomaculata* (Pic, 1893) comb. nov., *M. gestroi* (Pic, 1895) comb. nov., *M. henoni* (Pic, 1892) comb. nov., *M. irregularis* (Pic, 1932) comb. nov., *M. lomii* (Pic, 1953), *M. marginicollis* (Pic, 1951) comb. nov., *M. mesopotamica* (Pic, 1912) comb. nov., *M. nigroterminata* (Pic, 1909) comb. nov., *M. paupercula* (LaFerté-Sénéctère, 1847) comb. nov., *M. pierreii* Bonadonna, 1956, *M. postluteofasciata* (Pic, 1938) comb. nov., *M. rabinovitchi* (Koch, 1935), *M. semiviridis* (Pic, 1951) comb. nov., *M. schimperi* (Pic, 1898) comb. nov., *M. sic-censis* (Normand, 1950) comb. nov., *M. yemenita* (Nardi, 2004) comb. nov., *M. spinipennis* (Pic, 1898) comb. nov., and *M. sulaimanica* sp. nov.

**Remarks.** The species of this group have been previously treated in various genera, mostly as *Tenuicomus*, but also as *Clavicomus*, *Microhoria*, and *Anthicus* (CHANDLER et al. 2008, the former two as *Tenuicollis* and *Clavicollis*). They

are closely related to the members of *M. fasciata* species-group based on similarity, but are more elongate with more slender legs, and differ mainly by the pointed protrusion of the elytral apices in males (cf. Figs 42 versus 41) and by morphology of the tegmen, which is somewhat less sclerotized, having a bilobed or rather rounded apex.

***Microhoria almukalla* Kejval, sp. nov.**

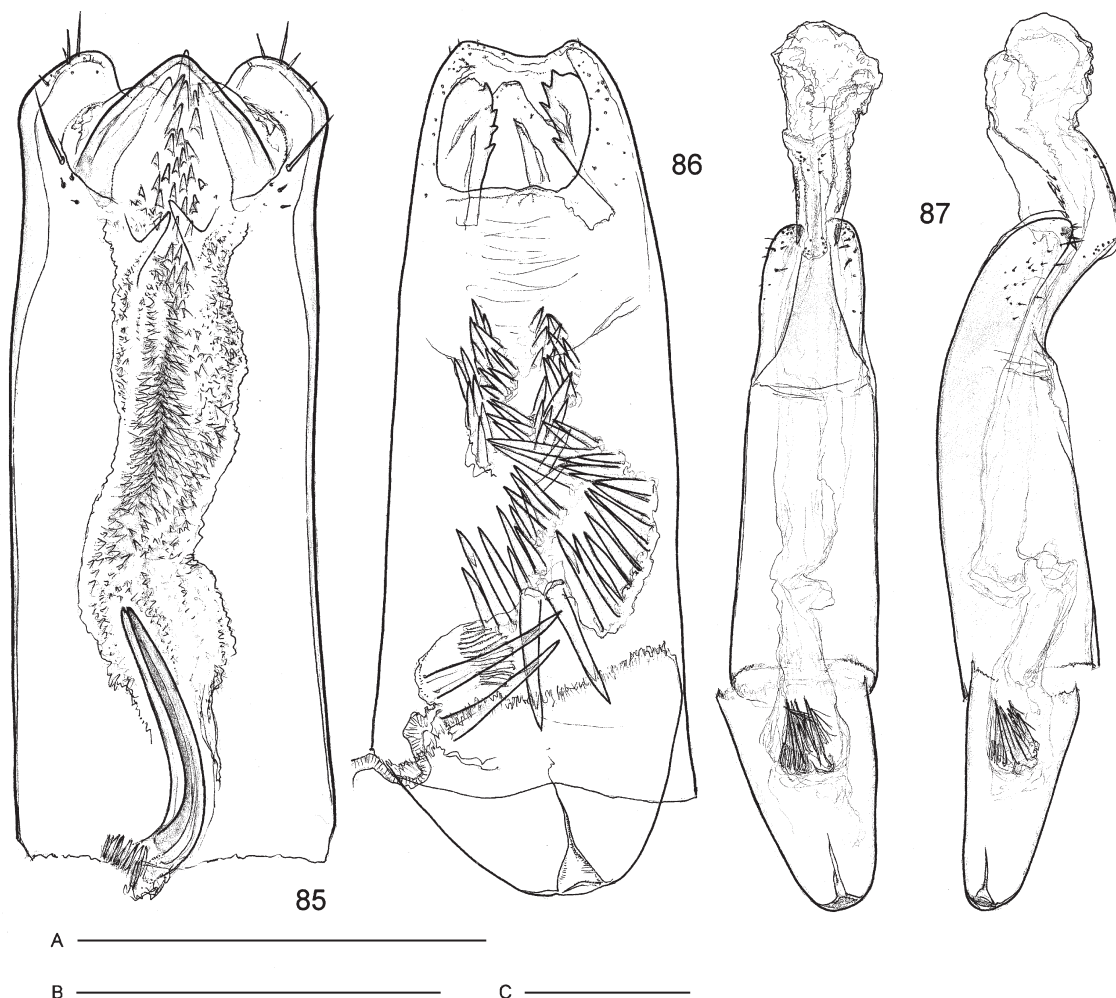
(Fig. 86)

**Type locality.** Yemen, Kawr Sayban Mount, NW of Al Mukalla, 14°37'N 49°03'E, alt. 575 m.

**Type material.** HOLOTYPE: ♂, 'S YEMEN Kawr Saybān mt. NW Al Mukallā 575 m N14°37' / E49°03' (light) 29.III.2007 M. Rejzek [11] [p] (NMPC).

**Description.** **Male** (holotype). Body length 2.2 mm. Head and pronotum dark brown, elytra yellowish with vaguely outlined dark markings: brown base, transverse band at about midlength, apices, suture, and lateral margins brownish; femora brown, tibiae and tarsi yellowish-brown, antennae largely dark brown, antennomeres II–VI somewhat paler.

Head 1.1 times as long as wide, moderately widely rounded posteriorly; eyes medium-sized, convex. Surface moderately glossy, minutely and rather densely punctate; punctures distinctly spaced; setation short, subdecumbent,



Figs 85–87. Aedeagus: 85 – *Microhoria paupercula* (LaFerté-Sénéctère, 1849) comb. nov.; 86 – *M. almukalla* sp. nov., ventral view; 87 – *M. schimperi* (Pic, 1898) comb. nov. in ventral (left) and lateral (right) view. Scale bars: 0.2 mm – A (Fig. 85), B (Fig. 86), C (Fig. 87).

with few, short erect setae. Antennae moderately enlarged in apical half; antennomeres X nearly 1.2 times, XI 2.4 times as long as wide.

Pronotum 1.1 times as long as wide, moderately narrower than head including eyes, unevenly rounded anteriorly, pronotal disc moderately convex, outline in dorsal view with lateral margins moderately impressed posteriorly. Surface moderately glossy, distinctly and densely punctate; punctuation coarser, setation as on head, rather uniform, including latero-basal sides.

Elytra 1.7 times as long as wide, subparallel, slightly impressed medially in basal half; humeri distinctly protruding; apices modified, channel of gland forming minute cavity at pointed protrusion of margin. Surface at most moderately glossy, minutely and rather densely punctate; punctuation and setation similar to head, with scattered short erect setae.

Legs slender, simple; all tibiae with paired terminal spurs.

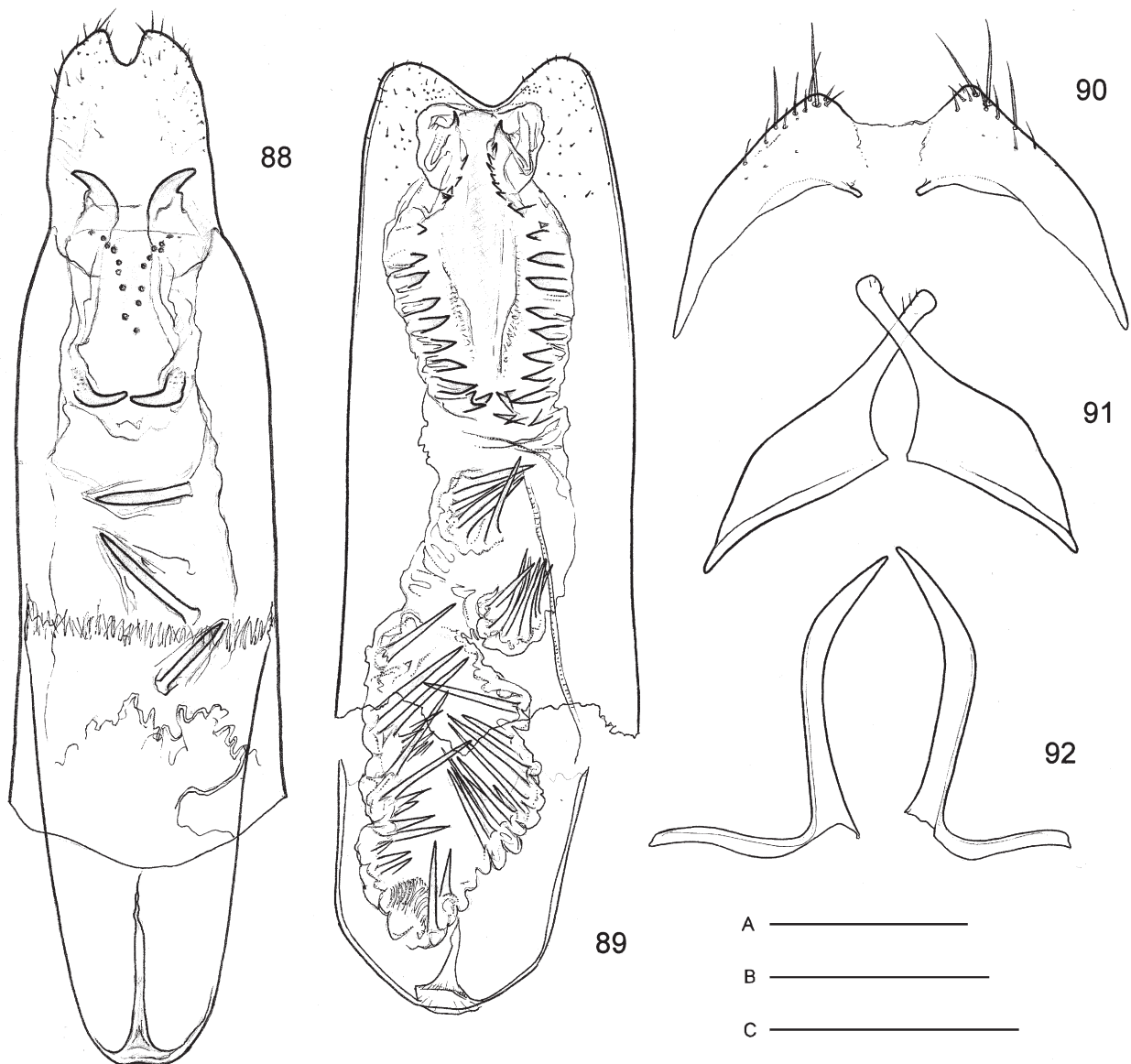
Abdominal sternum VII slightly produced and rounded apically; sternum VIII forming simple, subtriangular paired sclerites, separate, moderately produced posteriorly. Aedeagus (Fig. 86): tegmen shortly tubular, with simple, rounded to moderately emarginate apex; endophallic armature with numerous robust, simple spinules.

**Female.** Unknown.

**Differential diagnosis.** *Microhoria almukalla* sp. nov. belongs to the *M. schimperi* species-group. It is externally very similar to *M. cervi* sp. nov. from Oman, differing by its markedly smaller eyes, more weakly defined punctuation on the head, by the simple, subtriangular sclerites of male sternum VIII (strongly narrowed and elongate, sabre-like in *M. cervi* sp. nov.), and by characters of the aedeagus (cf. Figs 86 versus 88).

**Etymology.** Named after the type locality; noun in the nominative case, standing in apposition.

**Distribution.** Yemen.



Figs 88–92. 88 – *Microhoria cervi* sp. nov., aedeagus in ventral view; 89 – *M. sulaimanica* sp. nov., aedeagus in ventral view. 90–92 – male sternum VIII: 90 – *M. sawda* sp. nov.; 91 – *M. bacillisternum* sp. nov.; 92 – *M. cervi* sp. nov. Scale bars: 0.2 mm – A (Fig. 92), B (Figs 89–91), C (Fig. 88).



***Microhoria cervi* Kejval, sp. nov.**

(Figs 6, 88, 92, 143)

**Type locality.** Oman, Dhofar Governorate, Taqah env., 17°02'14"N 54°24'13"E, alt. 20–30 m.

**Type material.** HOLOTYPE: ♂, 'OMAN mer., TAQAH env., ca 20–30 m, 31.vii.–11.viii.1999, at light, R. Červenka leg. [p]' (NMPC). PARATYPES: 26 ♂♂, same data as holotype (ZKDC, BMNH, MZLU, NHMW, NMPC, DCDC, ZSMC); 5 ♂♂, 'S – OMAN, rd. Al Mughsayl – Salalah, ca 3 km from AL MUGHSAYL, 8.–11.viii.1999, 20 m, R. Červenka lgt. [p]' (ZKDC); 2 ♂♂, 'Oman, Dhofar Pr., Rakyut, 120 km E of Salalah, 9–11.IX.2007, St. Jakl leg. [p]' (ADBC); 3 ♂♂, 'OMAN, Dhofar prov., AL MUGHSAYL, 0–20 m, viii.1999, S. Jakl lgt. [p]' (ZKDC); 39 ♂♂, 'OMAN 3.9.2017 Al-Mughsayl 16 53' 00", 53 47' 42" lgt. Orszulik (KOOC, ZKDC); 10 ♂♂ 20 ♀♀, 'Sultanate of Oman, Dhofar prov., Wadi Al Mughsayl, 29.–31.viii.2007, J. Horák lgt. [p]' (ZKDC); 9 ♂♂, 'Oman, Dhofar Pr, Wadi Al Mughsayi, 50 m., 29–31.VIII.2007, St. Jakl leg. [p]' (ADBC); 2 mm, 'Oman, Dhofar, 9 km WSW Al Mughsayi, 8–15.VIII.2014, S. Prepsl leg. [p]' (ADBC); 41 ♂♂, 'Sultanate of Oman, Dhofar prov., Wadi Nashib, 20 km E of Salalah, 16.–22.ix.2006, S. Jakl lgt. [p]' (ZKDC); 6 ♂♂, 'Oman, Dhofar Pr, Wadi Nashib, 50m., 25–28.VIII.2007, St. Jakl leg. [p]' (ADBC); 1 ♂, 'Oman, Dhofar Pr, Wadi Nashib, 25m., 01–02.IX.2007, St. Jakl leg. [p]' (ADBC); 37 ♂♂, 'Oman, Dhofar, Salalah, Wadi Darbat, 41 m., 17°04'23"N 54°25'56"E, at uv light, 10.VII.2018, I. Zappi leg. [p]' (ADBC).

**Description. Male** (holotype). Body length 2.8 mm. Head and pronotum dark brown, elytra yellowish to reddish, with vaguely outlined dark markings: base, transverse band at about midlength, apices and suture all brownish (Fig. 143); femora brown, tibiae and tarsi yellowish-brown, antennae reddish-brown in basal half, dark brown in apical half.

Head elongate, 1.2 times as long as wide, somewhat widely rounded posteriorly; eyes large, rather convex. Surface moderately glossy, distinctly and rather densely punctate; punctures well-spaced; setation short, subdecumbent, with scattered erect setae. Antennae slightly enlarged in apical half; antennomeres X 1.2 times, XI 2.4 times as long as wide.

Pronotum nearly as long as wide, distinctly narrower than head including eyes, evenly rounded anteriorly, pronotal disc moderately convex, outline in dorsal view with lateral margins nearly straightly narrowing posteriorly. Surface moderately glossy, minutely, densely punctate; punctuation and setation as on head.

Elytra 1.8 times as long as wide; humeri distinctly protruding; omoplates slightly indicated; apices modified, channel of gland forming minute cavity at pointed protrusion of margin. Surface moderately glossy, minutely and rather densely punctate; punctuation more delicate than on head, setation as on head, with scattered short erect setae.

Legs slender, simple; all tibiae with paired terminal spurs.

Abdominal sternum VII slightly produced and unevenly rounded apically; sternum VIII forming paired, slender and strongly elongate, sabre-like sclerites (Fig. 92). Aedeagus (Figs 6, 88): tegmen flatly produced and narrowly emarginate apically; endophallic armature with two pairs of robust, claw-like spines and some simple, randomly scattered spinules.

**Female.** Identical with male for most external characters; elytral apices simple; sternum VII simple; tergum VII simple, subtriangular, evenly rounded apically.

**Variation.** Body length (♂♀) 2.2–3.1 mm; dark markings of elytra varying in extent and prominence, some speci-

mens from Wadi Al Mughsayl extremely dark, with two pairs of small yellowish spots on elytra; male abdominal sternum VII unevenly rounded to slightly emarginate apically.

**Differential diagnosis.** *Microhoria cervi* sp. nov. belongs to the *M. schimperi* species-group. It is externally very similar to *M. almukalla* sp. nov. from Yemen, differing by its markedly larger eyes, coarser punctation on the head, by the strongly narrowed and elongate sabre-like sclerites of male sternum VIII (simple, subtriangular in *M. cervi* sp. nov.), and by characters of the aedeagus (cf. Figs 88 versus 86).

**Etymology.** Named in honour of the late Czech entomologist Radek Červenka, nicknamed 'Červ' by friends, who collected the holotype and some of the paratypes of this species.

**Distribution.** Oman.

***Microhoria schimperi* (Pic, 1898) comb. nov.**

(Fig. 87)

*Anthicus schimperi* Pic, 1898: 70.

*Anthicus schimperi*: Pic (1911b): 72 (catalogue).

*Anthicus (Aulacoderus) schimperi*: VAN HILLE (1984): 60, figs 193–197 (redescription).

**Type locality.** Ethiopia ('Abyssinie').

**Type material.** Syntypes, see Remarks (MNHN).

**Additional material.** ETHIOPIA: 2 ♂♂, 'MUSEUM PARIS ABYSSINIE SCHIMPER 430–50' (MNHN).

**Diagnosis.** *Microhoria schimperi* species-group; slender brownish-black species with oval head. Male sternum VII simple, slightly produced and evenly rounded apically; sternum VIII forming pair of simple, subtriangular sclerites, weakly connected medially; tergum VII simple; tergum VIII simple; aedeagus (Fig. 87).

**Distribution.** Ethiopia.

**Remarks.** PIC (1898) described *Anthicus schimperi* from an unstated number of specimens collected by W. Schimper in 1850 in 'Abyssinie' and deposited in MNHN. The examined specimens originate from a larger series present in a box with material collected by Schimper. These lack Pic's identification labels, but the labels bear the appropriate data and it is possible that they are syntypes, or at the least topotypes. The redescription by VAN HILLE (1984) was based on five 'cotypes' from MNHN, which may have originated from the same sample.

