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A contribution to the knowledge of genus *Dasytidius* Schilsky, 1896 in the eastern Mediterranean region (Coleoptera, Cleroidea, Melyridae Dasytinae)

Riassunto: Contributo alla conoscenza del genere *Dasytidius* Schilsky, 1896 nella regione Mediterranea orientale. (Coleoptera Cleroidea, Melyridae Dasytinae).

Il presente contributo alla conoscenza del genere *Dasytidius* è limitato alle specie presenti nella regione Mediterranea orientale (Grecia, Turchia, Cipro, Siria, Libano, Israele e Giordania, Egitto e Libia). Il genere *Dasytidius* è, qui, assai poco noto e vaste aree all'interno di questa regione sono ancora completamente prive di osservazioni e di dati. Tuttavia, 29 taxa (specie e sottospecie) sono state descritti per i Paesi sopra elencati ed è stato possibile reperire e studiare un ragionevole numero di esemplari (oltre 1500) comprendenti 25 fra specie e sottospecie e includenti un cospicuo numero di tipi. Sono state descritte due nuove specie: *D. daucifloris* n. sp. di Turchia occidentale e *D. majeri* n. sp. di Turchia centro meridionale. Sono proposte 4 nuove sinonimie: *D. indutus dalmatinus* Majer, 1989 = *D. indutus indutus* Kiesenwetter, 1859; *D. impar* Majer, 1996 = *D. indutus* subsp. *funebis* Majer, 1989; *D. insularis* Majer, 1996 = *D. prosperus* Majer, 1989 e *D. malkini* Majer, 1996 = *D. similis* Schilsky, 1896. Lo stato di due taxa è stato cambiato da specie a sottospecie: *D. indutus* subsp. *funebis* Majer, 1989 e *D. infinitus* subsp. *subnudus* Majer, 1991. Un taxon: *D. obscuripes* (Pic, 1896) già sinonimo di *D. nigripes* (Pic, 1894), è stato riabilitato al rango di buona specie. Quattro specie sono rimaste ignote: esse sono state solo brevemente prese in considerazione e non sono state incluse nella tabella di determinazione. Anche le tre forme di *Dasytidius* presenti a Cipro, poiché ritenute endemiche dell'Isola, non sono state incluse nella stessa tabella. Le restanti 22 specie sono invece state esaurientemente trattate e i loro caratteri distintivi descritti, confrontati e rappresentati.

Abstract: The present study is limited to the species which live in the eastern Mediterranean region (Greece, Turkey, Cyprus, Syria, Lebanon, Israel and Jordan, Egypt and Libya). Genus *Dasytidius* is here very poorly known, and, within this region, large areas completely lack records and field research. 29 taxa (species and subspecies) have been, however, described from the mentioned countries, and it has been possible to assemble and study reasonable amounts of materials (over 1500 specimens) covering 25 taxa and including many types. Two new species have been described: *D. daucifloris* n. sp. from Aegean Turkey and *D. majeri* n. sp. from southern-central Turkey. Four new synonymies are proposed: *D. indutus dalmatinus* Majer, 1989 = *D. indutus indutus* Kiesenwetter, 1859; *D. impar* Majer, 1996 = *D. indutus* subsp. *funebis* Majer, 1989; *D. insularis* Majer, 1996 = *D. prosperus* Majer, 1989 and *D. malkini* Majer, 1996 = *D. similis* Schilsky, 1896. Two taxa have been moved from species to subspecies status: *D. indutus* subsp. *funebis* Majer, 1989 n. stat. and *D. infinitus* subsp. *subnudus* Majer, 1991 n. stat. One species has been resurrected: *D. obscuripes* (Pic, 1896), previously considered a junior synonym of *D. nigripes* (Pic, 1894). Four *Dasytidius* species remained unknown: they have been only shortly taken into account and not included in the determination key; the three Cypriot species, being endemic to the Island and recently fully discussed (Liberti 2021), have not been included as well in the key. The remaining 22 taxa have been thoroughly considered, and their anatomies have been described, compared and figured.

Key words: Chaetomalachiini, Greece, Turkey, Syria, Lebanon, Israel, Jordan, Egypt, Libya, new species.

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INTRODUCTION

This writing is dedicated to Karel Majer (1949-2000) to keep alive the memory of his extensive contribution to the knowledge of family Melyridae.

The work was originally based on the study of several Majer types, provisionally kept in the collection of Robert Constantin (who is here gratefully acknowledged for his courteous loan) that, in due time, will be deposited in the Paris Museum. Further materials, including several types, from Milan, Wien and Basel Museums have been examined too, supplemented by non-typical materials from a few, but rich private col-

lections. The writer too had the opportunity to personally observe and collect many *Dasytidius* species in several entomological trips to Greece and Turkey.

Dasytidius are small beetles usually found on flowers feeding on pollen. Although belonging to tribe Chaetomalachiini, their general appearance reminds genus *Danacea* (tribe Danaceini) for size, body densely covered with pale setae (not as thick and scale-like as in *Danacea*) and colour resulting from the overlap of pale setae and blackish integuments.

Dasytidius was introduced by Schilsky (1896: 32H) as a subgenus of *Dasytiscus*, later raised (in part)

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to a good genus (Majer 1989a: 747) assuming as type species (by subsequent designation) *Dasytiscus indutus* Kiesenwetter, 1859. In the years 1989-1996, Karel Majer gave a substantial contribution to its knowledge by describing more than 40 new *Dasytidius* species from the whole Mediterranean area, central Asia (west of Himalaya) and a few from central Africa (Ethiopia and Zaire). It is now a rather large genus: about 70 species (and subspecies) have been listed by Mayor (2007: 389) in his catalog.

The area of interest of this study has been limited to the East Mediterranean region, namely Greece, Turkey, Syria, Lebanon, Israel, Jordan, Egypt, and Libya. The need for an overall understanding of the genus *Dasytidius* in this region originated from the writer's effort to correctly frame the three *Dasytidius* species present in Cyprus (Liberti, 2021).

Very soon, it turned out that genus *Dasytidius*, in the eastern Mediterranean area, is (rather) poorly known. The whole territory needs more field research: blank areas – without any record at all – are large and widespread as appears, even at a quick glance, from the distribution maps proposed here (Figs. 47-49). This is the main reason why this paper must be regarded as incomplete: many species have been discussed here on the ground of scarce materials – even where population samples have been abundant, the number of populations investigated was anyway little – namely insufficient for a reliable understanding of both variability and distribution ranges. And this is why certain decisions relating to the systematic position of several taxa – whether they should be considered species, subspecies, or simply morphae – have been subjective and possibly biased: no doubt that in the future, several adjustments to the views presented here will be necessary to reach a satisfactory picture.

However, given the rather large amounts of specimens and the many types studied, it has been felt worthwhile to assemble a paper to attain a better knowledge of the genus and, hopefully, to supply a ground for future studies on this subject.

MATERIALS AND METHODS

Genus *Dasytidius* is rather homogeneous in external characters and, in certain groups of species, also in median lobe shape. Evident specific differences can be often found in the structure of internal sac only: that is why all dissections have been carried out on perfectly softened abdomens to preserve the integrity of the very

fragile structures of the internal sac; the use of a water-soluble medium – to avoid shrinking and assure good visibility – has been also necessary. Please note that dry mounting of aedeagi, as well as the use of a water insoluble mounting medium, results in loss of characters and useless specimens.

All dissections have been carried out working (in water) under a stereomicroscope (at variable magnification, usually from 15 to 30 ×) with the thinnest micro-pins found on the market (0.1 mm), suitably hooked at the sharp extremity, and fitted with a small wooden handle at the other. The insect was softened by immersion in a solution of ethyl-alcohol in water (5-10%) for many hours (not less than 10-12) at room temperature. Then, the abdomen was carefully detached avoiding damages to the dorsal setae coverage. Afterward, the abdomen only has been further softened by a few minutes boiling in dilute potassium hydroxide solution (2-3%), its dorsal integument opened, the whole content (inclusive of both last sternite and tergite) draw out and (often) boiled 1-2 minutes again in the same KOH solution (the empty abdomen has been glued on the insect cardboard). Eventually, the sclerotized components – namely median lobe with internal sac, tegmen, spicular fork, pygidium and last sternite – have been separated from each other and mounted in DMHF (see Liberti, 2005 for further details on this procedure) on a small transparent cellulose acetate label pinned under the insect cardboard.

This rather long and careful procedure is necessary to keep the dorsal setae undamaged and to allow the internal sac to remain swollen, undamaged and well-visible after mounting.

All drawings have been made with the aid of a 10× grid eyepiece, at variable magnifications (for median lobes mostly 50×).

Photographs have been taken by means of a camera mounted on the microscope and – to extend the focusing depth – combined, as usual, with a suitable software (Helicon Focus 6). An attempt to find sclerotized parts within female genitalia – namely to find both reliable and (reasonably) easily detectable characters for females – did not yield any valuable result.

Note on descriptions

Whenever possible, all descriptions have been carried out having, under the microscope, at least 5-6 specimens of each sex from different localities. When, for certain species, the materials available would not

allow that, a note before the description gives details on the specimens used.

Note on measurements

Body length is always measured from the mandibles to elytral extremity. Body width has been measured as max-width, often at elytral apical half.

Note on drawings

Drawings of aedeagi cannot exactly reproduce the actual shape of an aedeagus as observed by an entomologist studying a dissected and mounted *Dasytidius* specimen, for at least two reasons: i) variability, both intra and inter-population samples: the spotted aedeagus will always be (more or less) different from the model one; ii) deformation due to dehydration of the part. Drying is often cause of shrinkage, and/or deformation, which may be more or less noticeable depending on the specimen conditions (teguments not yet fully hardened, for example) and story (killing method and softening procedure).

Drawings of internal sacs and related spines are not often precise in what concerns spines orientation: for the sake of clarity, indeed, these small organs have been (mostly) reproduced in lateral view (namely seen in full extension), not (always) taking into account the apparent change of shape due to inclinations. The internal sac actual size does not exactly correspond to the figures: the thin line indeed which, in drawings, encircles the spines has been traced only – for graphical purposes – to link spines to median lobes: the internal sac actual size (difficult to assess due to its transparency) is certainly larger.

Note on the expression “meaningful morphological difference”

This phrase has been used in the text to affirm similarities or differences between specimens.

In the writer’s appreciation, a “meaningful morphological difference” between two population samples (or groups of individuals) is a morphological difference reputed to exceed the variability range that can be (qualitatively and approximately) evaluated for each of the species involved.