*Anthicus schimperi* displays all the important distinguishing characters of *Microhoria*, and differs from *Aulacoderus* in having two terminal spurs on all tibiae.

***Microhoria sulaimanica* Kejval, sp. nov.**

(Figs 89, 144)

**Type locality.** Pakistan, Balochistan Province, Sulaiman Mts, Zhob valley [ca. 31°21'N 69°27'E], alt. 1700 m.

**Type material.** HOLOTYPE: ♂, 'Pakistan, Sulaiman Mts, Zhob valley, 1700 m, viii.2005 [p; no collector]' (NMPC). PARATYPES: 1 ♂, same data as holotype (ZKDC); 6 ♂♂, 'UZBEKISTAN: Suzkhandaria Area, Djarkuzgen Town, 18.V.2003, leg. V. Gurko' (ADBC, ZKDC).

**Description. Male** (holotype). Body length 2.8 mm. Head largely reddish-brown, paler anteriorly, pronotum reddish, elytra yellowish with vaguely outlined dark markings:

base, transverse band at about midlength, apices and suture brown (Fig. 144); legs reddish, antennae reddish-brown, darkened on apical third.

Head elongate, 1.3 times as long as wide, narrowed and evenly rounded posteriorly; eyes small, moderately convex. Surface glossy, minutely and rather densely punctate; punctures well-spaced; setation short, subdecumbent, with few erect setae. Antennae slightly enlarged for apical half; antennomeres X 1.4 times, XI 2.8 times as long as wide.

Pronotum 1.1 times as long as wide, as wide as head including eyes, evenly rounded anteriorly, pronotal disc moderately convex, outline in dorsal view with lateral margins narrowing and moderately impressed posteriorly. Surface glossy, densely punctate; punctation and setation of pronotal disc as on head; lateral sides along antebasal sulcus with dense fringed setation.

Elytra 1.7 times as long as wide; humeri distinctly protruding; omoplates slightly indicated; apices modified, channel of gland forming cavity at pointed protrusion of margin. Surface moderately glossy, distinctly and rather densely punctate; punctation coarser than on head, setation as on head, with scattered short erect setae.

Legs slender, simple; all tibiae with paired terminal spurs.

Abdominal sternum VII simple, evenly rounded apically; sternum VIII forming paired, subtriangular, asetose sclerites. Aedeagus (Fig. 89): tegmen shortly tubular and emarginate apically; endophallic armature with numerous spines, forming bunches and arranged in longitudinal paired rows.

**Female.** Unknown.

**Variation.** Body length (♂) 2.8–2.9 mm; the paratype with dark transverse band of elytra interrupted medially, with partly yellowish suture.

**Differential diagnosis.** *Microhoria sulaimanica* sp. nov. appears to be most similar to *M. almukalla* sp. nov., as suggested by similarities of the male characters, but differs as follows: body more pale coloured (largely reddish), head more produced posteriorly, pronotum minutely punctate and with conspicuous, dense, latero-basal setation (rather uniformly setose in *M. almukalla* sp. nov.), terminal antennomeres in males elongate, 2.8 times as long as wide (2.4 times in *M. almukalla* sp. nov.), endophallic armature with paired rows of robust spines (cf. Figs 89 versus 86).

**Etymology.** Named after the Sulaiman Mountains; the name is an adjective.

**Distribution.** Pakistan, Uzbekistan.

### *Microhoria yemenita* (Nardi, 2004) comb. nov.

*Anthicus yemenitus* Nardi, 2004: 138 (replacement name).

*Anthicus* (*Immichrohoria*) *scotti* Pic, 1957: 448 (junior homonym, see Remarks).

**Type locality.** Yemen, Jabal Jihaf, alt. 2310 m [13°45'38.5"N 44°40'35.6"E].

**Type material.** HOLOTYPE: ♀ [lacking head], 'Type H.T. [p; round label, red circle] // W. ADEN. PROT. Jebel Jihaf, ca. 7,000 ft. 7.x.1937 [p; yellow line] // B.M.Exp. to S.W.Arabia H.Scott & E.B.Britton B.M.1938-246 [p] // AT EDGE OF CULTIVATION [p] Goudet .. [h; illegible] // *Anthicus* (*Immichrohoria*) *scotti* Pic: TYPE [h] // *Anthicus* (*Immichrohoria*) *Scotti* n sp. [h] (BMNH).

**Additional material. YEMEN:** 1 ♀ 'AT EDGE OF CULTIVATION [p] // W. ADEN. PROT. Jebel Jihaf, ca. 7,000 ft. 7.x.1937 [p; yellow line] // B.M.Exp. to S.W.Arabia H.Scott & E.B.Britton B.M.1938-246 [p] // *Anthicus scotti* n sp [h]' (coll. Pic, MNHN).

**Diagnosis.** Probably *Microhoria schimperi* species-group; largely pale reddish species, with darker, oval head and rather convex, ovoid elytra (probably apterous or at least brachypterous). Female sternum VII simple; tergum VII simple.

**Distribution.** Yemen.

**Remarks.** Pic (1957) described *Anthicus scotti* from a single type specimen that lacks its head, which was confirmed by C. N. Hawkins (Pic 1957: remark on page 435). Consequently, an additional female present in MNHN does not belong to the type series, despite having identical locality data and Pic's identification label. NARDI (2004) found this name preoccupied by *Anthicus tolanus* var. *scotti* Pic, 1951, and proposed the replacement name *Anthicus yemenita*. He preserved its generic placement, based on examination of type material by D. Telnov (NARDI 2004).

Despite the lack of male specimens, there is no doubt about the new placement of *Anthicus yemenita* in *Microhoria*. The holotype possesses all the important characters, e.g. the arcuate lateral margins of the mesoventrite that has a distinct, nearly completely developed submarginal sulcus, submedian carinae of the mesoventrite are indicated, and the mesepimera have a distinct, longer setose fringe.

### *Microhoria terminata* species-group

**Diagnosis.** Mostly smaller, weakly sclerotized species, always with uniform elytral setation (Figs 145–147, 151–155); quite variable in shape of pronotum and distinctness of its latero-basal setation (Figs 156–159). Mesoventrite with nearly completely bordered lateral margins, always lacking submedian carinae; setose fringe of mesepimera strongly reduced (Fig. 24); submarginal setose impressions of metaventrite and abdominal sternum III weakly developed (mostly indistinct); all tibiae with paired terminal spurs; elytral apices in males distinctly modified, channel of gland forming short tubular process (absent in single species, see Remarks), interior of process with long cuticular projections (Fig. 44). Aedeagus (Figs 93–122): tegmen with narrowed apex, frequently hook-like, sometimes additionally with slender conspicuous projection (Figs 94, 96, 97, and 120) that is unknown in other groups; gonopore free.

**Distribution.** Predominantly an eastern Mediterranean group that is most speciose in Greece and the Middle East (especially Turkey), with a few western Mediterranean species occurring in Italy, Spain, and southern France; nearly absent in North Africa except Egypt; single species known from southern part of Arabian Peninsula (*M. sawda* sp. nov.). Ranging as far east as Nepal and Tibet, e.g. *Microhoria hingstoni* (Blair, 1927).

**Species included** (91 spp.). *Microhoria aguilar* Bonadonna, 1960, *M. akbesiana* (Pic, 1896), *M. anahita* sp. nov., *M. angelinii* (Degiovanni, 2012) comb. nov., *M. angulapex* Koch, 1935, *M. aphaenops* (Pic, 1902), *M. arcuatipes* (Krekich-Strassoldo, 1931), *M. armeniaca* (Pic, 1899) comb.



nov., *M. aspelia* (Truqui, 1855), *M. bacillisternum* sp. nov., *M. basithorax* (Pic, 1941) comb. nov., *M. boyadjeani* (Pic, 1904), *M. breviscula* (Desbrochers des Loges, 1875), *M. caliginosa* (LaFerté-Sénéctère, 1849), *M. caspia* (Desbrochers des Loges, 1875), *M. cerrutii* Bucciarelli, 1976, *M. chakouri* (Pic, 1909), *M. corallicolis* (Reitter, 1889), *M. cyrtopyga* Bonadona, 1952, *M. degener* (Baudi di Selve, 1881), *M. delagrangei* (Pic, 1892), *M. depressa* (LaFerté-Sénéctère, 1849) comb. nov., *M. duplex* (Nardi, 2004) comb. nov., *M. edmondi* (Pic, 1893) comb. nov., *M. emaciata* (Pic, 1896), *M. faceta* Bonadona, 1960, *M. fergana* sp. nov., *M. feroni* Bonadona, 1960, *M. finalis* (Telnov, 2003) comb. nov., *M. fornicata* (Krekich-Strassoldo, 1931), *M. funeraria* (Marseul, 1879), *M. garavuti* sp. nov., *M. gibbipennis* sp. nov., *M. halophila* sp. nov., *M. gorgus* (Truqui, 1855), *M. hazara* sp. nov., *M. heracleana* sp. nov., *M. hindukushica* Telnov, 2010, *M. hingstoni*, *M. humerifer* (Pic, 1902), *M. impavida* sp. nov., *M. informipes* (Krekich-Strassoldo, 1931), *M. inobscura* (Pic, 1908) stat. nov., *M. ionica* (Pic, 1901), *M. iscarotes* (LaFerté-Sénéctère, 1849), *M. kabulensis* sp. nov., *M. kaifensis* (Pic, 1896), *M. kermanica* sp. nov., *M. lafertei* (Truqui, 1855), *M. latipennis* (Pic, 1892), *M. leptostemma* (Kolenati, 1846), *M. leuthneri* (Pic, 1897), *M. lividipes* (Desbrochers des Loges, 1875) comb. nov., *M. loebli* Uhmman, 1989, *M. luristanica* (Pic, 1911) comb. nov., *M. miranda* (Krekich-Strassoldo, 1931), *M. monodi* Bonadona, 1977, *M. nectarina* (Panzer, 1794), *M. nepticula* Bonadona, 1964, *M. nicolasi* (Pic, 1919), *M. oertzeni* (Pic, 1901), *M. ottomana* (LaFerté-Sénéctère, 1849), *M. ovata* (Marseul, 1897), *M. pahlavi* sp. nov., *M. palicari* (Laporte, 1840), *M. paralleliceps* (Reitter, 1890) comb. nov., *M. persica* sp. nov., *M. petraea* (Pic, 1902), *M. pinicola* (Reitter, 1889), *M. plagifer* (Krekich-Strassoldo, 1931), *M. quadraticeps* (Desbrochers des Loges, 1875), *M. raveli* (Pic, 1899), *M. rosti* (Pic, 1906), *M. rubriceps* (Pic, 1896), *M. rufescens* (Pic, 1893), *M. sawda* sp. nov., *M. schmiedeknechti* (Pic, 1899), *M. sidonia* (Truqui, 1855), *M. stettini* (Pic, 1892), *M. strejceki* sp. nov., *M. subcaerulea* (Pic, 1906) comb. nov., *M. sydowi* (Pic, 1936), *M. syrensis* (Pic, 1902), *M. taurica* (Pic, 1904), *M. tenebricosa* (Pic, 1896), *M. terminata* (W. L. E. Schmidt, 1842), *M. truncatipennis* (Pic, 1897) comb. nov., *M. unicolor* (W. L. E. Schmidt, 1842), *M. vespertina* (Rosenhaur, 1856), *M. viridipennis* (Pic, 1899) comb. nov. and *M. winkleri* Telnov, 2004.

**Remarks.** This group holds all *Microhoria* species formerly placed in the subgenus *Platyhoria* and nearly all Asian *Tenuicomus* (CHANDLER et al. 2008, the latter as *Tenuicollis*). One species, *M. cyrtopyga*, lacks the tubular process of the male elytral apices, but displays a different modification – rounded subapical gibbosities. Similar gibbosities are developed in *M. gibbipennis* sp. nov. and are coupled with tubular projections.

Pic (1941) described *Anthicus magnini* var. *basithorax* from Crete. It was treated as *Anthicus basithorax* by CHANDLER et al. (2004, 2008). Its new placement in *Microhoria* is based on examination of the syntypes of *Anthicus magnini* in Pic's collection (MNHN), whose original description is unknown, with this name being therefore regarded as a *nomen nudum* (CHANDLER et al. 2004).

### *Microhoria anahita* Kejval, sp. nov.

(Figs 94, 146)

**Type locality.** Iran, Isfahan Province, 70 km NE of Nain, Anarak env. [33°18'40"N 53°41'54"E].

**Type material.** HOLOTYPE: ♂, 'Iran, Isfahan Prov., 70 km NE of Nain, Anarak env., 5.v.1999, K. Orszulik lgt. [p]' (NMPC). PARATYPES: 19 ♂♂ 24 ♀♀, same data as holotype (ZKDC, DCDC, KOOC, MZLU, NMPC); 5 ♂♂ 2 ♀♀, 'Persia: Kerman. H.E.J. Briggs. B.M.1933-246. [p]' (BMNH); 1 ♂, same label, in addition: 'A. nectarinus v. atriceps Pic det. Dr. R. F. Heberdey [p+h]' (BMNH); 1 ♂, same label, in addition: 'nectarinus v. atriceps Pic [h]' (NHMW).

**Description.** **Male** (holotype). Body length 3.5 mm. Head largely brownish-black, base and neck reddish, pronotum reddish, elytra largely yellowish to pale reddish, with vaguely outlined dark markings (Fig. 146); legs reddish, antennae largely reddish, terminal antennomeres darker, brownish.

Head elongate, 1.3 times as long as wide including eyes, nearly evenly rounded posteriorly; eyes medium-sized, only moderately convex. Surface glossy, minutely, moderately densely punctate; punctures distinctly spaced; setation short, subdecumbent. Antennae slightly enlarged in apical third; antennomeres X 1.4 times as long as wide, XI conspicuously elongate, 3.2 times as long as wide.

Pronotum 1.1 times as long as wide, somewhat unevenly rounded anteriorly, pronotal disc moderately convex, outline in dorsal view with lateral margins nearly straightly narrowing posteriorly. Surface glossy; setation and punctation as on head; latero-basal margins with some longer, more raised setae.

Elytra 1.9 times as long as wide; humeri distinctly protruding; omoplates and postbasal impression slightly indicated; apices modified, channel of gland forming short tubular process at margin. Surface moderately glossy, rather densely punctate; punctation denser and somewhat coarser than on head; setation as on head, erect tactile setae absent.

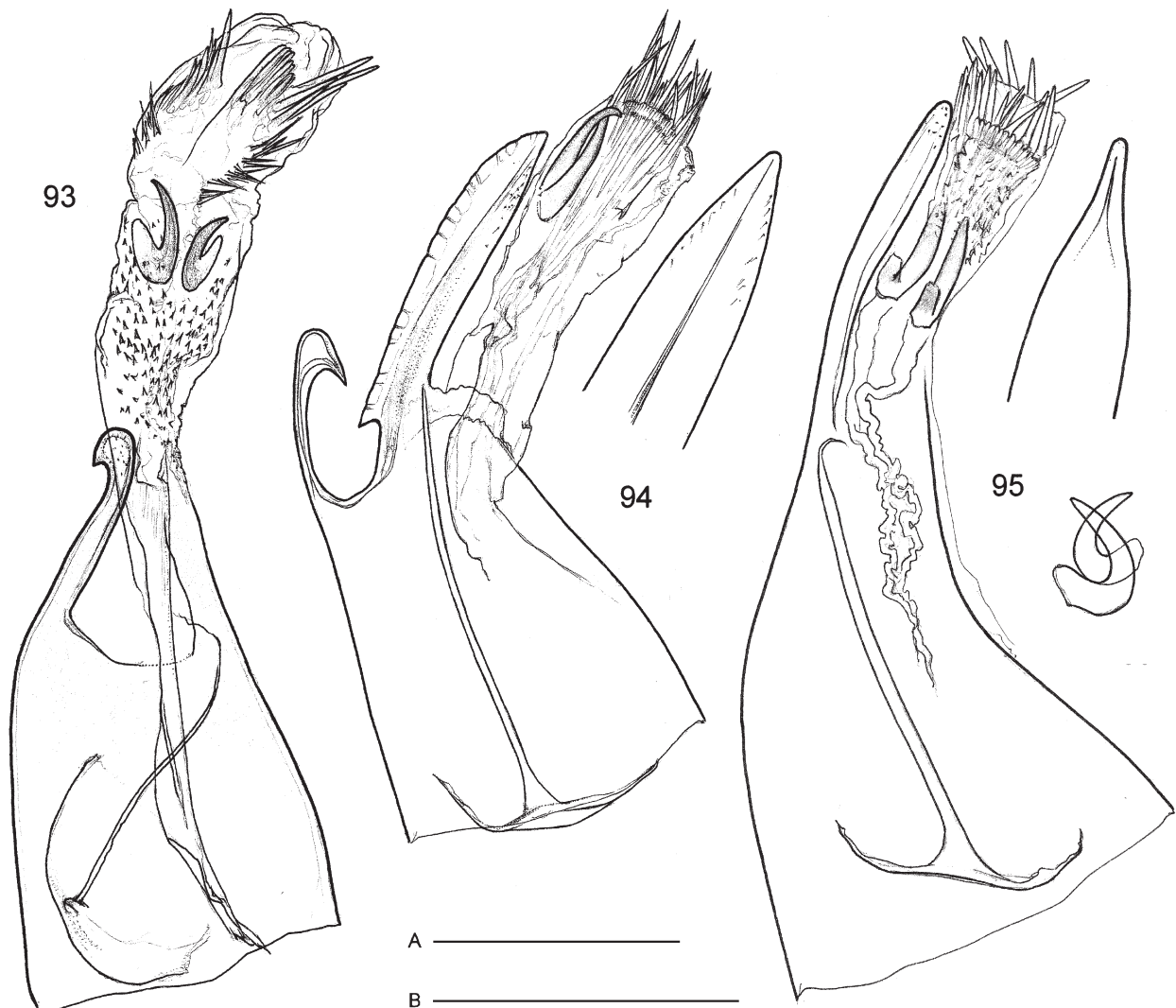
Legs slender, simple; all tibiae with paired terminal spurs.

Abdominal sternum VII slightly produced and emarginate medially; sternum VIII inconspicuous, weakly sclerotized. Aedeagus (Fig. 94): apically narrowed portion of tegmen bearing prominent median carina; endophallic armature with pair of robust, claw-like spines and apical bunch of slender spinules.

**Variation.** Body length (♂♀) 2.6–3.6 mm; head sometimes partly reddish anteriorly on frons; dark marking of elytra varying moderately in extent and prominence (vaguely to rather sharply outlined).

**Female.** Identical with male for most external characters; elytral apices simple; sternum simply rounded apically; tergum VII with shallow apical excavation.

**Differential diagnosis.** *Microhoria anahita* sp. nov. belongs to the *M. terminata* species-group. Externally it can be confused with *M. strejceki* sp. nov., having nearly the same body form and markings of the elytra, but differs clearly by the reddish unicolorous legs, somewhat larger eyes, more elongate and cylindrical terminal antennomeres, the shallowly excavate apex of female tergum VII (simply rounded in the latter species), and mainly by characters of



Figs 93–95. Aedeagus: 93 – *Microhoria terminata* (W. L. E. Schmidt, 1842), lateral view; 94 – *M. anahita* sp. nov., lateral view, and apex of tegmen in dorsal view; 95 – *M. bacillisternum* sp. nov., lateral view, and apex of tegmen plus paired sclerites of endophallus in dorsal view. Scale bars: 0.2 mm – A (Figs 93, 94), B (Fig. 95).

the aedeagus that are quite dissimilar (cf. Figs 94 *versus* 121).

**Etymology.** *Anahita* is the name of the Persian goddess of fertility and water; noun in the nominative case, standing in apposition.

**Distribution.** Iran.

***Microhoria angelinii* (Degiovanni, 2012) comb. nov.**

(Figs 147, 150, 156)

*Tenuicollis angelinii* Degiovanni, 2012: 98, Figs 1–3.

**Type locality.** Turkey, Çankiri Province, Orta, meadows between Saçakbeli Geçidi and Ortabeli Geçidi.

**Type material.** HOLOTYPE: ♂, not examined (ADBC).

**Additional material.** TURKEY: 3 ♀♀, Ankara prov., Şereflikoçhisar, 25 km NW, salty shore of Tuz Gölü Lake, alt. 900 m, 1.vi.1999, S. Benedikt lgt. (ZKDC).

**Remarks.** This species was described from single male specimen, conspicuous in having an extremely elongate head and simple pronotum (Figs 147, 156). It is undoubtedly closely related to *M. paralleiceps* (Reitter, 1890) based on shared similarities, which is known only from

its type locality (Arax River Valley) and probably occurs in northeastern Turkey. It differs from the latter species by the following major characters: head distinctly narrower, with longer, parallel tempora, and shallowly impressed mesally on dorsum (Fig. 156); male sternum VII evenly rounded (angularly produced and emarginate medially for *M. paralleiceps*); female tergum VII with deep apical notch (Fig. 150); apex of tegmen hooked (simple for *M. paralleiceps*).

***Microhoria bacillisternum* Kejval, sp. nov.**

(Figs 91, 95, 151)

**Type locality.** Iran, Qazvin Province, 8 km NE of Ziaran, 36°10'N 50°35'E, alt. 2400 m.

**Type material.** HOLOTYPE: ♂, 'N. Iran, 2400 m 8 km NE Ziaran 10.-16.7.1977 // Loc. no. 400 Exped. Nat. Mus. Praha // *Tenuicomus luristanicus* (Pic) det. G. Uhmman 1986 [p] (NMPC). PARATYPES: 1 ♂, same data as holotype, but lacking third label (NMPC).

**Description.** **Male** (holotype). Body length 2.6 mm. Body dark brown, elytra unicolorous (Fig. 151; legs and antennae dark brown, tibiae and tarsi slightly paler.



Head rather elongate, 1.4 times as long as wide, widely rounded posteriorly, tempora subparallel; eyes medium-sized, moderately convex. Surface moderately glossy, minutely but distinctly punctate and largely shagreened; punctures well-spaced; setation short, appressed to subdecumbent. Antennae moderately enlarged for apical half; antennomeres X 1.2 times, XI 2.4 times as long as wide.

Pronotum about as long as wide, slightly narrower than head including eyes, evenly rounded anteriorly, pronotal disc evenly and moderately convex, outline in dorsal view with lateral margins nearly straightly narrowing posteriorly. Surface moderately glossy, distinctly punctate and shagreened; setation and punctuation as on head, with some very short erect setae.

Elytra 1.7 times as long as wide, somewhat flattened medially in basal half; humeri distinctly protruding; omoplates slightly indicated; apices modified, channel of gland forming short tubular process at margin. Surface moderately glossy, distinctly punctate; punctuation and setation slightly coarser than on head, with scattered short erect setae.

Legs slender, simple; all tibiae with paired terminal spurs.

Abdominal sternum VII produced, truncate to slightly emarginate apically; sternum VIII forming paired sclerites, conspicuously, narrowly produced and rounded apically (Fig. 91). Aedeagus (Fig. 95): tegmen with simple, narrowly rounded apex; endophallic armature with pair of robust, hook-like spines and apical bunch of slender spinules.

**Female.** Unknown.

**Variation.** Head and pronotum more or less glossy, varying in distinctness of microsculpture.

**Differential diagnosis.** *Microhoria bacillisternum* sp. nov. belongs to the *M. terminata* species-group. It can be easily recognized by the combination of an elongate head and its male abdominal characters, especially by the peculiar shape of the paired sclerites of sternum VIII (Fig. 91).

**Etymology.** Composed from the Latin words *bacillum* (rod, stamen) and *sternum*, named in reference to the conspicuous projections of male sternum VIII. Noun in the nominative case, standing in apposition.

**Distribution.** Iran.

### *Microhoria depressa* (LaFerté-Sénéctère, 1849)

**comb. nov.**

(Figs 96, 162)

*Anthicus depressus* LaFerté-Sénéctère, 1849b: 156.

*Anthicus depressus*: LaFerté-Sénéctère (1849c): 255 (repeated description); Pic (1911b): 43 (catalogue); Winkler (1927): 845 (catalogue).

*Tenuicollis depressus*: Chandler et al. (2008): 448 (catalogue, distribution); Telnov & Ghahari (2018): 484 (note).

*Anthicus mollis* Desbrochers des Loges, 1875: 46, **syn. nov.**

*Anthicus mollis*: Pic (1911b): 61 (catalogue).

*Anthicus (Immicrohoria) mollis*: Winkler (1927): 849 (catalogue).

*Microhoria mollis*: Chandler et al. (2008): 441 (catalogue, distribution); Telnov & Ghahari (2018): 483 (note); Telnov (2018a): 271 (record Russia).

**Type locality.** *Anthicus depressus* – Caucasus Mountains ('Caucasus'); *A. mollis* – Southern Russia ('Russie mérid.').

**Type material.** *Anthicus depressus* – LECTOTYPE (herewith designated): ♂, 'Depressus mihi Caucasus. [h; pinned separately]' (MNHN).

*Anthicus mollis* – SYNTYPES (see Remarks): 1 ♀, 'Sarepta [h] // TYPE [p; red label]'; 1 ♀, 'Sarepta Desbr [h] // TYPE [p; red label]' (both NHMW).

**Additional material.** ARMENIA: 8 ♂♂ 6 ♀♀, Kotayk prov., 4 km S of Hatsavan, 23.vi.2004, Putckhov lgt. (ADBC, ZKDC); 1 ♀, Yerevan, 17.vi.–4.vii.1988, O. Hovorka lgt. (ZKDC). AZERBAIJAN: 1 ♂ 2 ♀♀, 90 km N of Baku, Zarat env., 15.vi.1983, V. Kubán lgt. (ZKDC); 1 ♂, Georgia, Tbilisi, Lisie Lake, vi.1957, Dlabola lgt. (NMPC). RUSSIA: 1 ♂, Volgograd ['Sarepta' no date], Becker lgt. (NHMW).

**Diagnosis.** *Microhoria terminata* species-group; small, brownish, subparallel species. Male sternum VII simple; sternum VIII forming paired subtriangular sclerites that are evenly rounded and setose apically; tergum VII and VIII simple; aedeagus (Fig. 96). Female sternum VII simple; tergum VII with deep apical notch (Fig. 162).

**Variation.** Body length (♂♀) 2.3–2.7 mm.

**Distribution.** Azerbaijan, Armenia (new record), Georgia (new record), Southern Russia, Iran.

**Remarks.** LaFerté-Sénéctère (1849b) described *Anthicus depressus* from two specimens provided by M. de Chaudoir. There is a single syntype deposited in his collection (MNHN), as is indicated by the handwritten inventory on the inner side of the respective box, and is selected as the Lectotype.

Jules Desbrochers des Loges was an insect dealer whose Coleoptera collection is scattered (Horn et al. 1990), and type specimens of his Anthicidae species are difficult to recognize. He described *Anthicus mollis* from an unstated number of specimens collected by Alexander Becker in southern Russia (Desbrochers des Loges 1875). The two syntypes examined appear to be newly labelled; at least their 'TYPE' labels are not original, being identical to those used by H. von Krekich-Strassoldo. For these reasons, we refrained from designation of a lectotype. Nevertheless, the specimens originate from southern Russia and agree with the original description in the following important characters: head and pronotum distinctly punctate, head widely rounded to subtruncate posteriorly, elytra flattened, their lateral margins straight and apices subtruncate, and female tergum VII deeply notched apically ('pygidium sillonné longitudinalement'). These are, moreover, distinguishing characters of *M. mollis* that are useful for separation from the externally similar *M. caspia*; the latter was described from material collected by A. Becker at the locality 'Sarepta' (= presently Krasnoarmeyskiy Rayon (district) of Volgograd) in the same region, and it is a well-known species, being represented by numerous topotypic specimens in MNHN (coll. Pic) and NHMW.

The examined specimens of *Anthicus mollis* were found to be identical with those of *A. depressus*, and consequently these species names are newly treated as synonyms.

### *Microhoria edmondi* (Pic, 1893) **comb. nov.**

(Fig. 97)

*Anthicus Edmondi* Pic, 1893: 16.

*Anthicus Edmondi* [sic!]: Pic (1911b): 45 (catalogue); Winkler (1927): 844 (catalogue).

*Tenuicollis edmondi*: Chandler et al. (2008): 448 (catalogue, distribution).

*Anthicus spinosus* Pic, 1912: 42, **syn. nov.**

*Anthicus spinosus*: Winkler (1927): 841 (catalogue).

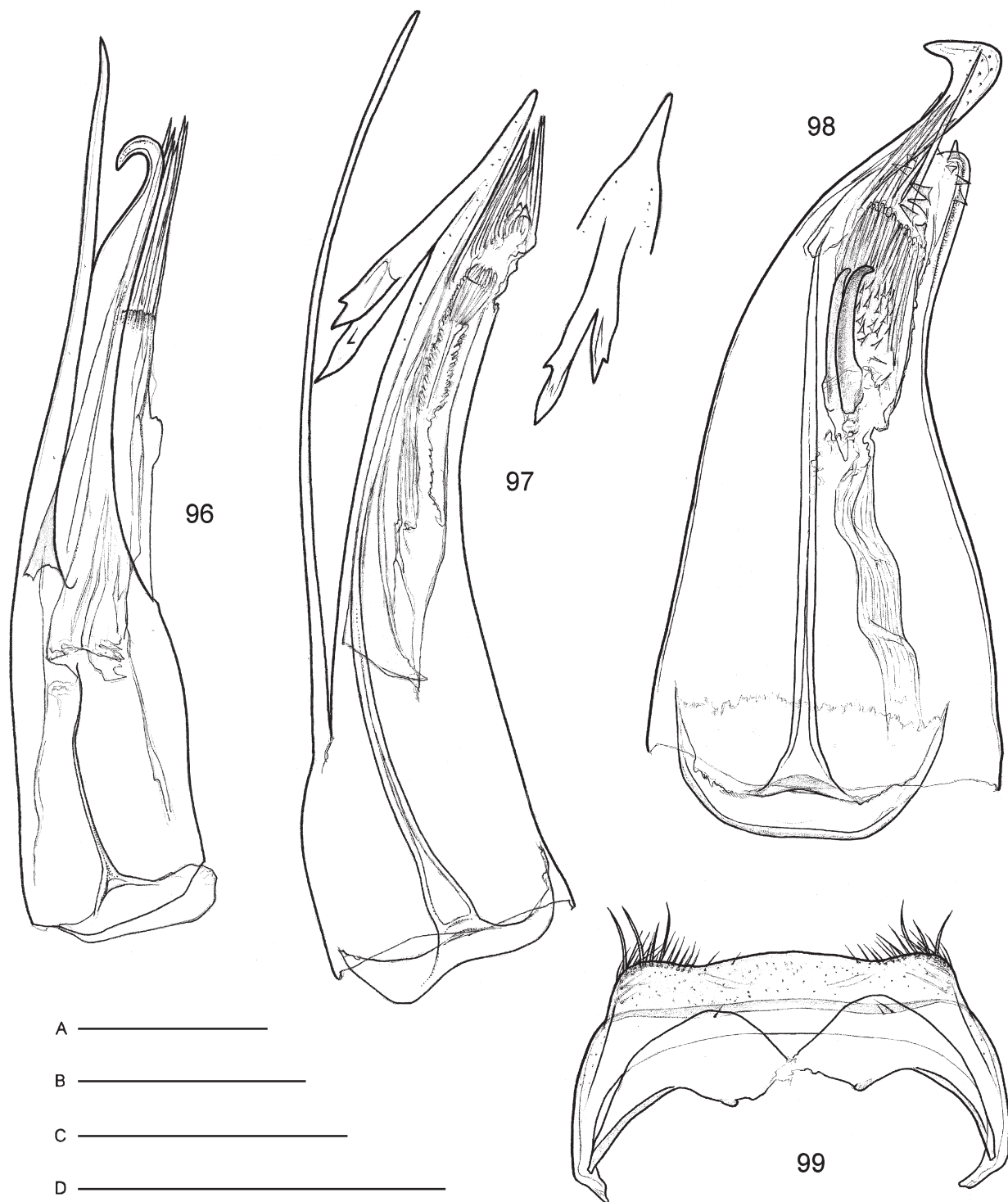
*Omonadus spinosus*: Telnov (2002): 23 (record Afghanistan); Chandler et al. (2008): 445 (catalogue, distribution).

*Clavicollis spinosus*: Telnov (2010): 9 (new combination).

**Type locality.** *Anthicus edmondi* – Uzbekistan, Margelan ('Turkestan-Margelan'); *A. spinosus* – Tajikistan/Uzbekistan, Gissar Range ('Buchara: Hissar').  
**Type material.** *Anthicus edmondi* – LECTOTYPE (herewith designated): ♂, 'Margelan Reitter [p; black frame] // type [h; yellowish label] // Edmundi Pic [h] // TYPE [p; red label]' (coll. Pic, MNHN). PARALECTOTYPES: 3 spec., 'Margelan Reitter [p; black frame] // type [h; yellowish label]' (all coll. Pic, MNHN).

*Anthicus spinosus* – LECTOTYPE (herewith designated): ♂, 'Hissar, Boch. Coll. Hauser. [p] // TYPE [p; red label] // spinosus Pic type [h] // coll. Heberdey [p] // spinosus Pic [h] // CLAVICOLLIS spinosus (Pic) det. D. Telnov, 2008 [p]' (NHMW).

**Additional material.** **KIRGYZSTAN:** 4 ♂♂ 3 ♀♀, Osh district, 15 km SW of Osh, 40°23'N 72°46'E, dry steppe hill, 1150 m, 26.vi.1996 [no collector] (ZSMC, ZKDC). **TAJIKISTAN:** 10 ♂♂ 13 ♀♀, Iskanderkul Lake, 2200 m, 22.vi.2012, K. Orszulik lgt. (ZKDC); 3 ♂♂ 1 ♀♀, Hissar Mts, Yavroz, pr. Dushanbe, 27.vi.1983, B. Malec lgt. (ZKDC); 13 ♂♂ 4 ♀♀, N of Dushanbe, Kondara-Varzob, 24.vi.1983, B. Malec lgt. (ZKDC); 2 ♂♂, Babatag Mts, 30.iv.1977, S. Bílý lgt. (NMPC). **UZBEKISTAN:** 1 ♂, 'Margelan. Reitter [p]' (ZSMC); 1 ♂, Zeravshan, Kara Tepe, 1000 m, 1.–2.vi.1959, J. Dlabola lgt. (NMPC); 5 ♂♂ 6 ♀♀, Zeravshan Mts, 70 km S of Samarkand, Takhtakarach pass, 1600 m, 30.vi.–2.vii.1983, V. Kubáň leg. (ZKDC).



Figs 96–99. 96–98 – Aedeagus: 96 – *M. depressa* (LaFerté-Sénéctère, 1849), Azerbaijan, Zarat (ZKDC), lateral view; 97 – *M. edmondi* (Pic, 1893), syntype, lateral view; 98 – *M. fergana* sp. nov., lateral view. 99 – *M. fergana* sp. nov., male abdominal segment VIII in ventral view. Scale bars: A – (Fig. 99), B (Figs 96, 97), C (Fig. 98).



**Diagnosis.** *Microhoria terminata* species-group; small, slender species, typically brightly coloured, with paler markings on elytra. Male sternum VII moderate produced and evenly rounded apically; sternum VIII forming rounded sclerites; tergum VII and VIII simple; aedeagus (Fig. 97). Female sternum VII moderately produced and angled apically; tergum VII distinctly emarginate apically.

**Variation.** Body length ( $\sigma^7$ ) 2.2–3.1 mm. Rather variable in colouration; the specimens from Takhtakarach Pass are yellowish to reddish, with vague brown marking on elytra; the specimens from Iskanderkul Lake and Kondara-Varzob are extremely dark, with black head, and largely brownish-black elytra (unicolorous or with subhumeral and/or subapical paler spots).

**Distribution.** Afghanistan, Kirgyzstan, Tajikistan, Uzbekistan.

**Remarks.** PIC (1893, 1912) described both *Anthicus edmondi* and *A. spinosus* from an unstated number of specimens, and gave the following depositories: *A. edmondi* – E. Reitter and M. Pic collections; *A. spinosus* – F. Hauser collection in NHMW. TELNOV (2002) tentatively placed *A. spinosus* in *Omonadus* Mulsant et Rey, 1866, but after examination of the type material, he placed it in *Clavicollis* (TELNOV 2012).

Having examined type specimens of both *Anthicus edmondi* and *A. spinosus*, plus numerous additional specimens, using male characters we found no substantial differences. Consequently, the latter species is placed as a junior synonym of *A. edmondi*, which is undoubtedly a member of the *Microhoria terminata* species-group since it has two terminal metatibial spurs, and shares the characteristic modification of the male elytral apices.

***Microhoria fergana* Kejval, sp. nov.**

(Figs 98, 99)

**Type locality.** Kyrgyzstan, Osh District, 15 km SW of Osh, 40°23'N 72°46'E, 1150 m.

**Type material.** HOLOTYPE:  $\sigma^7$ , 'Kirgisistan: Oshaskaya, Distr. Osh, trockene Steppenbügel, 15 km SW Osh, 40°23'N 72°46'E, 1150 m, 26.VI.1996 [p] // 96/12 [p] // *Microhoria mollis* (Desbrochers) det. G. Uhmman 1997 [p+h]' (ZSMC). PARATYPES: 1  $\sigma^7$ , same data as holotype, lacking 2<sup>nd</sup> label (ZSMC).