In other words, a “morphological difference” is “meaningful” – to the author’s own evaluation – when it involves stable characters and there is good confidence that a second entomologist studying the same (or other similar) sample will detect it doubtlessly.

The reliability of such evaluation strongly depends on the sample size studied and, also, on the variability of the applicable characters in other related species of the genus (if known). It embodies, unfortunately, a disappointing amount of subjectivity.

Notes on some old collection localities

“Gjölbanhi” is a locality appearing as typical for a few Turkish species (see also Liberti, 2017: 8). Its spelling and exact location have been, in the past, subject to doubts. The writer reports in full the personal communication received (January 2018) from Isidor Plonski, whose kindness is here acknowledged: “Gjölbanhi”, whose correct spelling should be Gölbasi, is intertwined with Wien Museum materials. The collector was Felix von Luschan, who was a member of two expeditions for rediscovery and retrieval of the famous Heroon of Trysa. He had enough time to collect plants and animals in 1882, which he donated to the Vienna Museum. “Gjölbanhi” has always been identified with the ruins of the ancient settlement Gölbasi-Trysa (approximately 36°16’9"N, 29°54’8"E”).

Jordanian toponyms of Johann Friedrich Klapperich (1913-1987).

To the writer’s knowledge, Johann and Sybille Klapperich (I owe the information on Johann Klapperich’s wife’s name to Gabriele Franzini) collected *Dasytidius*, in Jordan, in the years 1957, 1958, 1962 and 1963, in (at least) 7 localities that have been here understood as follows:

Arda road: should be the road connecting Sweilah (a suburb in the NW of the Greater Amman District) to the town As-Salt in the nearby Balqua Governorate, Aredah being a locality on this road (in the Balqua Governorate) between the two towns.

Dehbeen: or Dibbeen, now a Forest Reserve, or natural Park, about 6-7 Km SW of Jerash.

Homar: has been here understood as Al Homar, today a district of Amman city.

Jerash: (no doubts here) an important town about 40 Km N of Amman.

Shaubak: (no doubts here) or Shoubak, or Shobak, a town in central western Jordan, about 160 Km south of Amman and about 35 Km east of the Jordan river.

Vadi (or Wadi) Sir (or Seir): a suburb in the W of the Greater Amman District.

Zerkatal bei Romana: “Zerka-tal” has been understood as Zarqua (Zerka in German) river valley; Zarqua

is indeed a town close to Amman but also a river affluent of Jordan flowing, in its upper course, between Amman and Jerash with 2-3 branches whose springs are in the north Amman area; Romana likely is a village, today Rummân, about 18 Km north of Sweilah and 12 Km south of Jerash, close to (2-3 Km south of) river Zarqua.

Abbreviations

- hw. = handwritten;
 L = length;
 Cp = median process of sternum VIII [see under Anatomy];
 max = maximum;
 pr. = printed;
 prr. = printed on red labels;
 Spf = spicular fork (see under Anatomy);
 W = width;
^F = only females studied (so that determination might not be fully reliable) (used in "Materials studied" only);
^T = topotypes (used in "Materials studied" only);
 ! = collected by the writer;
 !! = dissected by the writer (applies to typical specimens only).

Depositories

- CAn = collection Fernando Angelini (1948-2021), housed at the Natural History Museum, Zoological Department "La Specola", Florence (Tuscany), Italy.
 CCo = Collection Robert Constantin, Saint Lô (Manche dept.), France.
 CLi = Collection Gianfranco Liberti, Uboldo (Varese prov., Lombardy), Italy.
 CMk = Collection Zdenek Malinka, Opava, Czech Republic.
 CRu = Collection Jan Růžička, Praha, Czech Republic.
 MBa = Naturhistorisches Museum Basel, Switzerland.
 MMi = Museo di Storia Naturale, Milano (Lombardy), Italy.
 MWi = Naturhistorisches Museum Wien, Austria.

Meaning of terms used in descriptions

- Balanced = equally long and wide
 More or less = when used in descriptions, implies a variability in the referred character

ANATOMY

Genus *Dasytidius* differs from all other Chaetomalachiini Majer, 1987 genera for several characters (Majer, 1989a: 745, 746), the most important being: i) central process of male 8th (last) sternite: rod like, conspicuous, long (as in Figs. 10, 34); ii) tegmen fully developed; iii) phallobase (tegmen base, see below) expanded and strongly arched; iv) pronotum without lateral furrows.

Genus *Parathrix* Majer, 1989, very similar in external appearance and tegmen structure, is characterized by a median lobe of aedeagus of different shape (slender and bowed) and median process of last sternite short and inconspicuous.

Meaning of terms used in description

Anatomical terms used in descriptions conform to the Cooter (2006) glossary; however, for a few of them, the meaning is below reported either for easier reference or because not included in the referred list of terms.

Aedeagus: the assembly of three parts: median lobe, internal sac and tegmen.

Internal sac: a membranous structure, often fitted with sclerotized spines, partly inside the median lobe (visible by transparency) and partly external to it (dangling out of the median lobe base). To ease description, the internal sac has been divided in two parts: basal and distal. The basal part is the one inside the median lobe; the distal (or apical) part is the one external, exceeding the median lobe base.

The internal sac of *Dasytidius* bears very important diagnostic characteristics: its perfect visibility is paramount for determination. It may include granules, very small spinules; conical spines, which can be straight or more or less bent (shaped as a rose spine), of various sizes, from small to large; very thin needles (usually grouped in well-visible aggregates or bunches, either roundish or elongate) and rods. At times (not often), the internal sac may be (partly or fully) overturned and extended out from the median lobe apex: in this case, the sac is often broken and, anyway, reading the characters may become difficult.

Spines or spinules: see under the internal sac.

Median lobe: the main part of the aedeagus, in genus *Dasytidius* it takes the approximate shape of an

“L” rotated 90° towards the right. Together with its internal sac, it bears diagnostic characteristics which are paramount for species identification.

Median process of last sternite: see sternite VIII.

Phallobase: the basal part of tegmen which, in genus *Dasytidius*, is expanded and arched.

Spicular fork (abbreviated Spf) (Figs. 9, 19, 35). Three types have been identified:

type 1 (Fig. 35): branches of the fork approximately as long as the basal (undivided) part and clearly widened basally;

type 2 (Fig. 19): branches of the fork approximately as long as the basal (undivided) part and not – or very little – widened basally;

type 3 (Fig. 9): fork branches are clearly longer than the basal (undivided) part and uniformly thin.

Sternite VIII (the last one) rod-like central process (abbreviated Cp) (Figs. 10, 34): can be slightly and shortly forked basally (Fig. 34) or simple (Fig. 10).

Teeth: or spines, see under internal sac.

Tegmen: that part of the aedeagus, approximately elliptical, placed transversally astride the median lobe, whose base (phallobase), strongly bent, is deeply inserted into the median lobe base.

Meaning of median lobe and internal sac characters

In family Melyridae, subfamily Dasytinae, the presence of spines in internal sac is widespread: in (nearly) all the palaearctic genera several species can be found, when not all, showing such structures. As a general rule, the systematics of subfamily Dasytinae has been mainly built (at least until now) based on median lobe shape because more easily observable (than internal sac) and reputed a reliable, stable character. It is indeed true that the internal sac characters, when present, show more variability: particularly the spine number appears to be rather variable (even on individual ground) although the internal sac overall structure – namely spine shapes and types, their arrangement, possible presence of peculiar formation (single large spines, ribbons, assembly of needles, etc.) – seems to be more constant and often characterizes groups of species. Indeed the “value” of internal sac characters turns out to be different depending, at least, on genus. Dealing with *Dasytidius*, in doubtful cases, the writer assumed – rightly or wrongly – the general rule as still valid. That is why – in the species group *syriacus-alfierii* – the median

lobe shape has been considered more important than the characters found in internal sac (like spines number, shape and related structures) to define a species.

Description outline

Body: can be parallel or posteriorly (slightly) widened, convex or depressed, densely covered with (usually) pale, thin setae that, on pronotum, converge towards a point more or less in the middle of posterior border (Figs. 1-5) and, on lateral borders (both pronotum and elytra) often take the shape of a lateral fringe.

Size: is given in mm:

large means >3 mm;

small means <3 mm.

regular means that the size span is around 3.0 mm.

Dorsal integuments are usually blackish with greenish reflexes or, at times, very dark olive green. Antennae and legs can be from blackish to entirely yellowish. Pubescence is long, from rather sparse (as in Fig. 1) to very dense (as, for example, in Fig. 5); its color whitish to silver-yellowish; it can be simple (namely all setae recumbent), double (partly recumbent and partly erect setae) or intermediate between the two (with both recumbent and slant setae); the lateral fringe can be more or less developed.

Pronotum can be convex or rather flattened, transverse or very transverse ($W/L > \approx 1.4$); wider, as wide as or narrower than elytral base; lateral sides are often crenulated, its max width can be in the middle or in the basal third.

Elytra have humeral callus well developed; apically can be flattened or convex; elytral apices, when rounded, can be so either jointly or separately; apices can be divergent or joint together; apical angle, on each elytron, can be rounded or angular: either obtuse, rectangular or acute.

CHECKLIST, UNKNOWN AND DOUBTFUL SPECIES, DETERMINATION KEY

Checklist

25 species (29 including subspecies) are below listed in alphabetical order. Out of them, 4 species, marked with an asterisk – and shortly considered here below – remained unknown or doubtful; the other 21 are included in the “Discussion of the species” and listed by resemblance, following the numerical tag.

- 9) *alfierii* (Wittmer, 1935) Egypt (Sinai), Jordan.
 = *Dasytidius atratus* Majer, 1991
 * *aureescens* Majer, 1991 Syria.
 1) *brevicornis* Majer, 1996 Western Turkey, Dodecanese Islands.
 21) *congruens* Majer, 1989 Rhodes, Sporades, Turkey.
 * *crassicornis* Majer, 1996 Syria.
 3) *emgei* (Reitter, 1884) Greece (Peloponnese, Attica). Crete.
 15) *ethologus* Majer, 1989 western Turkey.
 17) *daucifloris* sp. n. Israel, Lebanon, Syria, Turkey.
 * *fulvipes* (Reitter, 1885) Cyprus.
 12) *inchoatus* Majer, 1991
 16) *indutus* subsp. *aegaeicus* Liberti, 1986 Crete, Aegean Islands, Rhodes, Turkey (Antalya).
 subsp. *funbris* Majer, 1989 Turkey.
 = *Dasytidius impar* Majer, 1996 [syn. n.]
 subsp. *indutus* Kiesenwetter, 1859 Continental Greece, Croatia (Dalmatia).
 = *Dasytiscus indutus* var. *nigricornis* Schilsky, 1896
 = *Dasytidius indutus* subsp. *dalmatinus* Majer, 1989 (syn. n.)
 subsp. *virescens* (Baudi, 1873) Cyprus.
 19) *infinitus* subsp. *subnudus* Majer, 1991 Iran.
 subsp. *infinitus* Majer, 1991 [stat. n.] Israel, Jordan, Syria, Turkey.
 13) *kalalovae* Majer, 1991 Iran, Iraq, Turkey.
 5) *latissimus* Majer, 1989 Turkey.
 = *Dasytidius avius* Majer, 1989
 14) *majeri* sp. n. Turkey.
 6) *nigripes* (Pic, 1894) Turkey (and doubtfully Iran, Iraq, Syria).
 = *Dasytidius attenuatus* Majer, 1991
 = *Dasytidius svihlai* Majer, 1991
 7) *obscuripes* (Pic, 1896) [resurrected] Rhodes.
 20) *optivus* Majer, 1989 Turkey.
 4) *petrowi* (Pic, 1923) Egypt, Lybia.
- 2) *prosperus* Majer, 1989 Greece (Lesvos Island), Turkey.
 = *Dasytidius insularis* Majer, 1996 [syn. n.]
 * *recticollis* Majer, 1996 Syria.
 18) *similis* (Schilsky, 1896) Turkey.
 = *Dasytidius malkini* Majer, 1996 [syn. n.]
 11) *subsyriacus* Majer, 1991 Jordan, Syria.
 10) *syriacus* (Reitter, 1885) Israel, Jordan, Lebanon, Syria.
 = *Dasytiscus syriacus* var. *obscuripes* Sahlberg, 1913
 8) *valdelatus* Liberti, 2021 Cyprus.

Unknown or doubtful species

Dasytidius aureescens Majer, 1991

Dasytidius aureescens Majer, 1991a: 4, Figs. 7, 32, 35, 52, 86, loc. typ. Aleppo (Syria); Majer 1991b: 19; 1996a: 158.

A poorly known species, (apparently) described on 1 ♂ only, remained unknown to the writer.

From the description and median lobe drawing supplied by its author, this species might be close to *Dasytidius alfierii* Wittmer.

Dasytidius crassicornis Majer, 1996

Dasytidius crassicornis Majer, 1996a: 158, 162, Figs. 6-9, loc. typ. Djebel Aevi (Northern Syria).

In the description of this species the holotype (♂) only is mentioned. But 4 further specimens (labeled as paratypes) are at MBa (Matthias Borer personal communication), determined by Majer and not reported in description. Out of these, 2 have been studied, unluckily useless to understand the species, labeled:

1 ♂ (dissected by Majer. unfortunately deprived of median lobe): "Syria bor. occ. 800 m / Djebel Ansariya / Mardash 18.VI.1989 / Jan Macek leg." pr.; "*Dasytidius* ♂ / *crassicornis* n. sp. / Paratype / K. Majer det. 1993" prr.

1 ♀: "Syria bor. occ. 900 m / Djebel Ansariya / Quadmus env. 21.VIII.1988 / Jan Macek leg." pr.; "*Dasytidius* # / *crassicornis* n. sp. / Paratype / K. Majer det. 1993" prr.

Majer reports that, on external characters, this species is close to *D. syriacus* but antennae more robust. From the drawing supplied, the median lobes of the two species look very different.

Dasytidius fulvipes (Reitter, 1885)

Dasytiscus fulvipes Reitter 1885: 242, 244; Schilsky 1896: Nrs. 78 and 32 M [*Dasytiscus* (*Dasytidius*)]; Majer 1989b:

139-141, 154, figs. 7, 8, 43, 58, 75 [*Dasytidius*; lectotype], loc. typ. Syria; Majer 1991b: 18; Majer 1996a: 157.

No types of this species have been studied. Based on Majer re-description and drawings (Majer 1989b: 139, Fig. 58) it looks like a possible senior synonym of *D. insularis* and *D. prosperus*.

Paralectotypes locality: Haifa. Other localities reported by Majer (1989b: 141): Turkey: Baba Dagħ, Izmir, Akbes, Demirchi (south of Simav), Derbent. Israel: Jerusalem, Kiriat Anwim, Tel Aviv.

Distribution: Israel; Lebanon; Syria; Turkey.

2 specimens (both MBa), regarded as belonging to this species, have been studied:

1 ♂ (dissected by Majer), labeled “Smyrna / Hilf / Hist. coll. Nr. / 32498” hw.; “*Dasytidius / fulvipes* / (Reitter, 1885) / K. Majer det. 1994” pr.

1 ♀, labeled: “Syrien / Haifa / Reitter” pr.; “J. Bourg. [Jules Bourgeois]” hw. (looking like Schilsky handwriting); “*Dasytidius / fulvipes* (Reitter) / K. Majer det. 1993” pr.

The above ♂ specimen, determined as *D. fulvipes* by Majer, does not show any meaningful difference from the Lesvos and the Turkish specimens of *D. insularis* and *D. prosperus* studied by the writer (see below): a further hint of a possible synonymy.

A third specimen (♂, MBa) lacking locality, labeled only “coll. Kraatz” pr., “*Dasytiscus / fulvipes* Reitt. / det. Richard Hicker” hw. (by Hicker) and “*Dasytidius / fulvipes* / (Reitter) / K. Majer det. 1987 / Homotypus” hw. (by Majer) on dissection appeared to belong to a different species, namely *D. daucifloris* n. sp. here below described.

Dasytidius recticollis Majer, 1996

D. recticollis Majer, 1996a: 158, 163, Figs. 10-14, loc. typ. Djebel Akrab (Northern Syria).

A poorly known species, apparently described on 1 ♂ only, remained unknown to the writer.

Its author suggests a median lobe resemblance with *D. optivus*, but, looking at the drawing supplied (Majer 1996a: Fig. 14), the internal sac looks rather different.

Determination key

This key is based on external characters only. It does not include the 3 *Dasytidius* species from Cyprus – which are considered endemic to the island and (as a guess) may not be found on the mainland –

and should be regarded as a first attempt: it is indeed far from being satisfactory. Two drawbacks are very important:

- i) insufficient materials have been available (further field research is badly needed) to understand anatomical variability. Legs color, for example, has been extensively used in this key, but its reliability has not been sufficiently assessed.
- ii) It is incomplete: at least 4 species (above listed) remained unknown, or doubtful, to the writer and were not included in the key. Because of the poor knowledge we have of genus *Dasytidius* in the eastern Mediterranean region, it is well possible that further “new” (undescribed) species could be discovered in the future.

- 1 Antennae short, all articles very transverse, compressed.....2
- Antennae longer, at least articles 6-9 globular, either balanced or transverse.....10
- 2 Femora and tibiae uniformly yellow or reddish (and tarsi at least in part yellowish)3
- Femora dark, tibiae (and tarsi) as dark as (or paler than) femora5
- 3 Pronotum convex, at least in anterior half (looking at the insect from above, lateral borders may be visible only in posterior half), lateral sides weakly crenulated to smooth4
- Pronotum not very convex (looking at the insect from above, lateral borders are well visible), lateral sides clearly crenulated.....(18) *similis*
- 4 Elytral pubescence whitish, long, dense, recumbent with several setae half raised close to borders. Pronotal pubescence dense and long, converging towards a point above posterior border (although close to it, as in Fig. 4). 2nd and 3rd tarsal articles sub-rectangular. Usually slightly larger (L ≥ 3 mm).(19) *infinitus* (both subspecies)
- Elytral pubescence rather variable, often dense, with all setae recumbent (absence of half-raised setae). Pronotal pubescence converging towards a point just in the middle of posterior border (Fig. 5). 2nd and 3rd tarsal articles expanded, heart-shaped. Usually slightly smaller (L ≤ 3.0 mm).....(3) *emgei*
- 5 At least middle and hind tibiae yellowish in part..6

- All tibiae brown to dark brown (at times anterior ones paler apically)9
- 6 Pronotum integuments bright, punctures small and shallow7
- Pronotum integuments rough, rather dull(2) *prosperus*
- 7 Size larger ($L > 3$ mm). Dorsal pubescence rather sparse, long and thin, yellowish8
- Size smaller ($L < 3$ mm). Dorsal pubescence dense, long and thin, withish(21) *congruens*
- 8 Dorsal integuments blackish, elytral shape clearly widened in apical half, pronotum trapezoidal with lateral sides nearly straight(16) *indutus indutus*
- Dorsal integuments dark olive-green, elytral shape slightly widened in apical half or even parallel, pronotum not clearly trapezoidal with lateral sides rounded(16) *indutus aegaeicus*, (17) *daucifloris*
- 9 Dorsal integuments black, pubescence white. Pronotum very transverse, sub-rectangular with lateral sides more or less parallel, weakly crenulated(1) *brevicornis*
- Dorsal integuments blackish-bronze, pubescence yellowish. Pronotum less transverse with lateral sides rounded (max-width in the middle), clearly crenulated(16) *indutus funebris*
- 10 Legs entirely black11
- Femora and/or tibiae yellow (at least in part) or brownish16
- 11 Pronotum very transverse, slightly exceeding elytral base. Large ($L = 3.2-3.9$ mm)(5) *latissimus*
- Pronotum moderately transverse, not exceeding elytral base. Smaller ($L < 3.2$ mm)12
- 12 Pronotum sub-trapezoidal, slightly wider posteriorly than anteriorly, max width behind the middle13
- Pronotum sub-rectangular, max width in the middle15
- 13 Elytral pubescence white, sparse and recumbent, absence of half-raised setae near borders(10) *syriacus* morpha
- Elytral pubescence grey to pale yellowish, dense, recumbent with several half-raised setae close to borders14
- 14 Antennal articles 9 and 10 globular or just transverse(6) *nigripes*
- Antennal articles 9 and 10 clearly transverse(7) *obscuripes*
- 15 Elytral (and, to a lesser extent, also pronotal) surface evidently alutaceous; elytral pubescence entirely recumbent(13) *kalalovae*
- Elytral (and, to a lesser extent, also pronotal) surface rather bright; elytral pubescence recumbent but, close to borders, in part half-raised(20) *optimus*
- 16 Both femora and tibiae yellow(4) *petrowi*
- Femora darker than tibiae, tibiae at least in part yellow17
- 17 Pronotal surface rough, rather dull, with strong punctures(15) *ethologus*
- Pronotal surface rather smooth, bright, with shallow punctures18
- 18 Femora brownish, not much darker than tibiae(14) *majeri*
- Femora bronzed, clearly darker than tibiae(9) *alfierii*, (10) *syriacus*, (11) *subsyrriacus*

DISCUSSION OF THE SPECIES

The three species of Cyprus (*inchoatus* Majer, *indutus* subsp. *virescens* Baudi and *valdelatus* Liberti) appear in the checklist here above but, having been fully discussed recently (Liberti, 2021: 38, 39, 41), they have been only shortly included here below.