**Description. Male** (holotype). Body length 2.2 mm. Body brown, elytra unicolorous; legs brown, tibiae moderately paler; antennae brown, slightly darker distally.

Head 1.1 times as long as wide, nearly evenly rounded posteriorly; eyes small, distinctly convex. Surface moderately glossy, minutely punctate and slightly shagreened; punctures distinctly spaced; setation short, subdecumbent, few short erect setae posteriorly. Antennae only moderately enlarged for apical third; antennomeres X 1.6 times, XI 4.0 times as long as wide.

Pronotum 1.1 times as long as wide, distinctly narrower than head including eyes, evenly rounded anteriorly, pronotal disc evenly and moderately convex, outline in dorsal view with lateral margins slightly impressed posteriorly. Surface moderately glossy, punctate, slightly shagreened; punctation and setation as on head, with some very short erect setae.

Elytra 1.6 times as long as wide, subparallel, somewhat flattened; humeri distinctly protruding; apices modified, channel of gland forming short tubular process at apical margin. Surface moderately glossy, densely punctate; punctation and setation slightly coarser than on head, with scattered short erect setae.

Legs simple; all tibiae with paired terminal spurs.

Abdominal sternum VII simple; tergum VII simple; tergum VIII with distinct, laterally angled flange posteriorly (Fig. 99); sternum VIII forming paired subtriangular sclerites that are rounded apically. Aedeagus (Fig. 98): tegmen narrowed apically, distinctly hooked in lateral view; endophallic armature with pair of short, robust, moderately curved sclerites and numerous slender spines.

**Female.** Identical with male for most external characters; elytral apices simple; sternum VII simple; tergum VII simple, evenly rounded apically.

**Differential diagnosis.** *Microhoria fergana* sp. nov. belongs to the *M. terminata* species-group. It may resemble *M. nicolasi* from Turkmenistan ('Transcaspiä'), but differs by the widely flanged and somewhat sinuous posterior margin of male tergum VII, and by characters of the aedeagus (more slender and simply hooked apex of tegmen, numerous slender spinules in endophallus).

**Etymology.** Named after the Fergana valley in Kyrgyzstan; noun in the nominative case, standing in apposition.

**Distribution.** Kyrgyzstan.

***Microhoria garavuti* Kejval, sp. nov.**

(Figs 5, 100, 152)

**Type locality.** Tajikistan, Aruk-Tau Mts, Garavuti.

**Type material.** HOLOTYPE:  $\sigma^7$ , 'USSR Tadžikistan Aruk-Tau 20.4.78 / Garavuti/ Sv. Bilý lgt. [p]' (NMPC). PARATYPES: 2  $\sigma^7$ , same data as holotype (NMPC); 7  $\sigma^7$ , 'USSR-Tadžikistan 21.4.1978 Aruk-Tau (cca 600 m) Gara-Vuti env. (pr. Šaartuz) J. Strejček lgt. [p]' (ZKDC).

**Description. Male** (holotype). Body length 3.6 mm. Body brown, with slight greenish reflection, elytra unicolorous (Fig. 152); femora brownish, tibiae and tarsi yellowish-brown, antennae reddish-brown, terminal antennomeres darker.

Head elongate, 1.3 times as long as wide, somewhat widely rounded posteriorly; eyes medium-sized, moderately convex. Surface moderately glossy, minutely but distinctly punctate and slightly shagreened; punctures distinctly spaced; setation short, subdecumbent. Antennae moderately enlarged for apical third; antennomeres X 1.2 times, XI 2.5 times as long as wide.

Pronotum 1.1 times as long as wide, slightly narrower than head including eyes, evenly rounded anteriorly, pronotal disc evenly and moderately convex, outline in dorsal view with lateral margins nearly straightly narrowing posteriorly. Surface moderately glossy, punctate, slightly shagreened; punctation and setation as on head, with some very short erect setae.

Elytra 1.8 times as long as wide, subparallel, somewhat flattened medially in basal half; humeri distinctly protruding; apices modified, somewhat bulging, channel of gland forming short tubular process. Surface moderately glossy, densely punctate; punctation and setation slightly coarser than on head, with scattered short erect setae.

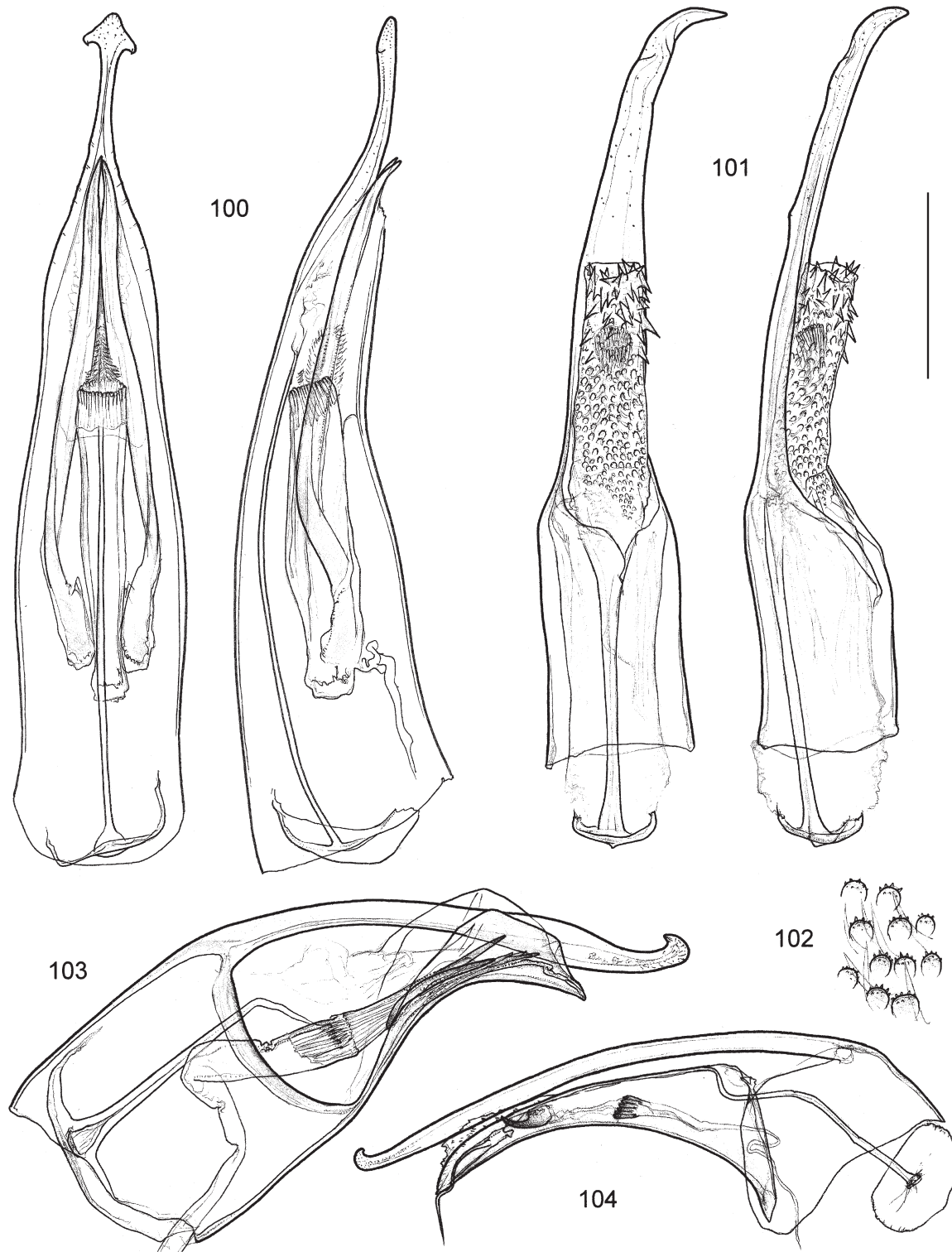
Legs simple; all tibiae with paired terminal spurs.

Abdominal sternum VII slightly produced and subtruncate apically; sternum VIII forming paired subtriangular sclerites, rounded and distinctly setose apically. Aedeagus (Figs 5, 100): tegmen strongly elongate and with widened, triangular apex; endophallus armature with a pair of long slender, apically pointed sclerites.

**Female.** Unknown.

**Variation.** Body length (♂) 3.2–3.6 mm; body brown to brownish-black, antennae may be largely dark brown; surface microsculpture varying in prominence.

**Differential diagnosis.** *Microhoria garavuti* sp. nov. belongs to the *M. terminata* species-group. It displays nearly the same body shape and a similar apex of the tegmen as does the sympatric *M. strejceki* sp. nov., but differs by the generally darker colouration (unicolorous elytra), more



Figs 100–104. 100 – *Microhoria garavuti* sp. nov., aedeagus in ventral (left) and lateral (right) view; 101 – *M. hazara* sp. nov., aedeagus in ventral (left) and lateral (right) view; 102 – same, detail of structure of endophallus; 103 – *M. halophila* sp. nov. aedeagus in lateral view; 104 – *M. gibbipennis* sp. nov., aedeagus in lateral view. Scale bar: 0.2 mm (except 102).



elongate apical part of the tegmen, and by the armature of endophallus (conspicuous paired sclerites, lack of apical bunch of spinules, cf. Figs 100 *versus* 121).

**Etymology.** Named after the type locality; noun in the nominative case, standing in apposition.

**Distribution.** Tajikistan.

***Microhoria gibbipennis* Kejval, sp. nov.**

(Figs 104, 149, 153, 158, 163)

**Type locality.** Turkey, NW of Silifke, Göksu River Canyon.

**Type material.** HOLOTYPE: ♂, 'Turkey SC, NW of Silifke, Göksu Canyon, 25.iv.2015, M. Snížek lgt. [p]' (NMPC). PARATYPES: 1 ♀, same data as holotype (ZKDC).

**Description. Male** (holotype). Body length 2.6 mm. Body brownish-black, base of pronotum paler, reddish, elytra unicolorous (Fig. 153); legs dark brown; antennae reddish in basal half, gradually darkening to brownish-black in apical half.

Head 1.2 times as long as wide, evenly rounded posteriorly; eyes small, moderately convex. Surface slightly glossy, densely punctate and shagreened; punctures narrowly but distinctly spaced; setation short, subdecumbent. Antennae comparatively robust, slightly enlarged in apical third; antennomeres X about as long as wide, XI 2.3 times as long as wide.

Pronotum 1.2 times as long as wide, distinctly narrower than head including eyes, narrowly rounded anteriorly, slightly angled laterally at widest point and strongly narrowed posteriorly in dorsal view (Fig. 158), pronotal disc rather convex. Surface moderately glossy, minutely punctate and very slightly shagreened; setation as on head.

Elytra 1.4 times as long as wide, convex, widely rounded to subtruncate posteriorly; humeri absent; apices conspicuously modified, with prominent, rounded subapical gibbosity, channel of gland forming short tubular process (Fig. 149). Surface moderately glossy, densely punctate; punctuation shallower than on head; setation short, subdecumbent.

Legs simple; all tibiae with paired terminal spurs.

Abdominal sternum VII with distinct apical notch; sternum VIII forming paired subtriangular sclerites that are rather rounded posteriorly. Aedeagus (Fig. 104): apical portion of tegmen slender, with moderately hooked apex; endophallic armature with pair of short, basally widened, hook-like spines and some long, delicate, sinuous spinules.

**Female.** Identical with male for most external characters; elytral apices simple; sternum VII simple; tergum VII subtriangular, with conspicuous apical notch/cavity, notch with serrate inner margins (Fig. 163).

**Variation.** Body length (♂♀) 2.6–2.9 mm.

**Differential diagnosis.** *Microhoria gibbipennis* sp. nov. belongs to the *M. terminata* species-group. Externally it resembles *M. taurica* and *M. inobscura*, but differs by the wider, evenly rounded head base, and by the presence of subapical gibbosities of the male elytra. The male abdominal characters and the aedeagus seem to be more similar to that of *M. inobscura* in having a simply emarginate/notched sternum VII and a sinuous shape of the tegmen, but differs by the armature of endophallus, which is comprised of minute paired hook-like sclerites and rather long delicate spines.

Females can be easily distinguished by the conspicuous apical cavity of tergum VII (simple in *M. inobscura*).

**Etymology.** Composed from the Latin *gibber* (gibbous) and *penna* (wing); referring to the prominent subapical gibbosities of the elytra in males; adjective.

**Distribution.** Turkey.

***Microhoria halophila* Kejval, sp. nov.**

(Fig. 103)

**Type locality.** Turkey, NW of Tuz Gölü Lake, Kulu env..

**Type material.** HOLOTYPE: ♂, 'TURKEY centr., Tuz Gölü, Kulu, 29.v.1996. M. Snížek lgt. [p]' (NMPC). PARATYPES: 4 ♂♂ 2 ♀♀, same data as holotype (ZKDC); 1 ♂, 'TURKEY centr., Kulu env., 14.v.2002, J. Hlášek lgt. [p]' (ZKDC).

**Description. Male** (holotype). Body length 3.1 mm. Body black, basal margin of pronotum and elytra with brownish tinge; legs dark brown, tibiae paler, reddish-brown; antennae black, unicolorous.

Head 1.2 times as long as wide, widely rounded posteriorly; eyes small, moderately convex. Surface moderately glossy, distinctly and rather densely punctate; punctures distinctly spaced; setation short, subdecumbent. Antennae slightly enlarged for apical third; antennomeres X 1.1 times, XI 2.5 times as long as wide.

Pronotum 1.1 times as long as wide, robust, slightly narrower than head including eyes, evenly rounded anteriorly, pronotal disc evenly convex, outline in dorsal view with lateral margins moderately impressed posteriorly. Surface moderately glossy, distinctly punctate; punctuation and setation as on head (punctures at most slightly denser).

Elytra 1.6 times as long as wide, moderately convex, subtruncate posteriorly; humeri absent; apices modified, channel of gland forming short tubular process at apical margin. Surface moderately glossy, densely punctate; punctuation shallower than on head; setation short, subdecumbent; with scattered short, suberect tactile setae.

Legs simple; all tibiae with paired terminal spurs.

Abdominal sternum VII simple or at most very slightly emarginate medially; sternum VIII forming paired subtriangular sclerites that are rather rounded posteriorly. Aedeagus (Fig. 103): narrow apical portion of tegmen moderately widened subapically and hooked apically; endophallic armature with two robust and about ten slender, simple, moderately long, straight spines.

**Female.** Identical with male for most external characters; elytral apices simple; sternum VII distinctly emarginate apically; tergum VII truncate apically.

**Variation.** Body length (♂♀) 2.8–3.1 mm.

**Differential diagnosis.** *Microhoria halophila* sp. nov. belongs to the *M. terminata* species-group. It can be distinguished from all apterous/brachypterous species distributed in Anatolia by its robust appearance, dark colouration (entirely unicolorous black), and rather coarse punctuation. Its aedeagus resembles that of *M. inobscura* stat. nov. (see Figs 103, 109), but the apical hook of the tegmen is more prominent and the endophallic armature is quite different.

**Etymology.** From the Latin *halophila* (halophilous); referring to its distribution near Tuz Gölü Salt Lake; adjective.

**Distribution.** Turkey.

***Microhoria hazara* Kejval, sp. nov.**

(Figs 101, 102)

**Type locality.** Afghanistan, 170 km W of Kabul, Rabodou.**Type material.** HOLOTYPE: ♂, 'Afghanistan K. Lindberg [p]' // Rabodou 170 km W Kaboul No A 1100. 23.7.1962. [p] // *Microhoria nepticula* Bonadona det. G. Uhmman 1984 [p+h]' (ZSMC). PARATYPES: 2 ♀♀, same data as holotype (MZLU); 2 ♂♂, 'Afghanistan K. Lindberg [p]' // Mandigak 200 km W Kaboul No A 1101. 23.7.1962. [p] // *Microhoria nepticula* Bonadona det. G. Uhmman 1984 [p+h]' (MZLU, ZKDC).**Description. Male** (holotype). Body length 3.3 mm. Head black, pronotum reddish; elytra yellowish, with brownish base, transverse band at midlength, with apical spot (band connected with basal spot along lateral margins); abdomen largely dark, terminal segments VII, VIII yellowish; legs brownish, tibiae paler; antennae brownish, darkened over apical third.

Head elongate, 1.1 times as long as wide, nearly evenly rounded posteriorly; eyes small, moderately convex. Surface moderately glossy, rather distinctly and densely punctate, slightly shagreened anteriorly; punctures narrowly but distinctly spaced; setation short, subdecumbent. Antennae moderately enlarged for apical third; antennomeres X 1.25 times, XI 2.4 times as long as wide.

Pronotum 1.2 times as long as wide, moderately narrower than head including eyes, evenly rounded anteriorly, pronotal disc moderately convex, outline in dorsal view with lateral margins moderately impressed posteriorly. Surface moderately glossy, distinctly punctate; punctation and setation as on head, punctures slightly shallower.

Elytra 1.7 times as long as wide, moderately widening posteriorly, somewhat flattened medially in basal half; humeri distinctly protruding; apices modified, channel of gland forming short tubular process at apical margin. Surface moderately glossy, densely punctate; punctation shallower than on head; setation short, subdecumbent, with scattered short erect setae.

Legs simple; all tibiae with paired terminal spurs.

Abdominal sternum VII moderately produced and evenly rounded apically; sternum VIII forming paired subtriangular sclerites, bearing several longer setae apically. Aedeagus (Figs 101, 102): tegmen with narrow apical portion strongly elongate, asymmetrically curved and somewhat uneven; endophallic armature with numerous tooth-like spines and peculiar spinulose scales (Fig. 102).