1. *Dasytidius brevicornis* Majer, 1996 (Figs. 20, 21, 48) *Dasytidius brevicornis* Majer 1996a: 158, 164, figs. 15-19, loc. typ. Bergama (ancient Pergamon, Izmir prov.).

The identification of this species has been based on types examination, description and drawings.

Types studied

Holotype (♂, dissected by Majer, CCo) and 4 Paratypes (2 ♂♂, 2 ♀♀, 1 ♂ dissected by Majer, CCo) labeled: "Turkey, Bergama / (ancient Pergamum) / 18-21.V.1981 / B. Malkin" pr.; "Holo [or Para] / typus" prr. [but 1 female]; "Dasytidius / brevicornis sp. n. / K. Majer det.,

1988” hw. Majer [but 1 female]; “Holotypus [or Paratypus] / *Dasytidius* / *brevicornis* / Majer 1996” prr. added by R. Constantin.

4 Paratypes (1 ♂, dry dissected by Constantin, 3 ♀♀, CCo), labeled: “Turkey: Bergama / Pergamon” pr.; “16-17.VI.1979 / B. & H. Malkin” pr.; “Para / typus” prr.; “*Dasytidius* / *brevicornis* sp. n. / K. Majer det., 1988” hw. Majer; “Paratype / *Dasytidius* / *brevicornis* / Majer 1996” prr. added by R. Constantin.

4 Paratypes (1 ♂ !!, 3 ♀♀, CCo), labeled: “Turkey: ancient / Priene, 13.V.1979 / B. Malkin” pr.; “Para / typus” prr.; “*Dasytidius* / *brevicornis* sp. n. / K. Majer det., 1988” hw. Majer; “Paratype / *Dasytidius* / *brevicornis* / Majer 1996” prr. added by R. Constantin.

Other materials studied

GREECE

Lesvos Island: Laphionas (Silfverberg, 2005, Finnish Museum of Natural History, Helsinki).

Samos Island: Samos (Rober, 1989, CLi).

TURKEY

Izmir prov.: Özdere (!, 2010, CLi); Dikili (!, 2010, CLi).

Aydin prov.: Kuşadası (Ponel, 2005, CLi).

Paratypes localities: Ancient Priene

Distribution: Aegean Turkey and Dodecanese islands.

Description

Dimensions (in mm). ♂♂: length 2.7-3.4, width 1.0-1.1; ♀♀: length 3.1-3.5, width 1.3-1.4

♂. Body parallel, rather wide and depressed. Dorsal integuments brilliant black with greenish reflections. Legs entirely black, antennae black with articles 2-6 variably paler: yellow to dark brown. Pubescence is white-yellowish, long and rather dense, simple, free from erect setae although, in certain specimens, there are several raised setae close to elytral border; elytral lateral fringe well visible.

Antennae short, articles 4-10 transverse, articles 4-8 with internal angle clear cut, acute. Pronotum very transverse (W/L = 1.35-1.45), as wide as elytra, lateral sides crenulated, rounded, posterior side (bowed) shorter than anterior (straight). Elytral apices depressed, more or less jointly rounded, apical angles rectangular to just obtuse.

Median lobe as in Fig. 20. Internal sac with basal part and upper half of distal part both granulose;

lower half of distal part fitted with 8 conical teeth placed in two rows, symmetrically (Fig. 21). Cp variable: either simple or shortly forked basally. Spf type 2, but intermediate to type 1.

♀. As the male but antennae shorter with articles more compressed, eyes slightly less prominent and elytra widened and convex in apical half, with apices more flattened and apical angle rectangular to slightly acute.

Notes

This species seems to be limited to the Izmir area in Turkey and the northern Dodecanese islands in Greece.

Placed by Majer (1996a: 158) in the *optimus*-group, the drawing supplied (although excellent) of the internal sac does not put in due evidence the symmetrical disposition of the 8 conical spines which is, in writer's opinion, a good diagnostic character for this species.

2. *Dasytidius prosperus* Majer, 1989 (Figs. 27, 28)

Dasytidius prosperus Majer 1989b: 141, 154, figs. 2, 9, 10, 44, 59, 78, loc. typ. Ankara-Baraj; Majer 1991b: 19; Majer 1996a: 157.

= *Dasytidius insularis* Majer 1996a: 157, 162, figs. 1-4, loc. typ. Mytilini on Lesvos Island (syn. n.).

Both taxa were identified by paratypes examination, together with original descriptions and drawings.

Types studied

Of *D. prosperus*:

1 paratype (♂ !!, CCo): “Ankara, Baraj / Anat., 3-4.VII.1947 / Exp. N. Mus. ČSR” pr.; “*Dasytidius* / *prosperus* sp. n. / K. Majer det. 1986 / Paratypus” prr.

Of *D. insularis*:

1 paratype (♂ !!, CCo): “Lesvos, Greece / Mytilini” pr., “2.VIII.1959 / Dr. Gozmány” pr.; “Para / typus” prr.; “*Dasytidius* / *insularis* sp. n. / Majer det. 1989 / Paratypus” hw. by Majer; “Paratype / *Dasytidius* / *insularis* / Majer 1996” prr. added by Constantin.

Taking into account the (rather limited) variability observed (both “intra” and “inter-populations”) in the samples studied, the writer was not able to find any

“meaningful morphological difference” (see the note here above under “Materials and Methods”) between these two paratypes.

Other materials studied

GREECE

Lesvos: Arisvi (Berra, 1999, CLi)^T.

TURKEY

Bursa prov.: Yalıciflik (Mahunka, 2002, CLi).

Çanakkale prov.: Kirazlı (Angelini, 2010, CLi).

Paratypes localities (of *D. prosperus*): Torba (6 Km N Bodrum, Mugla prov.).

Distribution: Greece (Lesvos Island only), Turkey.

Description

Dimensions (in mm). ♂♂: length 2.5-3.0, width 0.85-1.0; ♀♀: length 2.9-3.2, width 1.1-1.2.

♂. Body parallel, pronotum convex, elytra depressed in apical half. Dorsal integuments black with greenish reflections, rather dull and rough on pronotum, rather smooth on elytra. Femora yellow to brown, tibiae yellow and tarsi variably darker than tibiae. Antennae with articles 1 and 9-11 dark brown, articles 2-4 yellow, 5-8 variably darkened. Pubescence silver-yellowish, long and dense, nearly double (many setae well raised depending on specimens), lateral fringe visible.

Antennae short, articles 4-10 strongly transverse. Pronotum transverse (W/L = 1.25-1.35); strongly convex in anterior third; crenulated on lateral sides; posterior border widely bowed; max-width about in the middle. Elytra convex in basal half and depressed towards apex; apices jointly truncated [or, in certain specimens from Kirazlı (Çanakkale) more or less jointly rounded], apical angle approximately rectangular.

Median lobe as in Fig 27, 28. Internal sac: basal part with a granulose zone; apical part simple. Cp basally widened. Spf type 1.

♀. Very similar to ♂ but elytra widened in apical half, with apices more rounded (not clearly truncated as in ♂).

Notes

Majer, in his description, reports *D. prosperus* as very similar to *D. fulvipes*, but less decumbent pu-

bescence and different median lobe shape (not detailed): this difference (Mayer, 1989b: compare Figs. 58, 59) is tiny and may not be meaningful: aedeagus of Fig. 59 (Majer, 1989b) looks like being slightly shrunk, at least apically (see “Note on drawing” above): several aedeagi of the population samples studied are closer to Fig. 58 (Majer, 1989b), rather than to Fig. 59 (Majer, 1989b). That is why, in the writer’s opinion, the former might turn out to be a junior synonym of the latter (see also discussion above, under “Unknown or doubtful species”).

3. *Dasytidius emgei* (Reitter, 1884) (Figs. 5, 29)

Dasytiscus Emgei Reitter 1884: 79-80, loc. typ. Attica; Reitter 1885: 242; Reitter 1890: 360, 361; Bourgeios 1885: 271; Schilsky 1896: Nrs. 69 and 32 K. [*Dasytiscus* (*Dasytidius*)]; Jakobson, 1912: 708; Liberti, 1986: 185, 190, 192-193, figs. 17-19; Majer, 1989a: 764, fig. 7; Majer, 1989b: 141-143, 154, figs. 1, 5, 11, 12, 34, 38, 45, 46, 60, 61, 76 [*Dasytidius*]; Majer, 1991b: 18; 1996a: 158.

The interpretation of this species is based on the Reitter description, past examination of types (Liberti, 1986: 185), Majer description and drawings (1989b: 141) and on the fact that, in the Atiki-Pireas region (typical locality), no other similar species could be found. Several topotypes have been available for study, a couple of which determined by Majer.

Types studied

The Reitter types (studied by the writer more than 37 years ago) have been detailed in Liberti (1986: 192). Several topotypes (detailed here below under “Materials studied”) have been available for study, including the two following ones determined by Majer:

1 ♂ and 1 ♀ (MMi) labeled “Halandri (Greccia) [sic !; Halandri is a NE suburb of Athens] / 19.VII.1934 Ritter” hw.; “*Dasytidius* / *emgei* (Reitter) / K. Majer det. 1987 / Homotypus” hw.

Other materials studied

GREECE

Fokida: Delfi (Pesarini, 1985, CLi); Itea (!, 1998, CLi). Viotia: Antikira nr. Distomo (!, 1997, CLi); Kiriaki (!, 1997, CLi).

Atiki-Pireas: Legrena (!, 1997, CLi)^T; Palea Fokaia (!, 1997, CLi)^T; Saronida (!, 1997, CLi)^T; Skala Oropou (!, 1997, CLi)^T.

Evia: Gimnò (!, 1997, CLi).

Ahaia: Pagianeika [Kalavrita 13 Km NE] (!, 1981, CLi).

Korinthia: Kilimodion (!, 1981, CLi).

Argolida: Epidaurus (!, 1981, CLi).

Distribution: Greece.

Description

Dimensions (in mm). ♂♂: length 2.4-2.8, width 0.8-0.9; ♀♀: length 2.8-3.2, width 1.0-1.1.

♂. Body parallel, convex, although flattened on elytral apical third. Size small: length 2.4-2.8, width 0.8-0.9.

Dorsal integuments black with a greenish tone. Femora and tibiae yellow; tarsi yellow with articles extremities more or less darkened. Antennae with articles 1 and 8-11 dark-brown, 2-4 yellow and 5-7 variably darkened. Pubescence silver-yellowish, very dense, simple; lateral fringe well developed.

Antennal article 3 balanced, sub-triangular, 4-10 transverse, compressed, 4-6 sub-triangular. Pronotum convex, transverse (W/L = 1.25-1.35), finely crenulated on lateral borders, basal angles widely rounded, narrowed in anterior half, max width slightly behind the middle. Elytra convex basally and flattened apically, apices separately rounded, apical angle rounded, obtuse.

Median lobe as in Fig. 29. Internal sac: basal part with a granulose zone; distal part simple. Cp slightly widened and shortly forked at base. Spf type 1.

♀. Similar to male although slightly bigger, can be recognized by the elytral shape, moderately more convex and widened in apical half.

Notes

Very common all over southern continental Greece.

4. *Dasytidius petrowi* (Pic, 1923) (Fig. 31)

Dasytiscus (Dasytidius) petrowi Pic, 1923: 9, loc. typ. Lake Mariout near Alexandria (Egypt); Majer, 1990: 41; Majer 1996: 158.

This species was identified on several topotypes bearing the Majer determination, supplemented by the excellent re-description and drawings.

Types studied

No types have been studied. However, nearly 30 specimens are at MMi labeled: "Ikingi Mariout / 16.III.1935 Egitto [Egypt] / W. Wittmer" printed (but the date handwritten) and "*Dasytidius / petrowi* (Pic) / det. Majer, 1987 / (teste Lib. 2007)" printed and added by the writer. These specimens are topotypes and belong to the same population sample used by Majer to re-describe this species (Majer, 1990: 41).

Other materials studied

LIBYA

Tripolitania: Gharian (Schatzmayr; 1926, MMi).

EGYPT

Soloum (Koch, 1933, MMi).

Distribution: Egypt, Libya.

Description

Dimensions (in mm). ♂♂: length 2.7-3.0, width 0.9-1.0; ♀♀: length 3.3-4.1, width 1.1-1.2.

♂. Body parallel and rather depressed, size small to regular. Dorsal integuments black, rough. Antennae dark with at least articles 2 and 3 yellow, often articles 4-6 at least in part yellowish. Legs entirely yellow but tarsal articles often more or less darkened. Pubescence (in well preserved specimens) very dense and covering, pale grey with a hint of greenish. Underneath integuments dark brown, bright. Lateral fringe narrow: nearly absent on elytral border and just noticeable on pronotum lateral border.

Antennal articles 6-10 clearly transverse. Pronotum feebly transverse (W/L = 1.15-1.22), slightly narrower than elytra, anterior side straight, lateral sides feebly rounded and clearly crenulated (and more so in anterior half), max width in basal third. Elytra parallel, apically truncated, apical angle well defined, rectangular to obtuse.

Median lobe as in Fig. 31. Basal part of internal sac simple, distal part with tiny granules and fitted with a roundish (or sub-rectangular) zone of a needle aggregate which, on dissection and inclusion, may at times result more or less warped. Cp forked basally. Spf type 1, at times intermediate to type 2.

♀. As the ♂ but slightly larger, body more convex, elytra widened in posterior half, pronotum more

transverse, antennae shorter with articles 5-10 very transverse.

Notes

The above description has been based on the abundant materials, originally owned by the Duino Museum "Pietro Rossi", which was transferred to MMi after the death of its founder, the Prince Carl Alexander von Thurn und Taxis (1881-1937) (after the first world war, when Trieste became Italian, his name was "translated" as Alessandro della Torre e Tasso and he was made "Duca di Castel Duino"). These same materials were studied by Karel Majer in 1987.

The two further populations studied (see "Materials Studied" here above) appear constant and very similar to the topotypical one.

"Ikingi" – collecting site of the topotypes (see "Types Studied") – on Lake Mariout was a small railway station about 5 Km SW of Alexandria used by Walter Wittmer when, 20 years old, he was working as a collector for the Duino Museum "Pietro Rossi" mentioned above. The other materials studied were collected by Arturo Schatzmayr (1880-1950) and by Carl Koch (1904-1970), both collaborators of Prince Thurn und Taxis in the same Museum.

5. *Dasytidius latissimus* Majer, 1989 (Figs. 3, 32-35)
Dasytidius latissimus Majer, 1989b: 147, 149, 154, figs. 4, 21, 22, 52, 66, 82, loc. typ. Kyzil Dag, Taurus [a locality remained unknown, probably north of Tarsus (Liberti, 2017: 8)]; Majer, 1996a: 158; Majer, 1996b: 466, figs. 69, 71, 73.

= *Dasytiscus* (*Dasytidius*) *nigripes* Schilsky (not Pic), 1896: Nrs. 68-68a and 34 K. [this Schilsky mistake originated from the misidentification of materials (determined as *nigripes* but actually *latissimus*) sent by Pic to Schilsky as a gift (Majer, 1996b: 466)].

= *Dasytidius avius* Majer, 1989b: 149-151, 154, figs. 23-25, 67-69, 83, loc. typ. Pozanti [north of Tarsus]; Majer, 1991b: 17. [Synonymized by Majer, 1996b: 466].

= *Dasytidius nigripes* Majer (not Pic), 1991a: 1-2, 16, figs. 1, 6, 31, 47, 63, 82 [re-description of *D. nigripes* based on the same misidentified Schilsky's materials (received from Pic) reported above (Majer, 1996b: 466)]; Majer, 1991b: 16.

The interpretation of this species – well characterized by large size and very transverse pronotum – is based on description and drawings, both excellent, supplied by Majer. Many specimens have been studied

from Mersin province localities (deemed to be) not far from the typical one.

Types studied

No type of *Dasytidius latissimus* has been studied. Of *D. avius* 5 paratypes [1 ♂ dissected by Majer (dated 2.VII.1983), 1 ♂ !!, 3 ♀♀, CCo] labeled: "Turcia 1.VII.1983 / Pozanti / J. Hladil leg." pr.; "Dasytidius / avius sp. n. / K. Majer det., 1986 / Paratypus" prr.; "Dasytidius / latissimus / Majer 1989, Constantin det., 2010" white (the latter label on 1 ♀ only).

Other materials studied

TURKEY

Mersin prov.: Aydinlar (Gillerfors, 1992, CLi); Camliyayla (Saltini, 2006, CLi); Erdemli (Malinka, 2005, CMk; 1, 2011, CLi); Guzeloluk (Wellschmied, 1990, CCo; Malinka, 1996, CMk); Kargicak (Angelini, 2011, CLi).

Distribution: central-southern Turkey.

Description

A species characterized by large size and very large and transverse pronotum.

Dimensions (in mm). ♂♂: length 3.1-3.8, width 1.1-1.4; ♀♀: length 3.8-4.2, width 1.5-1.7.

♂. Body parallel, large and wide; rather depressed (Fig. 3). Dorsal integuments brilliant black with greenish reflections; legs dark brown with paler tarsi; antennal article 1 black, 2-3 yellowish, 4-6 variably yellow to brown, 7-11 blackish. Pubescence pale grey-yellowish, dense, long, double: mostly recumbent but with sparse, upright setae; elytral lateral fringe well developed.

Antennal articles 2-4 elongate; 5-10 balanced or transverse; 4-6 subtriangular; 7-10 globular. Pronotum very transverse (W/L = 1.45-1.55), slightly wider than elytra, sub-rectangular, lateral sides rather straight, crenulated. Elytra separately rounded apically, apical angle rounded, undefined.

Median lobe as in Figs. 32, 33. Basal part of internal sac showing a granulose long zone inside the median lobe, distal part with 8-12 conical, moderately bent, small spines, one of which is clearly larger than the others (Figs. 32, 33). Cp forked basally (Fig. 34). Spf type 1 (Fig. 35).

♀. Very similar to ♂, can be (not so easily) rec-

ognized only by elytra more widened in apical half, with apices just flattened and more evidently separately rounded.

Notes

Rather similar to *D. nigripes* for median lobe and internal sac, this species is clearly recognizable from all others by pronotum shape. It is apparently limited to the Mersin and Adana area, rather common.

6. *Dasytidius nigripes* (Pic, 1894) (Fig. 4, 36, 37, 48) *Dasytidius nigripes* Pic 1894: 112, Note 2, locality reported "Territoire d'Akbes, Syrie"; Schilsky, 1896: 68 [to be referred to *D. latissimus*]; Jakobson, 1912: 708; Majer, 1991a: 1 [to be referred to *D. latissimus*]; Majer, 1996a: 157 [*Dasytidius*]; Majer 1996b: 466 [lectotype designation], loc. typ. Akbes.

= *Dasytidius attenuatus* Majer, 1991a: 7-8, figs. 11, 22, 39, 66, 90; 1991b: 17, loc. typ. "Tschik Miran, Pietschm. Mesopot." [sic!; locality not identified (Iraq ?)] [Synonymized by Majer, 1996b: 466].

= *Dasytidius svihlai* Majer, 1991b: 6-7, 17, figs. 8, 25, 36, 54, 74, 87, loc. typ. Bez Barma, Zarat, Azerbaijan [Synonymized by Majer, 1996b: 466].

The interpretation of this taxon, although reasonably reliable, leaves room to a few doubts (see "Notes" here below). The typical series was studied and detailed by Majer (1996b: 466): 6 specimens collected by Charles Delagrange († 1927) near Akbez. The Majer's drawing, although precise, appear ambiguous because of the (extroverted and) broken internal sac and the consequent loss of spines.

D. obscuripes, synonymized by Majer (1996b: 466) with *D. nigripes*, is not listed as a synonym here above because deemed to be a good species, as below discussed.

D. svihlai is suspected to be a good species, however this taxon, from Azerbaijan, is outside the scope of this paper.

Types studied

No types have been studied of both *D. nigripes* and *D. attenuatus*.

Of *D. svihlai* (whose synonymy with *D. nigripes* is here reputed doubtful) the following types have been studied:

2 Paratypes (1 ♂ !, 1 ♀, CCo) labeled: "Azerbaidjan, Baku / Bez barma / 10.VI.1979 / V. Kuban leg." hw.

2 Paratypes ♀♀ (MMi and CCo): "USSR, Azerb. SSR. / 90 Km N of Baku / Zarat / 15.VI.1983, 500 m / Vit Kuban leg."

Compared with *D. nigripes* topotypes, the internal sac of *D. svihlai* seems to be rather different, with only 4 spinules.

Other materials studied

TURKEY

Adana prov.: Hasanbeyli (!, 2011, CLi); Yarpuz (Ivie, 2006, MTC).