**Female.** Identical with male for most external characters; elytral apices simple; sternum VII simple; tergum VII subtruncate apically.**Variation.** Body length (♂♀) 2.8–3.6 mm.**Differential diagnosis.** *Microhoria hazara* sp. nov. belongs to the *M. terminata* species-group. It differs from all Central Asian species that have patterned elytra by the strongly elongate and simple apical part of the tegmen, and the minute sclerotized structures of the endophallus (lacking larger longitudinal sclerites).**Etymology.** Named after the Hazara tribe, whose members inhabit central Afghanistan (westwards from Kabul); noun in the nominative case, standing in apposition.**Distribution.** Afghanistan.***Microhoria heracleana* Kejval, sp. nov.**

(Figs 105–107, 154)

**Type locality.** Greece, Crete, Heraklion Prefecture, NE of Matala, Komos (camping), 35°00'33.04"N 24°46'01.02"E, alt. 92 m.**Type material.** HOLOTYPE: ♂: 'GREECE, Crete Iraklion Pref. Komos (camping) NE Matala, 12.v.2005; 92 m N 35 00 33.04 E 024 46 01.02; P. Chvojka leg. [p]' (NMPC). PARATYPES: 1 ♀, same data as holotype (NMPC); 5 ♂♂ 3 ♀♀, 'CRETE m., 30.iv.2013 Kalamaki env., sandy coast, 0 m a.s.l., S. Benedikt lgt. [p]' (ZKDC, SBPC); 3 ♂♂ 5 ♀♀, 'GRECIA, Creta Sud, Kalamaki, VII.2013, leg. A. Fancello' (ADBC); 3 ♂♂ 1 ♀, 'Greece-Crete Agios Pavlos 23.5.2007 lgt. O. Konvička [p]' (ZKDC); 2 ♂♂, 'I. Jeniš lgt. Mirtos Kreta 3.6.1990 [p]' (ZKDC); 1 ♂, 'Graecia-Creta M y r t o s 2.–4.vi.1990 ing. Kudrna lgt. [p]' (ZKDC); 1 ♀, 'CRETE: 12.6.1992 MATALA Iraklio pref. J. Batelka lgt. [p]' (ZKDC); 2 ♀♀, 'Creta Biró [p]' // Herakleion 1906.VI. [p/h]' (NHMW); 4 ♂♂ 2 ♀♀, 'Creta Biró [p]' // Herakleion 1906.VI. [p/h] // *Microhoria nectarina* (Panz.) det. G. Uhmman 1983 [p/h]' (HNHM, DCDC); 1 ♀, same data, except: 'Herakleion 1906. IV. [p]' (HNHM); 1 ♂, 'Kreta, Iraklion, 2.8.58 Eckerlein leg. [p]' (NHMW); 1 ♂, 'Kreta, Tympaki, 29.-31.7.58, Eckerlein lgt.' (NHMW); 1 ♀, 'Gazi, Creta Mařan et Štěp. 1934. Coll. Bartoň [p]' (NMPC); 1 ♂, 'Kreta [h]' // *Microhoria nectarina* (Panz.) det. G. Uhmman 1983 [p/h]' (HNHM); 2 ♂♂, 'GRC. CRETE N, 4 km W Heraklion, Stomio, pláž 35°20'18"N, 25°04'15"E, 23.VI.2016 leg. David Frank [p; pláž = beach]' (ZKDC, DFPC). 2 ♂♂ 1 ♀, 'CRETA: Vai (spiaggia) 03.VII.2010 (su fiori di Timo) leg. M. Romano' (ADBC).**Description. Male** (holotype). Body length 4.0 mm. Head brownish-black, mouthparts dark reddish; pronotum dark reddish, somewhat darkened antero-laterally; elytra yellowish, with extensive brownish-black markings (Fig. 154); legs and antennae reddish, distal antennomeres somewhat darker.

Head 1.3 times as long as wide including eyes, moderately widely rounded posteriorly in dorsal view; tempora slightly narrowing posteriorly, posterior temporal angles indistinct. Eyes large, moderately convex. Surface glossy, distinctly punctate; punctures distinctly separate. Setation short, appressed to subdecumbent, with few short erect setae. Antennae only moderately enlarged over distal half; antennomeres X 1.2 times, XI nearly 2.4 times as long as wide.

Pronotum 1.1 times as long as wide, slightly narrower than head including eyes, nearly evenly rounded anteriorly, narrowed and slightly impressed postero-laterally in dorsal view; pronotal disc evenly and moderately convex. Surface glossy, distinctly punctate, similar to those on head. Setation as on head, with scattered, short erect setae, and some longer setae laterally at base.

Elytra 1.7 times as long as wide; humeri well-developed, postbasal impression indistinct; apices modified, channel of gland forming short tubular process at apical margin. Surface moderately glossy, densely punctate; punctation as on head, setation similar, subdecumbent, with sparsely scattered, short erect setae.

Legs simple.

Abdominal sternum VII simple. Tergum VII simple. Sternum VIII forming paired sclerites that are simply rounded postero-medially; tergum VIII simple. Aedeagus (Figs 105–107): tegmen strongly hook-like and curved apically; endophallic armature with two pairs of robust spines (shorter curved, and longer straight).

**Female.** Identical with male for most external characters; elytral apices simple; sternum VII simple; tergum VII



subtriangular, shallowly excavate apically.

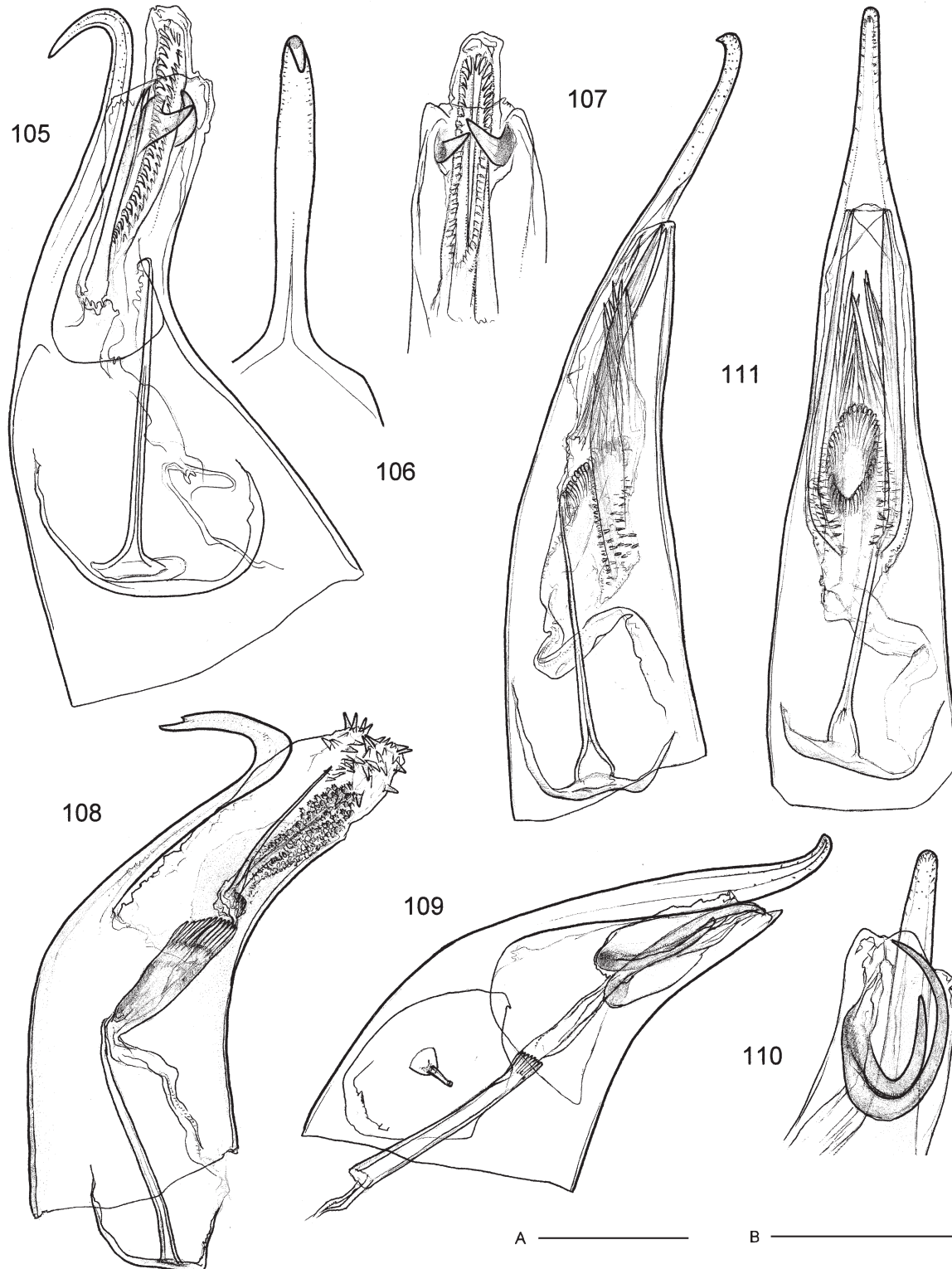
**Variation.** Body length ( $\delta/\eta$ ) 3.8–4.5 mm; head 1.3–1.4 times as long as wide.

**Differential diagnosis.** *Microhoria heracleana* sp. nov. belongs to the *M. terminata* species-group. It is undoubtedly very close to *M. nectarina*, differing by its more elongate

head, and mainly by the narrow and strongly hooked apical part of the tegmen. For a habitus figure and male characters of the latter species see KEJVAL (2018).

**Etymology.** Named after Heracles, a divine hero in Greek mythology; adjective.

**Distribution.** Greece (Crete).



Figs 105–111. 105 – *Microhoria heracleana* sp. nov., aedeagus in lateral view; 106 – same, apex of tegmen in dorsal view; 107 – same, apex of everted endophallus, ventral view; 108 – *M. impavida* sp. nov., aedeagus in lateral view; 109 – *M. inobscura* (Pic, 1908), stat nov., aedeagus in lateral view; 110 – same, apical part in ventral view; 111 – *M. kabulensis* sp. nov., aedeagus in lateral (left) and ventral (right) view. Scale bars: 0.2 mm – A (Fig. 111), B (Figs 105–109).

***Microhoria impavida* Kejval, sp. nov.**

(Fig. 108)

**Type locality.** Turkey, Balıkesir Province, Susurluk env.**Type material.** HOLOTYPE: ♂, 'TURKEY occ., Susurluk env., 27.v.1996, P. Kresl lgt. [p]' (NMPC). PARATYPES: 1 ♂ 6 ♀♀, same data as holotype (ZKDC).**Description. Male** (holotype). Body length 2.5 mm. Head and pronotum black, elytra brownish-black; legs brown, tibiae slightly paler; antennae brownish-black.

Head 1.2 times as long as wide, widely rounded posteriorly; eyes small, only moderately convex. Surface glossy, densely, rather coarsely punctate; punctures distinctly spaced; setation short, subdecumbent. Antennae slightly enlarged for apical third; antennomeres X 1.1 times, XI 2.4 times as long as wide.

Pronotum 1.1 times as long as wide, narrower than head including eyes, rounded anteriorly, distinctly narrowed posteriorly in dorsal view. Surface of disc glossy, distinctly punctate, punctures similar to those on head; setation as on head, rather evenly spaced and short.

Elytra 1.7 times as long as wide, subparallel, rounded apically; humeri well-developed; apices modified, channel of gland forming short tubular process at apical margin. Surface moderately glossy, densely punctate; punctures more delicate than those on head, distinctly spaced; setation as on head, short, subdecumbent.

Legs simple, only metatibia slightly narrowed in terminal part (impressed subapically on outer side); all tibiae with paired terminal spurs.

Abdominal sternum VII shallowly emarginate apically; sternum VIII forming paired subtriangular sclerites. Aedeagus (Fig. 108): apical portion of tegmen slender, conspicuously hooked, with slight subapical tooth; endophallic armature with pair of longer straight spinules, numerous small, tooth-like spinules, and spinulose scales (similar to those in Fig. 102).

**Female.** Identical with male for most external characters; elytral apices simple; sternum VII simple; tergum VII subtriangular, with shallow apical excavation.**Variation.** Body length (♂♀) 2.5–3.0 mm.**Differential diagnosis.** *Microhoria impavida* sp. nov. belongs to the *M. terminata* species-group. Externally it slightly resembles *M. halophila* sp. nov., but differs by the more slender body, prominent elytral humeri, the excavate apex of female tergum VII, and by characters of aedeagus, which is substantially different both in shape of the tegmen and structure of the endophallus (cf. Figs 108 versus 103). **Etymology.** From the Latin *impavidus* (intrepid); named in reference to the shape of the tegmen, which is armed with robust hook; adjective.**Distribution.** Turkey.***Microhoria inobscura* (Pic, 1908) stat. and comb. nov.**

(Figs 109, 110)

*Anthicus tauricus* var. *inobscura* Pic, 1908: 66.*Anthicus tauricus* var. *inobscurus*: Pic (1911b): 76 (catalogue, distribution).*Anthicus tauricus* a. *inobscurus*: WINKLER (1927): 849 (catalogue).**Type locality.** Turkey, Taurus Mts, Saimbeyli env. (see Remarks).**Type material.** SYNTYPES: 3 ♂♂ 1 ♀, 'Hadjin Dagħ taurus (1908) [h] // type [h] // tauricus v. inobscura Pic [h]' (coll. Pic, MNHN).**Additional material.** TURKEY: MERSIN PROVINCE: 13 ♂♂ 2 ♀♀, Arslanköy, 1650–1700 m, 22.–23.v.2005, K. Orszulik lgt. (ZKDC); 25 ♂♂ 2 ♀♀, same data, except: Z. Malinka lgt. (ZKDC); 1 ♂, Camliyaya, 29.vi.–3.vii.1997, F. Kantner lgt. (ZKDC); 2 ♂♂, Erdemli, 25 km NW, 900 m, S. Kadlec lgt. (ZKDC); 10 ♂♂ 7 ♀♀, Güzeloluk, 1200–1400 m, 11.–12.vi.1996, M. Knížek lgt. (ZKDC); 8 ♂♂ 7 ♀♀, same data, except: P. Zahradník lgt. (ZKDC); 1 ♂, Namrun, 1200 m, 30.v.–10.vi.1968, C. Holzschuh lgt. (ZKDC); 1 ♂, same locality, 7.–13.vii.1992, D. Hauck lgt. (ZKDC).**Diagnosis.** *Microhoria terminata* species-group; minute, apterous, at least partly reddish species. Male sternum VII moderately emarginate apically; sternum VIII forming paired subtriangular sclerites that are rounded apically, narrowly touching/connected medially; tergum VII and VIII simple. Aedeagus (Figs 109, 110): apical portion of tegmen moderately widened and curved, endophallic armature with pair of long and strongly curved, comparatively robust spines. Female sternum VII simple; tergum VII simple.**Variation.** Body length (♂♀) 1.9–2.5 mm. Body mostly with reddish pronotum and darker, brownish to brownish-black head and elytra; sometimes largely reddish coloured.**Distribution.** Turkey.**Remarks.** PIC (1904, 1908) described both *Anthicus tauricus* and *A. tauricus* v. nov. *inobscura* from the Taurus Mountains in Turkey; the former species was described from a single specimen, the latter from an unstated number of specimens ('plusieurs exemplaires'). The latter taxon was treated as an aberration by WINKLER (1927), and thus placed as synonym of *Microhoria taurica* in the last Palaearctic catalogue (CHANDLER et al. 2008). However, they are here treated as separate species. Based on photographs provided by D. Telnov, the holotype of *M. taurica* differs as follows: male sternite VII rather deeply emarginate apically, with lateral sides of emargination moderately lobed, apical portion of tegmen straight, slender; paired endophallic spines minute, shaped similarly to those in Fig. 104.The syntypes of *M. inobscura* bear the locality data 'Hadjin Dagħ', but there is no Mount Hadjin in the Taurus Mountains. The word 'Hadjin' refers most probably to the mountains around Saimbeyli village (formerly Hadjin) in Adana Province (A. Ö. Koçak, pers. comm.).***Microhoria kabulensis* Kejval, sp. nov.**

(Fig. 111)

**Type locality.** Afghanistan, Kabul env., alt. 1740 m.**Type material.** HOLOTYPE: ♂, 'J. Klapperich Umgeb. v. Kabul 1740 m, 14.5.52 O. Afghanistan [p]' (NMPC).**Description. Male** (holotype). Body length 4.2 mm. Head black, pronotum dark reddish, elytra yellowish, with brownish-black base, apex and larger paired spots at about midlength; abdomen dark brown with distinctly paler, yellowish terminal segments VII and VIII; antennae and legs reddish.

Head rather wide, at most 1.2 times as long as wide, unevenly rounded posteriorly; eyes small, moderately convex. Surface moderately glossy, distinctly punctate; punctures distinctly spaced; setation short, subdecumbent. Antennae moderately enlarged in apical half; antennomeres X 1.1 times, XI 2.8 times as long as wide.



Pronotum about as long as wide, as wide as head including eyes, somewhat widely rounded anteriorly, pronotal disc evenly and moderately convex, outline in dorsal view with lateral margins nearly straightly narrowing posteriorly. Surface moderately glossy; punctation and setation as on head, with few short and inconspicuous erect setae.

Elytra 1.7 times as long as wide, somewhat flattened medially in basal half; humeri distinctly protruding; apices modified, channel of gland forming short tubular process at apical margin. Surface moderately glossy; punctation somewhat weaker, setation slightly longer than on head, with scattered short erect setae.

Legs slender, simple; all tibiae with paired terminal spurs.

Abdominal sternum VII simple, at most slightly produced and rounded apically; sternum VIII forming paired, subtriangular sclerites that are narrowly connected medially, moderately angled and setose apically; tergum VII simple; tergum VIII simple. Aedeagus (Fig. 111): tegmen strongly elongate, narrowed, and distinctly hooked apically; endophallic armature with pair of long, slender sclerites and numerous shorter, more delicate spines.

**Female.** Unknown.

**Differential diagnosis.** *Microhoria kabulensis* sp. nov. belongs to the *M. terminata* species-group. Among the species with elytral colour patterns, it resembles especially *M. nepticula* from Afghanistan by the wider head and simple tegmen. However, the apical portion of the tegmen is markedly more elongate and slender, having a clearly hooked apex (the tegmen is wider, somewhat sinuously narrowing, and simply rounded apically in *M. nepticula*, see BONADONA (1964: Figs 9, 10)). Additionally, *M. nepticula* also exhibits a rather distinctly produced and nearly truncate apex of male sternum VII.

**Etymology.** Named after the type locality; adjective.

**Distribution.** Afghanistan.

### *Microhoria kermanica* Kejval, sp. nov.

(Figs 112, 115)

**Type locality.** Iran, Kerman Province, Kuh-e Lalehzar, plateau in north region, vicinity of Lalehzar village, 29°31'N 56°51'E, alt. 2800–3100 m.

**Type material.** HOLOTYPE: ♂, 'C. Iran, 2800 m Lalehzar 24-30.5.1977 [p] // Loc. no. 347 Exped. Nat. Mus. Praha [p]' (NMPC). PARATYPES: 2 ♂♂ 2 ♀♀, 'IRAN prov. Kerman Sarbizhan 5.5.2010 140 km S Kerman lgt. Orszulik 2700 m [p]' (ZKDC).

**Description. Male** (holotype). Body length 2.6 mm. Body black, elytra with slight brownish tinge posteriorly; femora brownish-black, tibiae and base of tarsi reddish-brown to yellowish, antennae black, basal five antennomeres with brownish tinge.

Head round in shape, 1.1 times as long as wide, somewhat widely rounded posteriorly (posterior angles indistinct); eyes small, moderately convex. Surface moderately glossy, minutely punctate; punctures distinctly spaced; setation short, subdecumbent. Antennae moderately enlarged in apical half; antennomeres X at most 1.1 times, XI about 2.3 times as long as wide.

Pronotum as long as wide, moderately narrower than head including eyes, evenly rounded anteriorly, pronotal disc moderately convex, outline in dorsal view with lateral

margins slightly narrowing posteriorly. Surface moderately glossy, minutely punctate; punctation and setation as on head, with few very short erect setae.