Hatay prov.: Kirikhan (Malinka, 2005, CMk; !, 2011, CLi)*.

Gaziantep prov.: Fevzipasa (!, 2011, CLi) [two nearby populations have been clustered here].

Sanli Urfa prov.: Hilvan (Hebauer, 1989, CCo)*.

Hakkari prov.: Yuksekova (Dalmon, 1981, CLi)**.

* = internal sac with 8 (Hilvan population sample) or 10-15 (Kirikhan one) black distal spinules, basal part granules aggregate sub-oval, with granules shaped as very small, pale brown spines (see description here below).

** = internal sac with only 9-10 spinules.

Distribution: south-east Turkey (Fig. 46).

Description

Similar to *latissimus* but smaller, with pronotum clearly less transverse.

Dimensions (in mm). ♂♂: length 2.7-3.3, width 1.0-1.1; ♀♀: length 3.4-3.9, width 1.2-1.4.

♂. Body parallel, rather large and depressed. Dorsal integuments brilliant black with greenish reflections; legs blackish with tibiae and tarsi dark brown to black. Antennal article 1 black; 2-3 yellow, then gradually darkened; 10-11 black. Pubescence pale grey-yellowish, dense, long, recumbent with intermingled many partially (and variably) raised setae; elytral lateral fringe not very evident.

Antennal articles 2-4 elongate to balanced; 5-10 transverse; 4-8 subtriangular; 9-10 globular. Pronotum moderately transverse (W/L = 1.2-1.3), as wide as elytra, sub-trapezoidal, lateral sides rather rounded, crenulated; anterior edge just shorter than posterior.

Elytral more or less jointly rounded at apex, apical angle sub-rectangular.

Median lobe somewhat variable, as shown in Figs. 36, 37, where two rather close populations (from Hasanbeyli and from Kirikhan, see above under "Materials studied") are reproduced. Basal part of internal sac with a long granulose zone followed by an aggregate of small needles, which is thin, ribbon-like but in two populations (Kirikhan and Hilvan) where it is sub-oval, loose; apical part with 10-15 conical brown spines, moderately bent and small, at times grouped in two very loose aggregates (Fig. 36: Hasanbeyli population). Cp forked basally, Spf of type 1.

♀. As the male but elytral shape different: widened in apical half, apical angle acute.

Notes

The re-descriptions of *D. nigripes* by Schilsky (1896: 68) and by Majer (1991a: 1), both carried out on the same specimens of the Schilsky collection, actually refer to *D. latissimus*, as Majer (1996b: 466) himself explained (see under *D. latissimus*).

Several specimens of *D. nigripes*, which might be considered topotypes, have been available from about 25 Km N of the typical locality Akbez (Hasanbeyli, Fevzipasa and Yarpuz) and from 35 Km S of Akbez (north of Khirikhan): surprisingly the two populations have median lobes and internal sac slightly different (compare description and Figs. 36 and 37).

The population samples studied – 6 or 7 – would suggest that the Kirikhan one (Fig. 37) would be variant because the majority of the others look rather similar (Fig 36 exemplifies them). But differences are tiny and the number of populations studied insufficient to reach a conclusion.

7. *Dasytidius obscuripes* (Pic, 1896) (resurrected) (Fig. 38)

Dasytiscus indutus var. *obscuripes* Pic 1896: 48; Pic 1937a: 53 (catalog) [*Dasytiscus impressicollis* var. *obscuripes*]; Liberti, 1986: 185, 188-189, 190, figs. 9-12, loc. typ. Rhodes [Lectotype, *Dasytiscus obscuripes* good species]; Majer, 1989b: 147, 154, figs. 19, 20, 50, 51, 65, 81 [*Dasytidius*]; Majer, 1991b: 17; Majer, 1996b: 466 [Synonymized with *D. nigripes*].

A taxon deemed to be a good species (or pos-

sibly a subspecies), not a synonym of *D. nigripes* although similar to it.

The types have been detailed by Liberti (1986: 188-189) whose drawings, unfortunately, do not include the internal sac (reported to have 7-8 spinules). Topotypes from Rhodes are available anyway.

Materials studied

GREECE

Rhodes (Schatzmayer, 1932, MMi; Porta, 1933, MMi); Rhodes: Filerimos (Keller, 2006, CCo)^T.

Distribution: Rhodes.

Description

This description is based on a small series of topotypes (Rhodes, Filerimos) only: 2 ♂♂ and 2 ♀♀.

Dimensions (in mm). ♂♂: length 3.0-3.5, width 1.0-1.2; ♀♀: length 3.1-3.4, width 1.1-1.3.

♂. Body regular to large, parallel, rather depressed mainly on elytral apical half. Dorsal integuments black with greenish reflexes, brilliant. Legs entirely blackish. Antennae blackish with articles 2-4 reddish, 5-7 more or less spotted reddish. Pubescence long, rather dense, silver-grey with a yellowish tone, double (both recumbent and erect setae) on elytral lateral side, nearly double (recumbent and slant setae) on pronotum and elytral disc.

Antennal articles 2-3 balanced to elongate, 4 balanced, 5-8 transverse, 4-5 subtriangular, 9-10 strongly transverse. Pronotum convex on anterior side and rather depressed posteriorly, transverse (W/L = 1.25-1.30), slightly narrower than (or nearly equal to) elytral base; lateral sides crenulated and moderately bowed, basal side feebly arched, anterior straight, shorter; max-width in the middle or just behind. Elytra long, apically depressed, apices separately rounded, divergent, apical angle rounded.

Median lobe as in Fig. 38. Internal sac: basal part with a long granulose zone; distal part with a roundish zone of very small teeth, followed by 5-10 rather small, conical, moderately bent spines. Cp clearly forked basally. Spf type 1.

♀. Can be recognized from males for elytral shape (more widened in apical half, apical angle acute) and for slightly shorter antennae with articles more transverse.

Notes

D. obscuripes was synonymized with *D. nigripes* by Majer, taking into account the median lobe shape similarity. But the differences in internal sac seem to be rather important, at least at subspecific level, although more materials should be studied to assess their meaning. Antennal articles 9 and 10 show a tiny difference too, being more transverse in the former and globular in the latter. However, this character seems to be prone to some variability.

The distribution ranges of the two forms appear considerably far away and the question can be raised whether *D. obscuripes* would be limited to the Island of Rhodes or would be present on mainland too: although the Aegean Turkey has been rather well investigated by several entomologists, our current knowledge is probably still inadequate to have a clear mind on this issue.

8. *Dasytidius valdelatus* Liberti, 2021

Dasytidius valdelatus Liberti, 2021: 26, 30, 41, 54, figs. 13, 31, 32, 33, loc. typ. Pegeia (north of Pafos), Cyprus.

A Cyprus endemic species, close to both *D. nigripes* Pic and *D. latissimus* Majer, already discussed in-depth when described.

9. *Dasytidius alfieri* (Wittmer, 1935) (Fig. 39, 40, 47) *Dasytidiscus* (*Haplothrix*) *alfieri* Wittmer, 1935b: 188-189, loc. typ. Wadi Luotaie (South Sinai, close to St. Katherine's Monastery*); Wittmer, 1979: 192; Majer, 1996a: 157 [*Dasytidius*]; Majer, 1996b: 466, figs. 74-76.

= *Dasytidius atratus* Majer, 1991a: 2-3, figs. 2, 23, 32, 48, 69, 85, loc. typ. Schaubak (Jordan); Majer, 1991b: 17; Majer, 1996b: 466 [synonymized with *D. alfieri* Wittmer].

* = the writer was not able to find the exact location of Wadi Luotaie in the Sinai Peninsula. However, from other descriptions in the same paper (Wittmer, 1935b: 188), it appears that Walter Wittmer (1915-1998) collected at Wadi Luotaie the same day (5.III.1935) he visited Wadi Feran – which is about 25-35 Km NW of S Katherine Monastery – so the two localities must be rather close.

The identification of *D. alfieri* has been based on types examination.

The typical form of *D. alfieri* is known from

southern Sinai (St. Katherine Monastery) and southwest Jordan (Schaubak), a second form (deemed to be a morpha) is known, in a couple of specimens only, from Lebanon (see here below).

Distribution: Sinai Peninsula (probably Jordan and Israel too), Lebanon.

Types studied

Of *D. alfieri*:

2 syntypi (1 ♂, 1 ♀, both at MMi), labeled: “Wadi Luotaie / 5.III.1935 Sinai / W. Wittmer” pr.; “♂” (and ♀ respectively); “type” prr. (and “cotype” respectively); “D. / alfieri / Wittmer” red, hw. [probably by Italo Bucciarelli (♂ only)]; “*Dasytidius* / *alfieri* (Wittmer) / K. Majer det. 1987 / Holotypus [and Paratypus respectively]” white, partly hw.

Of *D. atratus*:

5 paratypes (all part of the same population sample of the holotype; 1 ♂, CCo; 1 ♂, 3 ♀♀, MWi), labeled: “Jordan / 22.IV.1969 / Schaubak / J. & S. Klapperich” pr.; “Para / typus” prr.; “*Dasytidius* / *atratus* sp. n. / K. Majer det. 1987 / Paratypus” pr.

Other materials studied

Typical morpha:

EGYPT

Sinai: Saint Katherine Monastery (Rennen, 1980, CLi) (1 ♂, considered as a topotype).

Lebanon morpha:

Yashoush (31 Km N of Beirut), Nahr Ibrahim source, 500 m (Reuter, 2016, CLi); Caza Böharte, March Ehden m 1500 (Saltini, 2008, CLi).

Description

The description of the typical form is based on the three specimens of southern Sinai only: two syntypes and one ♂ specimen from southern Sinai (all here above detailed). Differential characters of two more specimens from Lebanon (here called “Lebanon morpha”) are also reported.

Dimensions (in mm). ♂♂: length 2.8-3.2, width 0.9-1.1; ♀♀: length 2.9-3.6, width 0.9-1.2.

♂. Body nearly parallel or slightly widened posteriorly, convex. Dorsal integuments black (with greenish reflections in the typical form), rugulose but

bright, with evident alutaceous appearance between punctures; elytra smoother than pronotum. Femora dark, tibiae and tarsi at least partially yellow (typical form) or entirely dark brown (Lebanon morpho). Antennae with articles 2-4 more or less yellowish. Pubescence long, thin and sparse, pale grey-yellowish, simple, lateral fringe under-developed (at times nearly absent), hardly visible on pronotum and elytral apical third.

Antennal articles 4-5 sub-triangular, moderately transverse; articles 7-10 sub-globular, more transverse than the previous ones. Pronotum convex, transverse ($W/L = 1.25-1.30$), slightly narrower than elytral base, sub-trapezoidal, max width just behind the middle, anterior side straight, posterior one arched with posterior angles undefined, moderately crenulated on lateral sides. Elytra rather convex, parallel, apical angles well defined, rectangular; apices jointly rounded.

Median lobe as in Figs. 39-40: the shape of apical half – slightly convex on both the dorsal and ventral sides and not sinuated – is the main difference from *D. syriacus*. Internal sac: basal part fitted with a granulose zone; distal part with several small conical, bent spines: in excess of 20 in the typical form, all approximately same size but a few (3 or 4) which are slightly larger; 6 or 9 (respectively in the two specimens studied) in the “Lebanon” morpho, similar to those of the typical form but more hooked, all the same size. Cp shortly forked basally. Spf type 1.

♀. As the ♂ but on average slightly larger, antennae shorter with article more compressed, body more convex and elytral apical half more widened in apical half.

Notes

In the Near East region extending from Lebanon to the Sinai Peninsula two very similar species can be found: *D. alfieri* Wittmer and *D. syriacus* (Reitter) (one more species, *D. subsyriacus*, is also present but it seems to be better differentiated: see discussion below, under 10 - *D. syriacus*). Whether these two forms actually are good, different species cannot be understood on the ground of morphology alone. For the time being, it is convenient to consider them as true species, defined on – and recognizable from one another by – median lobe apical half only: in *D. syriacus* more or less sinuate, in *D. alfieri* slightly convex dorsally, not sinuate (compare Figs.

38-39 with Figs. 41-43).

Both species however show variability: particularly so in the internal sac spine number and size (as below explained), but also in legs colour and, in *D. syriacus*, in the sinuosity of the median lobe apex. Although objectionable (and not fully satisfactory to the writer), the median lobe shape has been here taken as the guide character to define the two species; all “variant” population sets – showing different internal sac spines – have been deemed to be simply morphae. Such a “choice” has been taken to simplify the whole picture: in this way all existing names keep their meaning, and no new name has been added to the already tangled nomenclature. The resulting scenario looks more or less consistent with the known distribution ranges of the different forms (Fig. 49), but the writer believes that, with more materials available for study, things might substantially change in the future.

Majer synonymized his *D. atratus* with *D. alfieri* in 1996 after studying the two syntypes of the Milan Museum. This synonymy is here confirmed: the two ♂ paratypes of *D. atratus* from Schaubak – the typical locality – here above mentioned have (nearly) identical median lobe and internal sac spines as the southern Sinai *D. alfieri* typical specimens (compare Figs. 39 and 40) although the former looks darker, legs nearly entirely dark brown and dorsal integuments less alutaceous.

It is interesting to note that the “north of dead sea” morpho of *D. syriacus* (see below) went unnoticed to Majer, who embodied it into *D. atratus* [= *D. alfieri* (Majer, 1996b: 466)] probably because of the dark legs: indeed the 4 paratypes of *D. atratus* from Jericho (approximately 150 Km north of Schaubak) collected by Carl Koch (MMi as below reported) belong to the “north of dead sea” morpho of *D. syriacus*.

The *D. alfieri* “Lebanon” morpho has identical median lobe shape but shows a few differences compared with the specimens from Sinai Peninsula (see description above): legs darker, internal sac with less than 10 spines whose shape is strongly hooked (against more than 20 whose shape is only slightly curved). The differences between *D. alfieri* and *D. syriacus* are summarized in the “Notes” of the latter one.

10. *Dasytidius syriacus* (Reitter, 1885) (Figs. 41, 47)
Dasytiscus syriacus Reitter, 1885: 243, 245, locality recorded Haifa, Israel; Bourgeois, 1885: 256, 259, 263-264;

Schilsky, 1896: Nrs. 65-65a and 32 K [*Dasytiscus* (*Dasytidius*)]; Jakobson, 1912: 708; Sahlberg, 1913: 151; Majer, 1991a: 5-6, figs. 8, 37, 54, 64 [*Dasytidius*; lectotype], loc. typ. Haifa; Majer, 1991b: 19; Majer, 1996a: 157.

= *Dasytiscus syriacus* var. *obscuripes* Sahlberg (not Pic) 1913: 151 [listed as a synonym by Mayor, 2007: 391].

The interpretation of *D. syriacus* has been based on descriptions [both original and subsequent one by Majer, supplemented by drawings (1991: 5-6)] and availability of topotypes. It also conforms to the Majer understanding of this species because several Jordanian specimens, determined by Majer, have been available for study.

Two variant population sets have also been found, assigned (with doubts, as below explained) to this species and considered as morphae: from Jordan river valley, north of Dead Sea (here provisionally named “north of Dead Sea” morpha) and Jordan (here temporarily named “south of Dead Sea” morpha).

Materials studied

A) Typical morpha

ISRAEL

Beit Oren on Carmel Ridge (Giusto, 6.IV.2014, CLi); Ha Yarden Park in Jordan Valley (Giusto, 5.IV.2014, CLi); Haifa, Mount Karmel (Schatzmayr, 1933, MMi; Giusto, 6.IV.2014, CLi)^T; Tel Aviv (Schatzmayr, 22.IV.1933, MMi, CCo)*; Wadi Firan in Jordan Valley, 32°13'N 35°32'E (Giusto, 9.IV.2014, CLi) [internal sac conforming to drawing (Fig. 41) but spines uniform and just smaller].

JORDAN

Amman, Arda Road [between Sweilah and As-Salt], 700 m (Klapperich, 4.VI.1957, MWi)**; Amman, Wadi Seir, 600 m (Klapperich, 1.VI.1956, MWi)**; Wadi Al Arab (Hanç, 2008, CMk).

* = homotypus handwritten by Majer [internal sac spines conforming to drawing (Majer 1991: Fig. 88)]

** = specimens determined by Majer

B) “north of Dead Sea” morpha (from Jordan river valley)

13 specimens (5 ♂♂, 8 ♀♀, MMi) “Jericho Pal /

9.IV.1935 / Wittmer” pr.; “*Dasytidius / alferii* (Wittmer) / det. Liberti 2007” pr.

1 specimen (♂, CCo) “Jerash” hw. by Klapperich; “Jordan 4.V.1963 / S. & J. Klapperich” pr.; “*Dasytidius / subsyriacus* / Majer 1991 / R. Constantin det. 2018” pr. 4 specimens (2 ♂♂, 2 ♀♀, CLi) “Israel, Jordan Valley / Adam Junction m 270 / 32°07'N 35°30'E / 4.IV.2014 C. Giusto” pr.

4 specimens (1 ♂, 3 ♀♀, MMi: these ones paratypes of *D. atratus* Majer) labeled “Jericho Pal. / 27.IV.1933 / C. Koch” pr.; “Paratypus” pr.; “*D. / nigripes* / Pic” blue-green hw. (only one specimen) “*Dasytidius / atratus* sp. n. / K. Majer det. 1987 / Paratypus” hw. by Majer.

C) “south of Dead Sea” morpha (from Jordan)

3 specimens (2 ♂♂, 1 ♀, CLi): Al Tafilah 10 Km W (Brustel, 17.IV.2008, CLi);

Distribution: Israel, Jordan (and probably Lebanon and Syria).

Description

Dimensions (in mm). ♂♂: length 2.5-3.2, width 0.8-1.0; ♀♀: length 2.9-3.3, width 1.1-1.4.

♂. Body parallel or slightly widened posteriorly, rather convex. Dorsal integuments blackish, bright. Femora blackish, tibiae and tarsi yellowish. Antennae with articles 2-3 yellowish, 4-6 variably darker, 7-11 blackish. Pubescence pale yellowish, rather thin and sparse, simple and in part raised, lateral fringe detectable on pronotum.

Antennal article 3 small and elongate; 4 approximately balanced; 5-10 transverse. Pronotum transverse (W/L = 1.20-1.35), convex, just narrower than elytral base, lateral sides crenulated, posterior edge arched and anterior straight, max width in basal third. Elytra, jointly rounded apically, apical angle rather well defined, approximately rectangular.

Median lobe as in Fig. 41. Internal sac: basal part granulose; distal part with 9-10 small, strongly bent conical spines, out of which the apical 3 are slightly smaller than the previous ones. In the “south of Dead Sea” morpha (which is known in 2 ♂♂ specimens only, Fig. 43), the apical half of median lobe is less sinuated and the number of internal sac spines is lower (4 and 6 respectively), all about the same size and in distal position (namely placed at the in-

ternal sac edge). The “north of Dead Sea” morpho has blackish tibiae and tarsi, a nearly straight median lobe apical half, and a rather different internal sac structure (Fig. 42), fitted with many (15-22) small conical spines, from straight to moderately bent; those closer to median lobe base (2-4) evidently larger and longer than all others. Cp just forked basally. Spf of type 1.

♀. As the ♂ but antennae slightly shorter with articles smaller (but a variable character) and elytra clearly widened in apical half with more rounded apices.

Notes

Dasytiscus syriacus, closely related to *D. alfieri*, has been differentiated here by the median lobe profile, which is sinuous in apical half. It shows, however, variability both in median lobe shape (more or less sinuous) and in number and size of internal sac spines. As in the previous species, these variabilities seem to be related to population sets, rather than individual or single populations: because of the rather limited amounts of materials studied, it has not been possible to properly understand their meaning, whether specific, subspecific or else. The whole picture is further complicated by the presence, on the same territory, of *D. alfieri* (n° 9) and *D. subsyriacus* (n° 11). Given the uncertainty of the systematic positions of all these forms, it has been felt wise to keep (at the moment) the current nomenclature and assign to the *D. syriacus* variant populations (as it was done for the previous species) the meaning of morphae.

As a result, in the near east area – from the Sinai Peninsula to Lebanon and Syria – are present *D. alfieri* (with 2 morphae), *D. syriacus* (with 3 morphae) and *D. subsyriacus*, namely a total of 6 similar forms (Fig. 49). The observable differences between them are summarized in Tab. 1.

The typical forms of *D. syriacus* and *D. alfieri* are rather well recognizable and no doubt they can be considered as different species. The distance between the typical localities (Haifa and St. Katherine in the south of the Sinai Peninsula) is about 280 Km.