Elytra 1.7 times as long as wide, subparallel, somewhat impressed medially in basal half; humeri distinctly protruding; apices modified, channel of gland forming short tubular process. Surface moderately glossy, distinctly and densely punctate; punctation somewhat denser and setation as on head, with scattered, inconspicuous, short erect setae.

Legs slender, simple; all tibiae with paired terminal spurs.

Abdominal sternum VII simple; sternum VIII forming paired, subtriangular sclerites that are rounded and setose posteriorly; tergum VII and VIII simple. Aedeagus (Figs 112, 115): apical portion of tegmen very long and slender, slightly sinuous and with hooked apex; endophallic armature with pair of hook-like spines that are widened basally, and bunch of delicate spinules.

**Female.** Identical with male for most external characters; elytral apices simple; sternum and tergum VII simple.

**Variation.** Body length (♂♀) 2.6–3.0 mm; paratypes with darker, brownish tibiae and tarsi.

**Differential diagnosis.** *Microhoria kermanica* sp. nov. belongs to the *M. terminata* species-group. It seems to be close to *M. bacillisternum* sp. nov., as suggested by the similar structure of the endophallus, but differs by its wider head, simple sclerites of male sternum VIII, and the hooked apex of the tegmen (cf. Figs 112 versus 95).

**Etymology.** Named after the Kerman Province of Iran, site of the type locality; adjective.

**Distribution.** Iran.

### *Microhoria lividipes* (Desbrochers des Loges, 1875) comb. nov.

*Anthicus lividipes* Desbrochers des Loges, 1875: 47.

*Anthicus lividipes*: PIC (1911b): 58 (catalogue); BAUDI DI SELVE (1877): 707 (record Syria, diagnosis); WINKLER (1927): 848 (catalogue); KREKICH-STRASSOLD (1929): 164 (note); UHMANN et al. (2005): 37 (distribution, record Lebanon); CHANDLER et al. (2008): 427 (catalogue, distribution).

**Type locality.** Syria ('Syrie').

**Type material.** SYNTYPE: ♀, 'Syrie [p] // 83Db [p] // type [h; yellowish label] // TYPE [p; red label] // lividipes Desb. Typiq. [h; bluish label]' (coll. Pic, MNHN).

**Distribution.** Lebanon, Syria.

**Remarks.** DESBROCHERS DES LOGES (1875) described *Anthicus lividipes* from an unstated number of specimens originating from Syria. It has been grouped with *Microhoria* species several times, especially by KREKICH-STRASSOLD (1929), but never formally placed in this genus. Its generic identity is confirmed herein by examination of the type specimen.

### *Microhoria luristanica* (Pic, 1911) comb. nov. (Fig. 113)

*Anthicus luristanicus* Pic, 1911a: 97.

*Anthicus luristanicus*: PIC (1911b): 59 (catalogue); WINKLER (1927): 845 (catalogue).

*Tenuicomus luristanicus*: UHMANN (1985): 198 (record Iran).

*Tenuicollis luristanicus*: CHANDLER et al. (2008): 448 (catalogue, distribution); TELNOV & GHAHARI (2018): 484 (note).

*Anthicus Pietschmi* Pic, 1938: 11, **syn. nov.**

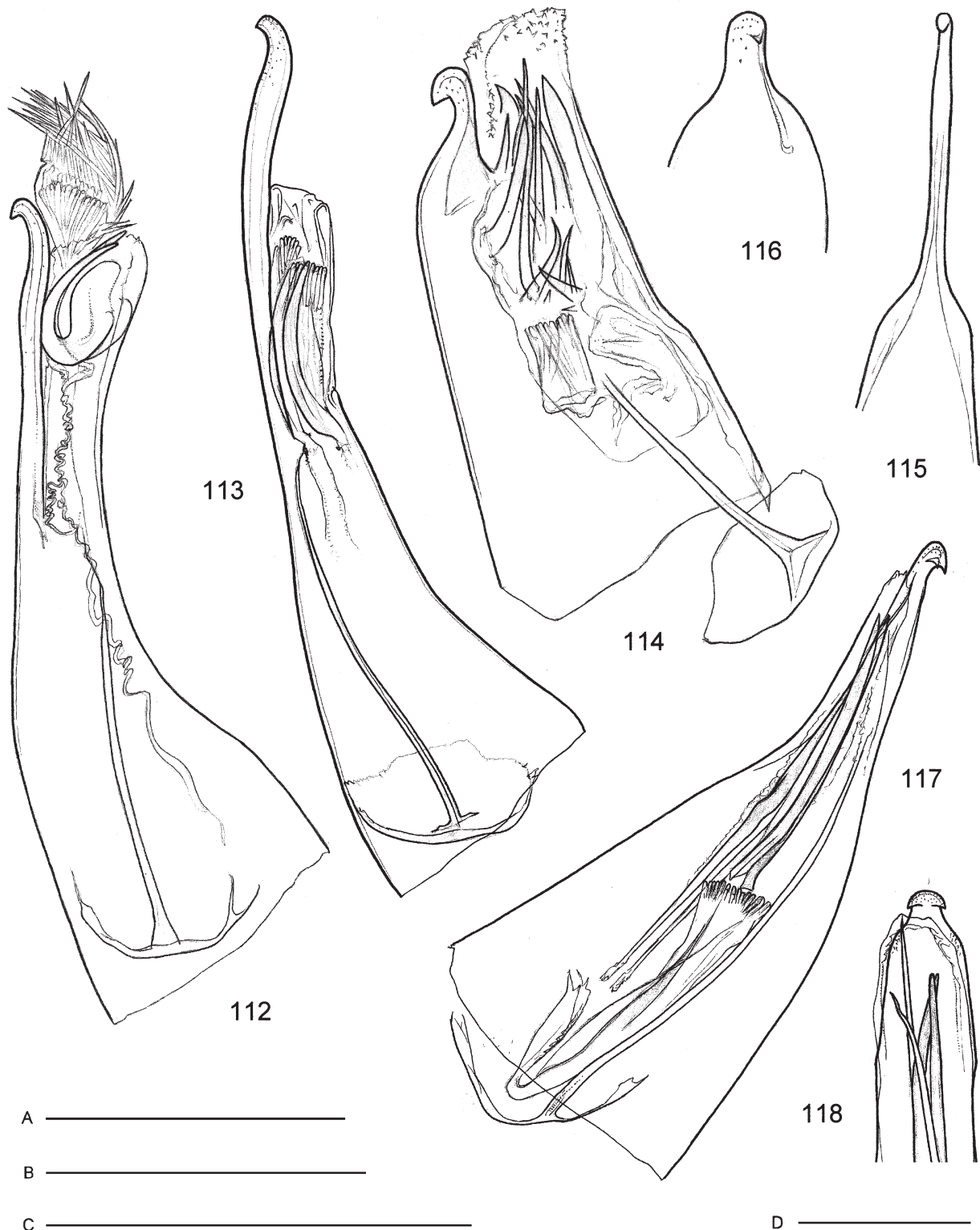
*Tenuicollis pietschmi*: CHANDLER et al. (2008): 448 (catalogue, distribution).

**Type locality.** *Anthicus luristanicus* – Iran, Luristan ('Perse: Luristan'); *A. pietschmi* – Iraq ('Mesopotamia').

**Type material.** *Anthicus luristanicus* – LECTOTYPE (herewith designated): ♂, 'v. Bodemeyer Persien Luristan [p] // type [h; yellowish label] // TYPE [p; red label] // *Anthicus pres ottomanus* Laf. [h] // *luristanicus* Pic [h]' (MNHN).

*Anthicus pietschmi* – LECTOTYPE (herewith designated): ♀, 'Mesopot ... Pietschm [partly illegible] // type [h; yellowish label] // TYPE [p; red label] // *Pietschmi* n sp [h]' (MNHN).

**Additional material.** IRAN: 12 ♂♂ 49 ♀♀, Lorestan prov., 28 km NNW of Andimeshk, Hoseiniyeh, Bala Rud valley, 32°41'N 48°16'E, 360 m, 12.–13.iv.1977, Exped. lgt. (NMPC, ZKDC); 1 ♂, Esfahan prov., Organ, 32°46'N 50°27'E, Zayandeh-Rud river banks, 2000 m, 1.vii.1990, Exped. lgt. (NMPC); 2 ♂♂, Khuzestan prov., Ahwaz, 31°19'N 48°41'E, 14.iv.1977,



Figs 112–118. 112 – *Microhoria kermanica* sp. nov., aedeagus in lateral view; 113 – *M. luristanica* (Pic, 1911) comb. nov., Iran, Andimeshk, aedeagus in lateral view (ZKDC); 114 – *M. ottomana* (LaFerté-Sénéctère, 1849) comb. nov., holotype, aedeagus in lateral view; 115 – *M. kermanica* sp. nov., apex of tegmen, dorsal view; 116 – *M. ottomana*, apex of tegmen, dorsal view; 117 – *M. pahlavi* sp. nov., aedeagus in lateral view; 118 – same, apical portion in ventral view. Scale bars: 0.2 mm – (Figs 112, 115), B (Figs 114, 116), C (Fig. 113), D (Figs 117, 118).



Exped. lgt. (NMPC); 1 ♂, Khuzestan prov., Shushtar, Karun river env., 32°03'N 48°51'E, 13.iv.1977, Exped. lgt. (NMPC); 5 ♂♂, Khorasan prov., Kuh-e-Binalud, Mashad env. Bozgan, 17.v.2003, K. Orszulik lgt. (ZKDC); 3 ♂♂, Khorasan prov., 80 km SW Sarakhs, Mazdavand, 800 m, 24.–25. iv.2006, A. Klimenko lgt. (ADBC); 1 ♀, Lorestan prov., Dorud env., 2.–3. vi.2005, P. Průdek lgt. (ZKDC); 3 ♂♂ 1 ♀, Golhak, near Teheran, 1400 m, iii.–v.1961, J. Klapperich lgt. (DCDC, ZKDC). **IRAQ:** 95 spec., Bagdad [no date, ca. 1925–1932], V. Kálalová lgt. (NMPC, ZKDC). **TURKEY:** 1 ♀, Bitlis, Baykan, 10.v.1984, Wellschmied lgt. (ZKDC); 2 ♀♀, Urfa prov., Halfeti, 21.v.1993, V. Švihla lgt. (ZKDC); 1 ♂, Adiyaman vill., Nemrud Dagi, Karadut env., 3.–4.v.2000, J. Mertik lgt. (ZKDC).

**Diagnosis.** *Microhoria terminata* species-group; black, elongate species, with simple pronotum. Male sternum VII slightly produced and subtruncate; sternum VIII forming paired subtriangular sclerites that are rounded apically, narrowly touching/connected medially; tergum VII and VIII simple; aedeagus (Fig. 113). Female sternum VII simple; tergum VII simple.

**Variation.** Body length (♂♀) 2.2–2.8 mm.

**Distribution.** Iran, Iraq, and Turkey.

**Remarks.** PIC (1911a, 1938) described *Anthicus luristanicus* from Iran and *A. pietschmi* from Iraq; both descriptions are based on an unstated number of specimens that were provided by B. von Bodemeyer (former species) and V. Pietschmann (latter species). For *A. pietschmi* a single female syntype was found in the Pic Collection and was thus available for study; however, its identity was resolved based on additional similar specimens collected in Iraq. The males examined are in our opinion identical, and *A. pietschmi* is thus newly placed as a junior synonym of the former species.

### *Microhoria ottomana* (LaFerté-Sénéctère, 1849)

comb. nov.

(Figs 114, 116)

*Anthicus ottomanus* LaFerté-Sénéctère, 1849b: 155.

*Anthicus ottomanus*: LaFerté-Sénéctère (1849c): 254 (repeated description); PIC (1911b): 65 (catalogue); WINKLER (1927): 845 (catalogue).

*Tenuicomus ottomanus*: UHMANN (1985): 198 (record Turkey).

*Tenuicollis ottomanus*: CHANDLER et al. (2008): 448 (catalogue, distribution).

*Anthicus Merkli* Pic, 1897b: 295, **syn. nov.**

*Anthicus Merkli*: Pic (1911b): 61 (catalogue); WINKLER (1927): 845 (catalogue).

*Tenuicollis merkli*: CHANDLER et al. (2008): 448 (catalogue, distribution).

**Type locality.** *Anthicus ottomanus* – Turkey ('Asia-Minor'); *A. merkli* – Turkey.

**Type material.** *Anthicus ottomanus* – HOLOTYPE: ♂, 'friwal 1846 [h] // ottomanus Mihi [h]' (coll. LaFerté-Sénéctère, MNHN).

*Anthicus merkli* – LECTOTYPE: ♂, 'Turquie (Merkli) [h] // n. sp. [h] // type [h; yellowish label] // A. Merkli Pic [h] // TYPE [p; red label]' (coll. Pic, MNHN). PARALECTOTYPE: 1 spec., 'Turquie (Merkli) [h] // type [h; yellowish label]' (coll. Pic, MNHN).

**Additional material.** **TURKEY:** 2 ♂♂, Ankara, v.1937, Vasvári lgt. (DCDC); 1 spec., Ankara prov., Tuz Gölü Lake, 30 km N of Seriflikoçhisar, 1.vi.1999, S. Kadlec lgt. (ZKDC); 4 spec., Ankara prov., Tuz Gölü Lake, 25 km NW of Seriflikoçhisar, salty shore, 900 m, 1.vi.1999, S. Benedikt lgt. (ZKDC); 15 spec., Antalya prov., Elmalı env., Avlanbeli Geçidi Pass, 800–1600 m, 14.–17.vi.1996, M. Knížek lgt. (ZKDC); 2 spec., 20 km S of Elmalı, 15.–16.vi.1996, Z. Malinka lgt. (ZKDC); 1 spec., Bingöl prov., Bingöl, 1125 m, Kadlec & Voříšek lgt. (ZKDC); 1 spec., Burdur prov., Bucak, 16.vi.1996, Z. Malinka lgt. (ZKDC); 1 spec., Burdur prov., 20 km SW of Burdur, 37°37'N 30°09'E, 940 m, 7.vii.2006, J. Halada lgt. (ZKDC); 1 spec., Eskişehir prov., Sakari Ilica, near Gümele, 6.–9.vii.1997, P. Průdek & M. Říha lgt. (ZKDC); 1 spec.,

İzmir prov., Bergama, 1.v.1990, F. Kantner lgt. (ZKDC); 20 spec., İzmir prov., Kabakum village env., N of Dikili, 4.–5.v.2002, T. Růžička lgt. (ZKDC); 3 spec., Konya prov., 46 km NNE Konya, 1000 m, 18.–19. vi.1996, M. Knížek lgt. (ZKDC); 4 spec., Kütahya prov., 30 km SW of Kütahya, steppe, 1200 m, S. Benedikt lgt. (ZKDC).

**Diagnosis.** *Microhoria terminata* species-group; small species, having dark, unicolorous body, mostly with slight bluish reflection on elytra and paler tibiae. Male sternum VII simple; sternum VIII forming paired, rather widely connected sclerites that are evenly rounded and setose posteriorly; tergum VII and VIII simple; aedeagus (Figs 114, 116). Female sternum VII simple; tergum VII simple.

**Variation.** Body length (♂♀) 2.2–2.9 mm.

**Distribution.** Turkey, Greece (Lesbos).

**Remarks.** LaFerté-Sénéctère (1849b) described *Anthicus ottomanus* from a single specimen provided by Friwaldszky. Pic (1897b) described *Anthicus merkli* from an unstated number of specimens provided by M. E. Merkl.

The type specimens were found to be identical, including form of the inner structure of the aedeagus, and so *Anthicus merkli* is placed as a junior synonym of *Microhoria ottomana*.

### *Microhoria pahlavi* Kejval, sp. nov.

(Figs 117, 118)

**Type locality.** Iran, Kerman Province, 33 km W of Sabzevaran, on the road Sabzevaran – Esefandageh, 28°44'N 57°28'E, alt. 1100 m.

**Type material.** HOLOTYPE: ♂, 'E. Iran, 1100 m 33 km W Sabzvaran 6-7.5.1973 // Loc no. 189 Exp. Nat. Mus. Praha [p]' (NMPC). PARATYPES: 1 ♂, 'E Iran Env Deh Pabid 21.4.1973 // Loc no. 172 Exp. Nat. Mus. Praha [p]' (NMPC).

**Description.** **Male** (holotype). Body length 3.6 mm. Head black, pronotum reddish, elytra largely dark brown, brownish-black at base, with large, paired, vaguely outlined, yellowish spot laterally in apical third; abdomen largely brownish-black, terminal segments VII and VIII contrastingly yellowish; femora brownish, with paler base, tibiae and tarsi reddish, antennae dark reddish, slightly paler in basal third.

Head 1.3 times as long as wide including eyes, nearly evenly rounded posteriorly; eyes comparatively small, only moderately convex. Surface moderately glossy, distinctly and rather densely punctate; punctures mostly dense, sparser medially; setation short, appressed to subdecumbent. Antennae moderately enlarged for apical third; antennomeres X 1.4 times as long as wide, XI conspicuously elongate, 4.2 times as long as wide.

Pronotum 1.1 times as long as wide, evenly rounded anteriorly, moderately narrower than head including eyes; pronotal disc moderately convex, outline in dorsal view with lateral margins nearly straightly narrowing posteriorly. Surface moderately glossy; setation and punctuation as on head; latero-basal margins with some longer, more raised setae.

Elytra 1.9 times as long as wide; humeri distinctly protruding; omoplates and postbasal impression slightly indicated; apices modified, somewhat bulging, channel of gland forming short tubular process. Surface slightly glossy, rather densely punctate and somewhat shagreened; punctuation more delicate, shallower than on head; setation as on head, erect setae very short, inconspicuous.

Legs slender, simple; all tibiae with paired terminal spurs.

Abdominal sternum VII moderately emarginate apically; sternum VIII forming pair of simple sclerites that are rounded and setose posteriorly; tergum VII and VIII simple. Aedeagus (Figs 117, 118): tegmen moderately wide in apical half, abruptly narrowed in front of hooked and bidentate apex; endophallic armature with two pairs of long, robust and slender sclerites.

**Female.** Unknown.

**Variation.** Body length (♂) 3.5–3.6 mm; paratype with indication of a small, yellowish posthumeral spot on the elytra.

**Differential diagnosis.** *Microhoria pahlavi* sp. nov. belongs to the *M. terminata* species-group. It can be easily recognized by its larger size, bright colouration, extremely elongate terminal antennomeres, and the male characters.

**Etymology.** Named after the Pahlavi dynasty and the last Shah of Iran, Mohammad Reza Pahlavi; noun in the nominative case, standing in apposition.

**Distribution.** Iran.

***Microhoria persica* Kejval, sp. nov.**

(Figs 119, 157)

**Type locality.** Iran, Fars Province, 29 km E of Yasuj, 30°41'N 51°43'E, alt. 2300 m.

**Type material.** HOLOTYPE: ♂, 'S Iran, 29 km E Yasuj, 2300 m, 16.-17.6.1973 [p] // Loc. no. 245 Exp. Nat. Mus. Praha [p] // *Microhoria mollis* (Desbrochers) det. G. Uhmann 1985 [p]' (NMPC). PARATYPES: 44 ♂♂ 33 ♀♀, same data as holotype (NMPC, ZKDC, DCDC); 2 ♀♀, 'S Iran, 42 km N Masiri, 2230 m, 12.6.1973 [p] // Loc. no. 238 Exp. Nat. Mus. Praha [p] // *Microhoria mollis* (Desbrochers) det. G. Uhmann 1985 [p]' (NMPC).

**Description. Male** (holotype). Body length 2.5 mm. Body dark brown, elytra slightly paler; femora brown, tibiae and tarsi yellowish, antennae partly yellowish, distinctly darkened on apical third, also basal antennomere brownish.

Head elongate, 1.1 times as long as wide, widely rounded posteriorly; eyes small, moderately convex. Surface glossy, minutely but distinctly punctate; punctures distinctly spaced; setation short, subdecumbent. Antennae slightly enlarged for apical half; antennomeres X as long as wide, XI 2.5 times as long as wide.

Pronotum about as long as wide, narrower than head including eyes, widely rounded anteriorly; pronotal disc moderately convex, outline in dorsal view with lateral margins rather strongly, straightly narrowing posteriorly (Fig. 157). Surface glossy, minutely punctate; setation and punctuation as on head, latero-basal sides with some longer, more raised setae.

Elytra 1.5 times as long as wide, somewhat flattened medially in basal half; humeri distinctly protruding; omo-plates slightly indicated; apices modified, channel of gland forming short tubular process. Surface moderately glossy, distinctly punctate; punctuation and setation slightly coarser than that on head, with scattered short erect setae.

Legs slender, simple; all tibiae with paired terminal spurs.

Abdominal sternum VII slightly produced and rounded apically; sternum VIII forming simple paired sclerites that are narrowly connected medially. Aedeagus (Fig. 119): slender apical portion of tegmen with slight tooth at mid-

length, with longitudinal carina and bluntly pointed apex; endophallic armature with numerous minute spinules.

**Female.** Identical with male for most external characters; elytral apices simple; both sternum and tergum VII simple.

**Variation.** Body length (♂♀) 2.2–2.5 mm; body colour brown to black, head sometimes nearly evenly rounded posteriorly; punctuation of head and pronotum varying in prominence, mostly rather inconspicuous.

**Differential diagnosis.** *Microhoria persica* sp. nov. belongs to the *M. terminata* species-group. Externally it can be easily confused with *M. kermanica* sp. nov., showing only slight differences, e.g. the rather widely rounded head base and anterior margin of pronotum (the latter somewhat angled antero-laterally in dorsal view). On the other hand, it can be easily distinguished from the latter species by characters of the aedeagus: the endophallus with numerous minute spinules, the lack of paired hook-like sclerites and longer spines, and the simple apex of the tegmen (cf. Figs 119 versus 112).

**Etymology.** Named after the ancient empire Persia which once included the present-day region of Iran; adjective.

**Distribution.** Iran.

***Microhoria pinicola* (Reitter, 1889)**

*Anthicus pinicola* Reitter, 1889: 258.

*Microhoria pinicola*: TELNOV (1998): 170 (record Greece); CHANDLER et al. (2008): 442 (catalogue, distribution).

*Microhoria feroni* Bonadonna, 1960: 51, Figs 1, 3, 5, **syn. nov.**

**Type locality.** *Anthicus pinicola* – Greece, Attica; *Microhoria feroni* – Greece, Euboea Island, Rovies.

**Type material.** *Anthicus pinicola* – LECTOTYPE (herewith designated): ♂, 'Attica Reitter [p] // Graecia [h] // Paratypus 1889. *Anthicus pinicola* Reitter [p+h; red frame] // Coll. Reitter [p]' (HNHM). PARALECTOTYPE: 1 ♀, same data, except 'Holotypus' in the 3rd label (HNHM).

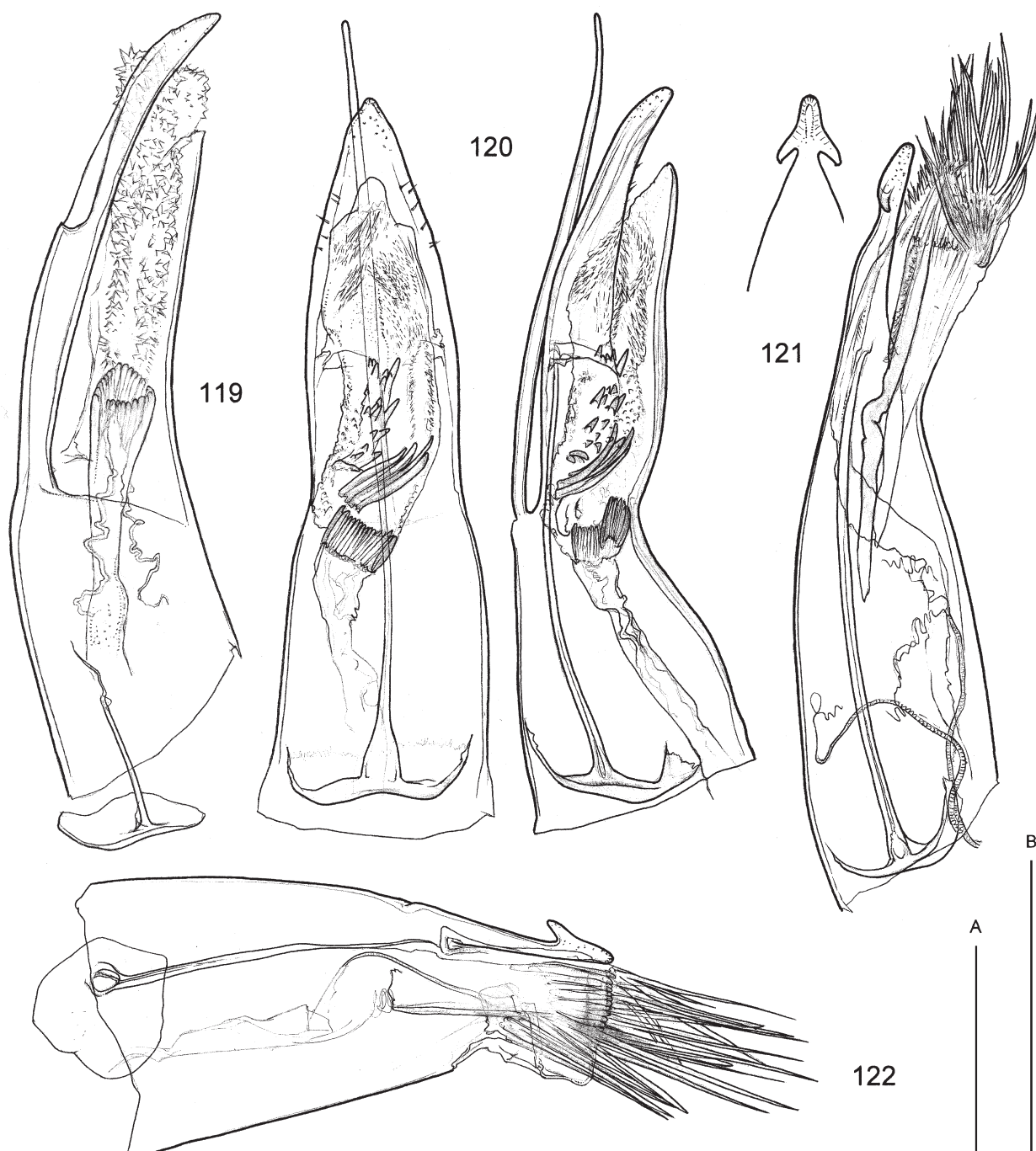
*Microhoria feroni* – PARATYPE: ♂, 'Ile d'Eubée a Roviès (Sporades) 10.VII.1956. [h] II Paratype [h; red label] // *Microhoria* (*Platyhoria*) *feroni* n. sp. P. BONADONNA det. [p+h]' (coll. Bonadonna, MNHN).

**Additional material.** GREECE: CENTRAL GREECE: 3 ♂♂, Euboea, Pili, 105 m, 16.vi.–25.ix.2014, A. Sette lgt. (ADBC); 4 ♂♂, Euboea, Pili, 100 m, 20.vi.2016, A. Sette lgt. (ADBC). CENTRAL MACEDONIA: 1 ♀, Mount Menikio, 12.viii.2010, J. Halada lgt. (ADBC). EPIRUS: 1 ♂, Parga, 13.vi.2008, K. Orszulik lgt. (ZKDC). IONIAN ISLANDS: 20 ♂♂, Corfu, Pelekito, 21.vi.2010, M. Pavesi lgt. (ADBC). PELOPONNESE: 4 ♂♂, Arcadia, Tyros, Paralia, 15.vii.1987, R. Schuh lgt. (ZKDC); 4 ♂♂ 1 ♀, Corinthia, Gerania Region, NW of Perachora, 38°03'N 22°55'E, 200 m, 16.vii.1990, M. & R. Rausch lgt. (ZKDC); 3 ♂♂, Laconia, 1.4 km NW of Grammoussa, 10.vi.2016, B. Zbuzek lgt. (ZKDC). THESSALY: 1 ♂, Trikala, Pili, 20.vi.2008, A. Fancello lgt. (ADBC). WEST GREECE: 2 ♂♂, Etolia-Akarnania, Astakos, 22.vi.–6.vii.2001, A. Sette lgt. (ADBC).

**Distribution.** Greece.

**Remarks.** REITTER (1889) described *Anthicus pinicola* from an unstated number of specimens collected by H. von Oertzen in Greece at three localities: Aegina, Attica, and Morea. The lectotype is designated herein for a male syntype from Attica (its paratype label is surely not original but added by curators). BONADONNA (1960) described *Microhoria feroni* from two specimens originating from Euboea Island in Greece. Both species are conspicuous in having a unicolorous reddish body, and the male type specimens have identical aedeagi, including the rather





Figs 119–122. Aedeagus: 119 – *Microhoria persica* sp. nov., lateral view; 120 – *M. sawda* sp. nov., ventral (left) and lateral (right view); 121 – *M. strejceki* sp. nov., lateral view, and apex of tegmen in dorsal view; 122 – *M. truncatipennis* (Pic, 1897) comb. nov., lateral view. Scale bars: 0.2 mm – A (Figs 120, 121), B (Figs 119, 122).

characteristic small lobule on the outer side of the narrowed, straightly projecting apical portion of the tegmen, and the endophallus with an apical tuft of simple, delicate spinules. Consequently, *Microhoria feroni* is proposed as a junior synonym of *Anthicus pinicola*.

The specimens collected by M. Pavesi at the locality Pelekito were captured by using traps with paper towels soaked with alcohol containing the exudates from freshly caught specimens of *Meloe* Linnaeus, 1759 (Degiovanni, pers. comm.); the specimens collected by A. Sette in Central and Western Greece Regions were trapped in cups holding wine vinegar (Degiovanni, pers. comm.).

#### *Microhoria sawda* Kejval, sp. nov.

(Fig. 120)

**Type locality.** Saudi Arabia, Riyadh Province, Salhoukh, wadi near dam, 25°05'N 46°20'E, alt. 698 m.

**Type material.** HOLOTYPE: ♂, 'Saudi Arabia, Riyadh prov. 6.ii.2016, SALHOUKH (wadi nr. dam), 698 m 25°05'N 46°20'E J. Bezděk & D. Král lgt. [p]' (NMPC). PARATYPES: 19 ♂♂ 6 ♀♀, same data as holotype (NMPC, ZKDC); 2 ♂♂ 1 ♀, 'Saudi Arabia, Riyadh prov. 2.ii.2016, WADI HANIFA, btw UYAYNA and SADUS (nr. dam), 24°54'N 46°11'E 805 m, J. Bezděk & D. Král lgt. [p]' (NMPC).

**Description.** *Male* (holotype). Body length 3.1 mm. Body black, elytra with brownish tinge posteriorly; legs

brownish-black, tibiae and tarsi somewhat paler, antennae black, antennomeres II, III slightly brownish.

Head elongate, 1.3 times as long as wide, widely rounded posteriorly; eyes small, moderately convex. Surface moderately glossy, minutely punctate; punctures distinctly spaced; setation short, subdecumbent. Antennae moderately enlarged in apical half; antennomeres X 1.2 times, XI nearly 2.7 times as long as wide.

Pronotum 1.1 times as long as wide, moderately narrower than head including eyes, evenly rounded anteriorly, pronotal disc moderately convex, outline in dorsal view with lateral margins slightly narrowing posteriorly. Surface moderately glossy, punctate; punctation and setation as on head, with few very short erect setae.

Elytra 1.8 times as long as wide, somewhat flattened medially in basal half; humeri distinctly protruding; apices modified, channel of gland forming short tubular process. Surface moderately glossy, distinctly and densely punctate; punctation coarser and setation slightly longer than on head, with scattered, inconspicuous, short erect setae.

Legs slender, simple; all tibiae with paired terminal spurs.

Abdominal sternum VII widely rounded to subtruncate and slightly emarginate apically; sternum VIII forming paired, subtriangular sclerites that are distinctly setose posteriorly. Aedeagus (Fig. 120): apical portion of tegmen rather wide, nearly evenly narrowing towards bluntly pointed apex, with several short setae along margins, and with conspicuous, slender rod-like projection; endophallic armature with numerous robust spines (longer spines bunched) and delicate minute spinules.

**Female.** Identical with male for most external characters; elytral apices simple; sternum VII simple; tergum VII simple, evenly rounded apically.

**Variation.** Body length (♂♀) 3.0–3.6 mm.

**Differential diagnosis.** *Microhoria sawda* sp. nov. belongs to the *M. terminata* species-group. It can be recognized by the elongate, subparallel body, posteriorly slightly narrowed and uniformly setose pronotum, and mainly by the characters of aedeagus (wider apical portion of tegmen, with some short setae laterally and with slender, rod-like projection).

**Etymology.** The species name *sawda* is derived from the Arabic word ‘Sawaad’ (black colour); referring to generally dark colouration of this species; noun in the nominative case, standing in apposition.

**Distribution.** Saudi Arabia.

### *Microhoria strejceki* Kejval, sp. nov.

(Fig. 121)

**Type locality.** Tajikistan, Aruk-Tau Mts, Gara-Vuti env., pr. Shaartuz, cca 600 m.

**Type material.** HOLOTYPE: ♂, ‘USSR-Tadzhikistan 21.4.1978 Aruk-Tau (cca 600 m) Gara-Vuti env. (pr. Shaartuz) J. Strejček lgt. [p]’ (NMPC). PARATYPES: 2 ♂♂, same data as holotype (ZKDC); 1 ♂, ‘USSR Tadzhikistan Babatag Mts. 30.4.1977 J. Strejček lgt. [p]’ (ZKDC); 2 ♀♀, ‘USSR Tadzhikistan Babatag Mts. 30.4.1977 Sv. Bilý lgt. [p]’ (NMPC); 1 ♂, ‘USSR, Tardzjekistan, 1981 Hissar Mts., 1.300–1.600 m 50 km N Dushanbe, 19.6. GUSHARA, Varzob river Karel Majer leg. [p]’ (ZKDC);

2 ♂♂, ‘SU, Tadshikistan, Pamir Dschailgan, Muxu-Ufer b. Dep-Schaar, 2150m NN 29.VI.1990, leg. Hartmann [h; partly illegible] // *Microhoria nepticala* Bonadonna det. GUHmann1991 [p+h]’ (ZSMC).

**Description. Male** (holotype). Body length 3.5 mm. Head black; pronotum reddish, disc darkened medially; elytra yellowish, with brown apex, base, wide transverse band at about mid-length, and suture in basal half (narrowly connecting basal spot with band); femora brown, tibiae and tarsi yellowish to pale reddish; antennae reddish-brown, antennomeres I, VII–XI distinctly darkened.

Head moderately elongate, 1.3 times as long as wide, widely rounded posteriorly (posterior angles indistinct); eyes small, at most moderately convex. Surface glossy, minutely but distinctly punctate; punctures distinctly spaced, sparser medially; setation short, subdecumbent to appressed. Antennae moderately enlarged in apical half; antennomeres X as long as wide, XI 2.4 times as long as wide.

Pronotum 1.1 times as long as wide, moderately narrower than head including eyes, evenly rounded anteriorly, pronotal disc moderately convex, outline in dorsal view with lateral margins nearly straightly narrowing posteriorly. Surface glossy, minutely punctate; punctation and setation as on head.

Elytra 1.9 times as long as wide, subparallel, slightly impressed medially on basal half; humeri distinctly protruding; apices modified, channel of gland forming short tubular process. Surface moderately glossy, distinctly and densely punctate; punctation and setation slightly coarser than on head, with scattered, very short erect setae.

Legs slender, simple; all tibiae with paired terminal spurs.

Abdominal sternum VII slightly emarginate apically; sternum VIII forming paired subtriangular sclerites that are rounded and setose posteriorly; tergum VII and VIII simple. Aedeagus (Fig. 121): tegmen elongate, narrowed and triangular (arrowhead-like) apically; endophallic armature with pair of robust, longitudinal sclerites, and clustered slender spines.

**Female.** Identical with male for most external characters; elytral apices simple; sternum VII simple; tergum VII simple, evenly rounded apically.

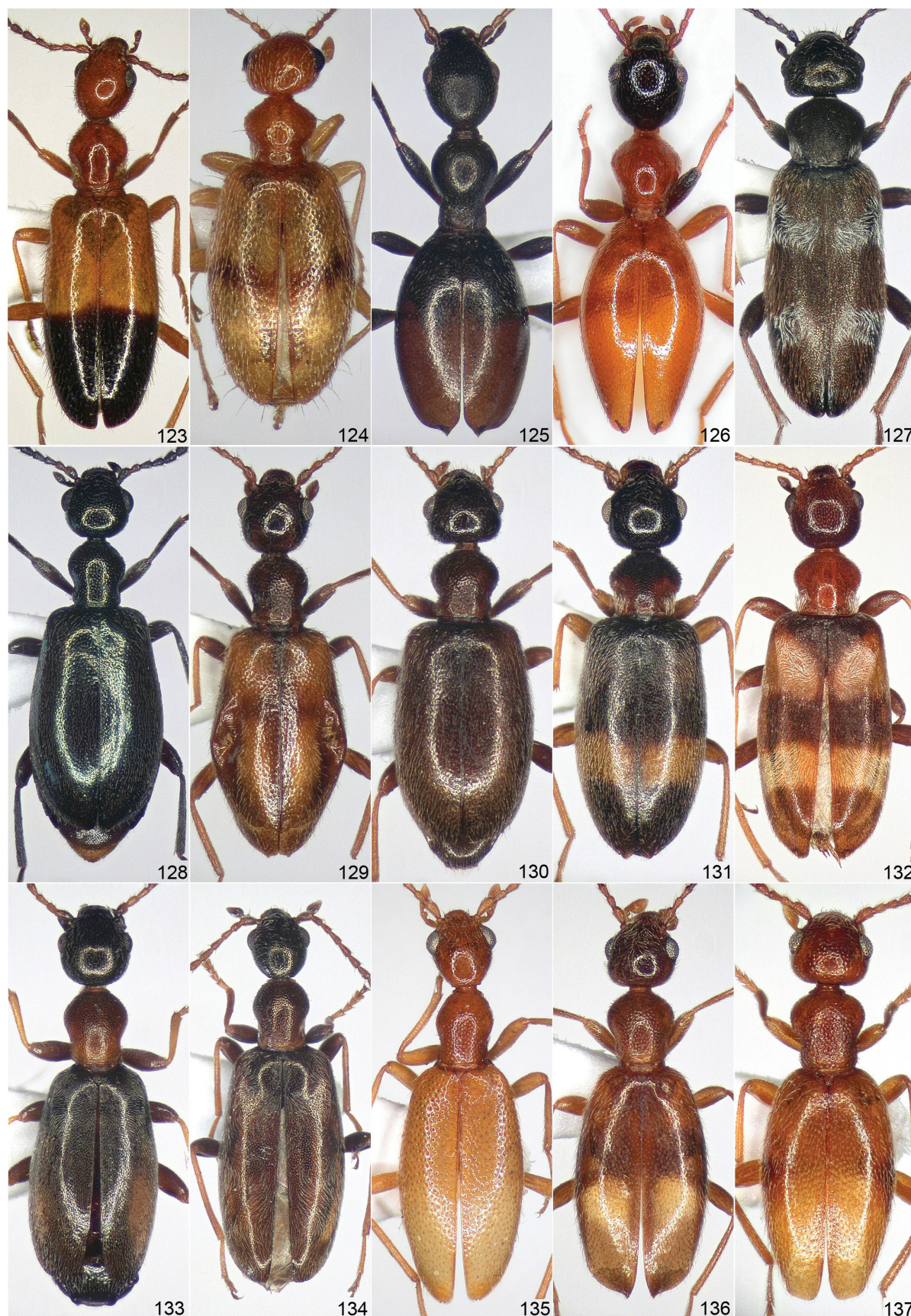
**Variation.** Body length (♂♀) 3.1–3.9 mm; pronotum entirely reddish or largely black, elytra with transverse band complete and connected with basal spot along suture, or widely interrupted medially (markings forming four widely separated spots).

**Differential diagnosis.** *Microhoria strejceki* sp. nov. belongs to the *M. terminata* species-group. At first sight it can be easily confused with the sympatric *M. edmondi*, but differs by the more widely rounded base of the head, less convex eyes, characters of the aedeagus (cf. Figs 121 versus 97), and by the simple tergum VII of the females (distinctly emarginate apically in *M. edmondi*).

**Etymology.** Named in honour of the late Czech entomologist Jaromír Strejček, who collected part of type series, including the holotype; noun in the genitive case, standing in apposition.

**Distribution.** Tajikistan.



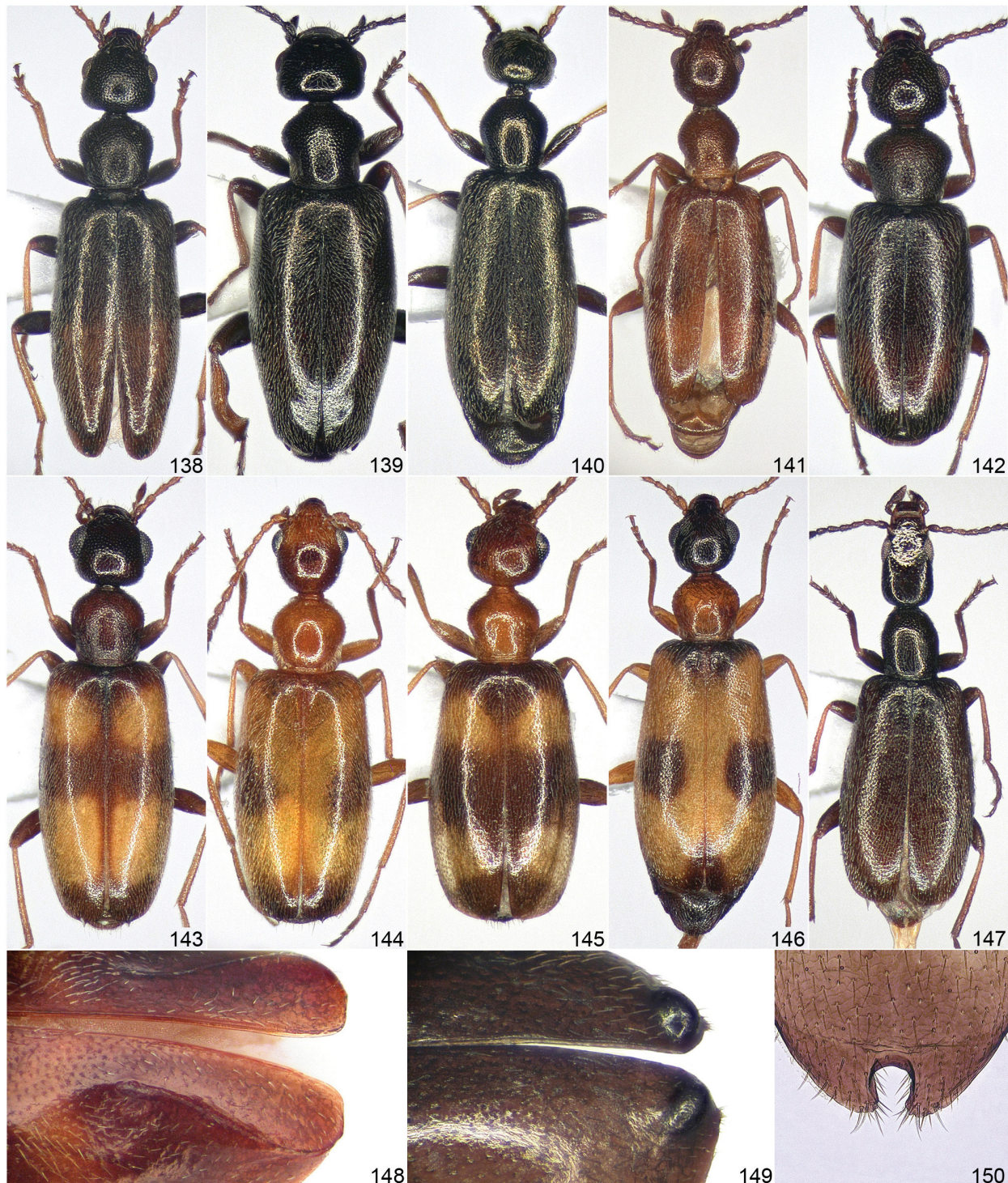


Figs 123–137. Habitus: 123 – *Neocrohoria melanura* (Fairmaire & Germain, 1863), O'Higgin prov., Cuesta Chada (ZKDC); 124 – *Aulacoderus mutatus* (Gemminger, 1870); 125 – *A. tuberculifer* (van Hille, 1985), Western Cape, Soutpan (ZKDC); 126 – *Falsophilus minutus* (Pic, 1894), Western Cape, Cape Point (ZKDC); 127 – *Liparoderus insignis* (Lucas, 1843), Spain, Farlete (ZKDC); 128 – *Microhoria caeruleicolor* (Pic, 1906) comb. nov.; 129 – *M. fugiens* (Marseul, 1896) comb. nov.; 130 – *M. posthuma* (Krekich-Strassoldo, 1931) comb. nov., India, Loharket (ZKDC); 131 – *M. fasciata* (Chevrolat, 1834); 132 – *M. vosseleri* (Pic, 1894); 133 – *M. heydeni* (Marseul, 1879) comb. nov.; 134 – *M. longiceps* (LaFerté-Sénéctère, 1849) comb. nov.; 135 – *M. proterva* (Krekich-Strassoldo, 1931), syntype (BMNH); 136 – *M. antalya* sp. nov.; 137 – *M. globipennis* (Pic, 1897), Turkey, Şenköy (ZKDC).



***Microhoria truncatipennis* (Pic, 1897) comb. nov.**

(Figs 122, 155, 159)

*Formicomus* (*Anthelephilus*) *truncatipennis* Pic, 1897c: 61.*Formicomus* (*Anthelephilus*) *truncatipennis*: WINKLER (1927): 836 (catalogue).*Formicomus truncatipennis*: Pic (1911b): 21 (catalogue).*Anthelephila truncatipennis*: CHANDLER et al. (2008): 424 (catalogue, distribution).*Anthicus Mouzafferi* Pic, 1910: 42, **syn. nov.***Anthicus Mouzafferi*: Pic (1911b): 62 (catalogue).*Anthicus Mouzafferi* [misspelling]: WINKLER (1927): 842 (catalogue).*Clavicollis mouzafferi*: CHANDLER et al. (2008): 431 (catalogue, distribution); TELNOV & GHAFARI (2018): 483 (note).**Type locality.** *Formicomus truncatipennis* – Central Asia ('Asie Centrale'); *Anthicus mouzafferi* – Iran ('Perse').**Type material.** *Formicomus truncatipennis* – SYNTYPES: 1 ♂ [torso, lacking head and pronotum; narrow triangular card], 'Asie Centrale [h] // *Anthicus pres olivieri* [h] // type [h; yellowish label] // TYPE [p; red label] // *truncatipennis* Pic [h]' (MNHN); 1 ♂ [narrow triangular card], '[plain label] // Asie Centrale [p] // type [h; yellowish label] // *Stenidius*

Figs 138–150. 138–147 – Habitus: 138 – *Microhoria ocreata* (LaFerté-Sénéctère, 1847) comb. nov.; 139 – *M. oedipus* (Chevrolat, 1860); 140 – *M. olivacea* (LaFerté-Sénéctère, 1849) comb. nov.; 141 – *M. paupercula* (LaFerté-Sénéctère, 1849) comb. nov.; 142 – *M. babaulti* (Pic, 1921) comb. nov.; 143 – *M. cervi* sp. nov.; 144 – *M. sulaimanica* sp. nov., paratype; 145 – *M. terminata* (W. L. E. Schmidt, 1842); 146 – *M. anahita* sp. nov.; 147 – *M. angelinii* (Degiovanni, 2012) comb. nov.; 148 – *M. apicordiger* (Bonadonna, 1958) comb. nov., apex of elytra; 149 – *M. gibbipennis* sp. nov., apex of elytra; 150 – *M. angelinii*, apex of female tergum VII.



*truncatipennis* Pic [h]' (MNHN).

*Anthicus mouzafferi* – LECTOTYPE (herewith designated): ♀, '[small plain, goldish label] // 623. [h] // Persia [h] // type [h; yellowish label] // TYPE [p; red label] // mouzafferi Pic [h]' (coll. Pic, MNHN). PARALECTOTYPE: 1 ♀, same data as lectotype, mounted on same card, see Remarks (coll. Pic, MNHN).

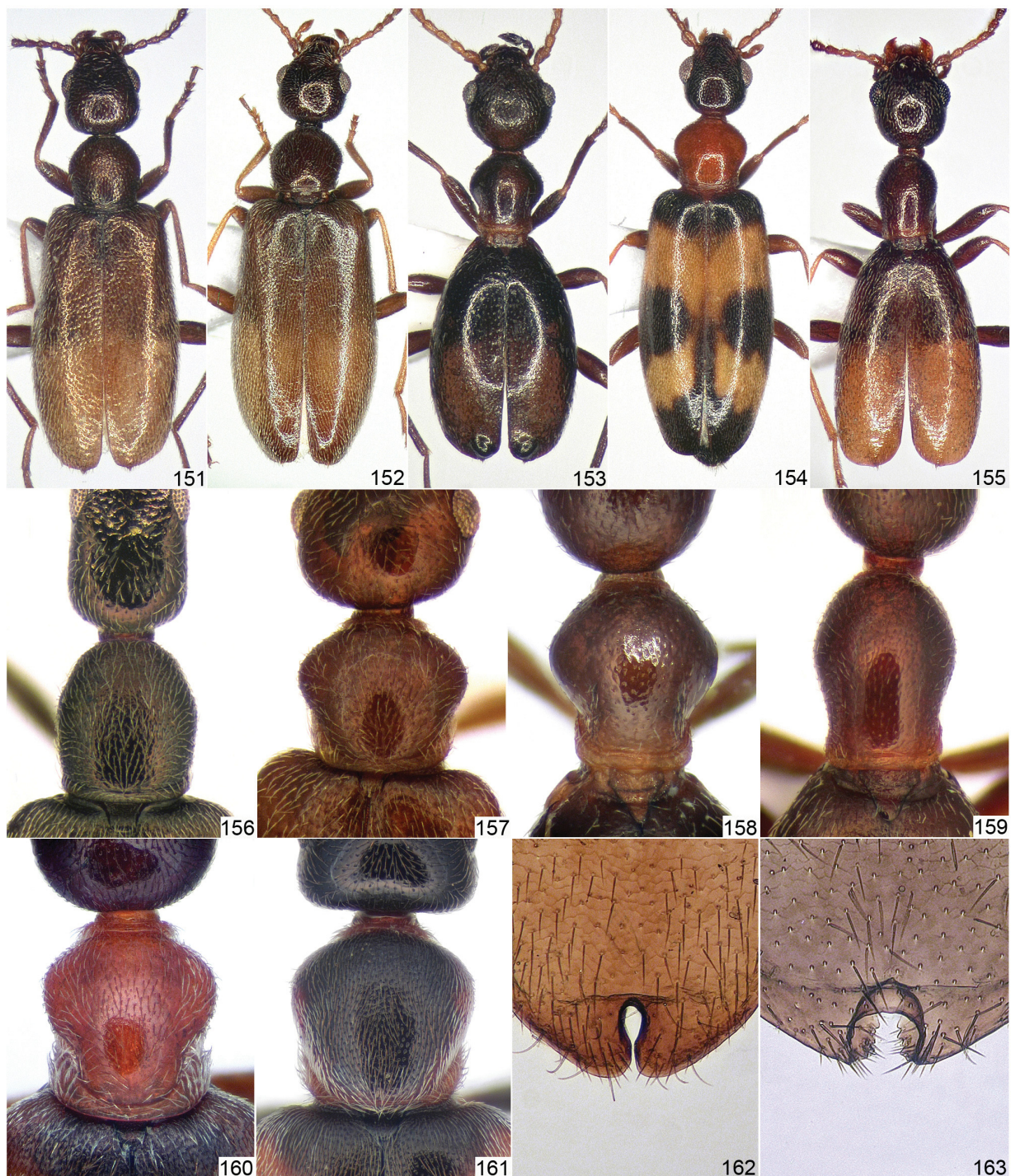
**Additional material.** IRAN: 1 ♂, 'Persia' [Collection Jakob Sturm, *A. mouzafferi* det. Krekich] (ZSMC); 1 ♀, Mazandaran prov., 40 km E from Firuzkuh Geduk, 30.vi.2004, C. Holzschuh lgt. (ZKDC).

**Diagnosis.** *Microhoria terminata* species-group; brownish-black, apterous species, with oval head, simple elongate

pronotum (Fig. 159), and subtruncate elytral apices (Fig. 155). Male sternum VII moderately emarginate apically; sternum VIII forming paired, subtriangular sclerites; tergum VII and VIII simple; aedeagus (Fig. 122). Female sternum VII simple; tergum VII truncate and emarginate apically.

**Distribution.** Iran, Tajikistan.

**Remarks.** Pic (1897c) described *Formicomus truncatipennis* from two specimens provided by Otto Staudinger, and regarded both as females, probably due to the simple



Figs 151–163. 151–155 – Habitus: 151 – *Microhoria bacillisternum* sp. nov.; 152 – *M. garavuti* sp. nov.; 153 – *M. gibbipennis* sp. nov.; 154 – *M. heracleana* sp. nov., paratype, Stomio (ZKDC); 155 – *M. truncatipennis* (Pic, 1897) comb. nov. 156–161 – pronotum and base of head and elytra: 156 – *M. angelinii* (Degiovanni, 2012) comb. nov.; 157 – *M. persica* sp. nov., paratype (ZKDC); 158 – *M. gibbipennis* sp. nov.; 159 – *M. truncatipennis*; 160 – *M. vosseleri* (Pic, 1894); 161 – *Microhoria* sp., Spain, Jarama River env., near Madrid (ZFMK). 162 – *M. depressa* (LaFerté-Sénéctère, 1849), Azerbaijan, Zarat (ZKDC), apex of female tergum VII; 163 – *M. gibbipennis* sp. nov., apex of female tergum VII.



front legs. PIC (1910) described *Anthicus mouzafferi* from an unstated number of specimens originating from ‘Perse’, and deposited the syntypes in his collection. The type material of both species was never examined, and especially the former species has been considered to be an enigmatic species of *Anthelephila*. Having examined the available syntypes (probably all) and additional specimens from Iran, we found the two species identical and are here placed in *Microhoria*.

The type specimens of *Anthicus mouzafferi* are mounted on a single card, both are females that face away from the pin. The syntype on the right from the pin base was found in better condition, and is herein selected as the lectotype.

#### IV. Species excluded from Microhoriini

##### *Anthicus desertus* Marseul, 1879

*Anthicus desertus* Marseul, 1879: 134.

**Type locality.** Russia, Siberia (‘Sibérie Transbaïcale’).

**Type material.** Syntypes, not examined (coll. Bonvouloir, MNHN).

**Remarks.** This species was recently listed under *Clavicollis* (CHANDLER et al. 2008). Its type material was never examined, however its distribution and some characters given in the original description (body ‘densément ruguleux pointillé’, base of head ‘trouguée avec une petite sinuosité au milieu’) suggest retention in its original genus *Anthicus*.

##### *Nitorus niger* (Uhmman, 1996) comb. nov.

*Clavicornis niger* Uhmman, 1996: 33, fig. 12.

**Type locality.** North Vietnam, Sapa (Cao Ca.), 22°20'N 103°50'E.

**Type material.** Holotype (NHMW) and 5 paratypes (NHMW, ZSMC).

**Remarks.** Based on examination of all the type specimens, which originate from the single locality, this species undoubtedly belongs to a different tribe, Anthicini. It is externally very similar to some species currently placed in *Nitorus* Telnov, 2007, and thus is tentatively placed in this genus.

##### *Nitorus laevipennis* Marseul, 1877

*Anthicus laevipennis* Marseul, 1877: 471.

*Clavicollis laevipennis*: TELNOV (2004): 129 (new combination); CHANDLER et al. (2008): 431 (catalogue, distribution).

*Nitorus laevipennis*: TELNOV (2010): 11 (new combination).

**Type locality.** Japan, Nagasaki.

**Remarks.** This species was listed under *Clavicollis* in the last Palaearctic catalogue (CHANDLER et al. 2008), but was subsequently transferred to *Nitorus* by TELNOV (2010).

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