The problem is to understand the presence of the several variant populations, living close to each other (or even in the same spot) in what we believe to be the overlap area of the two species. As an example, it is interesting to note that, from 1957 to 1963, Sybille and Johann Klapperich collected, at

and around Jerash (including Dehbeen Forest Reserve and “Romana”) in Jordan, a series of *Dasytidius*, as follows:

25.IV.1958: 4♂♂ (3 MWi, 1 CCo), 2 ♀♀ (MWi)

D. subsyriacus (all paratypes)

30.IV.1957: 3♂♂, 5 ♀♀ (MWi)

D. subsyriacus

8.IV.1963: 23 specimens (14 ♂♂ and 9 ♀♀, CCo)

D. subsyriacus

12.IV.1963: 1 ♂ (CCo)

D. subsyriacus

4.V.1963: 1 ♂ (CCo)

D. syriacus “north of Dead Sea” morpho

5.VII.1962: 1 ♂ (CCo)

D. syriacus typical

5-12.VII.1963: 2 ♂♂ and 4 ♀♀ (CCo)

D. infinitus subsp. *infinitus*

The last one (*D. infinitus* subsp. *infinitus*) being out of question (it belongs to a different group), we have 3 similar forms (*subsyriacus*, *syriacus* and *syriacus* morpho “north of Dead Sea”) out of the total of 6, which are present in the rather small Near East region including Lebanon, Israel and Jordan (Jordan river valley only).

Although sympatry might be seen as an indication of specific diversity (but care must be paid to the different collecting dates), the whole scenario suggests a further possibility, namely the presence of hybrids: median lobes and internal sac spines structures, in some instances, actually show intermediate characters between *D. alfieri* and *D. syriacus* (as happens, for example, for *alfieri* “Lebanon” and *syriacus* “north of Dead Sea” morphae).

D. syriacus was wrongly reported of Cyprus by Majer (1991a: 6) due to the similarity with *D. inchoatus*, a species endemic of this Island, as explained in Liberti (2021: 27).

11. *Dasytidius subsyriacus* Majer, 1991 (Figs. 43, 44, 47)

Dasytidius subsyriacus Majer, 1991a: 7, figs. 9, 25, 38, 55, 65, loc. typ. “Zerkatal bei Romana, Jordan” [see comment under “Materials and Methods”]; Majer, 1991b: 19; Majer, 1996a: 157.

This species was identified on several paratype examinations supplemented by the excellent description and drawings of its Author; however, further specimens, belonging to the same population sample of the holotype, have been studied.

Types

6 paratypes (1 ♂ !, CCo; 3 ♂♂, 2 ♀♀, MWi) labeled: “Jerash 700 m / Jordan 25.IV.1958 / S. & J. Klapperich” pr.; “Para / typus” prr.; “*Dasytidius* / subsyriacus sp. n. / K. Majer det. 1987 / Paratypus” pr.

8 specimens [7 ♂♂ (2 !), 1 ♀, MWi] labeled as the holotype and deemed to be part of the same population sample labeled: “E. Jordan / 30.IV.1957 / Zerkatal b. Romana / S. & J. Klapperich” pr.; “*Dasytidius* / syriacus (Reitt.) / det. K. Majer, 1993” pr.

32 specimens considered topotypes (CCo), all labeled: “Debeen [or Dehbeen] b. Jerash / Jordan / S. & J. Klapperich” pr. with several dates: 8.IV.1963 [23 specimens (1 ♂ !)], 12.IV.1963 (1 ♂ !); 4.V.1963 (1 ♂); 5.VII.63 (1 ♂, 3 ♀♀) [labels on the 3 females handwritten by Constantin]; 12.VII.63 (1 ♂, 2 ♀) [one of the females bears a label hw. by Constantin, same as above but “legit W. Wittmer”].

Paratypes localities. Jordan: Jerash, Amman, Deh Been. Syria: Sech Saad.

Distribution: Jordan; Syria.

Description

Dimensions (in mm). ♂♂: length 2.7-3.2, width 1.0-1.1; ♀♀: length 3.0-3.2, width 1.1-1.3.

♂. Body parallel, rather convex. Dorsal integuments dark brown, bright. Femora dark brown, tibiae and tarsi yellowish. Antennae brown with, at least, articles 2-3 yellowish and 4-7 variably darker. Pubescence pale yellowish, long and thin, rather sparse, simple (however, with several raised setae close to borders and elytral apex), lateral fringe visible on pronotum and hardly detectable on elytra.

Antennal article 3 small and elongated; 4 approximately balanced; 5-10 transverse, short. Pronotum transverse ($W/L = 1.15-1.30$), convex, narrower than elytra, lateral sides crenulated. Elytra jointly rounded apically, apical angle rather well defined, rectangular.

Median lobe as in Figs. 44 and 45. Internal sac: basal part with a large granulose cluster; apical part with 4-5 rather small, strongly bent conical teeth (Fig. 45). Cp shortly forked basally. Spf intermediate between type 1 and type 2.

♀. Similar to ♂ but antennae slightly shorter with articles moderately more transverse, elytra

widened in apical half with apices more rounded and apical angle rectangular to acute.

Notes

Very similar to *D. syriacus* from which it differs only for median lobe shape (apically longer than in *syriacus*) and internal sac with about half the number of spines.

It also shows some variability in median lobe shape, as shown in Figs. 43-44, where two specimens from the same locality (collected in different years) are illustrated.

12. *Dasytidius inchoatus* Majer, 1991

Dasytidius inchoatus Majer, 1991a: 5, figs. 10, 36, 53, 87 [♂], loc. typ. Kithrea, Cyprus [see also p. 6 under *D. syriacus*, the specimens from Karavas, Cyprus]; Majer, 1991b: 20; Majer, 1996a: 157, 162, fig. 5 (□) [♀]; Liberti, 2021: 26, 30, 39, 54, figs. 14, 34.

A species thoroughly discussed in Liberti (2021: 39), whose identification has been based on Majer description and excellent drawings. Out of the three *Dasytidius* species present on the island, it is immediately recognizable by the yellow tibiae. Very close to *D. syriacus*, it shows a wide variability in median lobe internal sac spines number. Majer (1991a: 6) determined as *D. syriacus* a large population sample of this species from Karavas, in Cyprus [it has been possible indeed to study one of these (a ♀ specimen, from MWi)].

For description, drawing and discussion of this species, reference is made to Liberti (2021: 39).

Distribution: a species endemic of Cyprus.

13. *Dasytidius kalalovae* Majer, 1991 (Fig. 42, 49)

Dasytidius kalalovae Majer, 1991a: 3-4, figs. 3-5, 24, 33, 34, 49-51, 67, 68, 83, 84, loc. typ. Bagdad (Iraq); Majer, 1991b: 17; Majer, 1996a: 157.

This species has been identified on one type, supplemented by the excellent original description and drawings.

Types studied

1 paratype, ♂, from Bagdad (Kalalová, ?, MMi) [a 1987 gift of Karel Majer to the Museum of Milan].

Other materials studied

TURKEY

Mardin prov.: Haberli (Malinka, 2005, CMk).

LEBANON

Ras el Ain (?, ?, MWi).

Paratypes localities (Majer, 1991a: 4):

Iraq: Mishaw 1750 m (Kurdistan); Abu-Gharib (Bagdad); Latifija (Bagdad).

Iran: Marand 20 Km SW (NW Iran); Mollasani (45 Km NW Ahwaz, SW Iran); Golhak (Elburs Mts); Tscham-Tschak 3000 m (Elburs Mts.); Rood-bar-Ghazvin 1500 m (Bothmer)

Turkey: Bingöl; Gevas.

Distribution: Turkey, Iraq, Iran.

Description

This description is based on one paratype and on a rather large population sample (abt. 20 specimens) from Haberli, in Turkey), collected by Zdenek Malinka in 2005.

Dimensions (in mm). ♂♂: length 2.8-3.2, width 0.9-1.0; ♀♀: length 2.8-3.5, width 0.9-1.0.

♂. Body parallel, size regular. Dorsal integuments black, finely rugulose, bright. Antennae black with at least article 2 reddish (often also articles 3 and, more or less, 4). Legs entirely black. Pubescence pale greenish-gray (whitish in the Ras el-Ain population sample), rather thin and sparse, not well hiding the underneath integument. Lateral fringe nearly absent on both pronotum and elytra.

Antennal articles 5-10 moderately (paratype from Bagdad and Ras el-Ain population sample) or clearly (Haberli population) transverse. Pronotum transverse (W/L = 1.2-1.3), marginally narrower than elytral base, sub-trapezoidal with posterior angles widely rounded, max width in basal third, crenulated on lateral sides. Elytra rather convex, apices jointly rounded, apical angle rectangular.

Median lobe as in Fig. 46. Basal part of internal sac granulose. Distal part with 5-7 rather large, strongly bent spines whose size lessens towards apex. Cp shortly forked. Spf type 1.

♀. Similar to male but slightly larger, elytra moderately widened in apical half with apical angle acute to rectangular.

Notes

This species has a wide distribution range, from river Tigris (Bagdad and Haberli, over 500 Km far from each other) and Lebanon in the west to the Elburs mountain range in the east.

14. *Dasytidius majeri* n. sp. (Fig. 26)

= *Dasytidius holzschuhi* Majer, in litteris.

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Types

Holotype (♂, MMi), allotypus (♀, MMi), 4 paratypes (2♂♂, CLi; 2 ♀♀, CAn) labeled “TR, Mersin prov. / Mut 10-15 Km N / 2.IV.2011 / leg. F. Angelini”.

1 paratype (♂ !, CCo) labeled: “Turquie (Silifke) / Mut 8.VI.1954 / H. Coiffait” hw. (by Coiffait ?); “Para / typus” prr.; “Dasytidius / holzschuhi sp. n. / K. Majer det., 1988 / Paratypus” hw. Majer.

2 Paratypes (♂ and ♀, CCo): “TR, Mersin / Silifke 2.V.1990 / leg. H. Hebauer” pr.

All types bear a further label “Holotypus [or Allotypus, or Paratypus where applicable] / *Dasytidius majeri* / (*holzschuhi* Majer in litt.) / Lib. 2019 [hw.]” prr.

The Majer ♂ specimen (*holzschuhi* paratype) from Silifke, leg. Coiffait above reported has been included in the typical series. A second *holzschuhi* paratype, a ♀, (CCo), labeled: “Taurus Geb. / S. Türkei / 22.V.1946 / J. & S. Klapperich” hw.; “Para / typus” prr.; “Dasytidius / holzschuhi sp. n. / K. Majer det., 1988 / Paratypus” hw. Majer, has been set off the typical series of *D. majeri* because, being a ♀, there is no certainty that it would actually belong to this same species.

A rather large species, immediately recognizable by median lobe profile and internal sac structure. Typical locality is Mut, Mersin province (Turkey). The name commemorates Karel Majer, colleague and friend of the writer and outstanding specialist of family Melyridae.

Description

Dimensions (in mm). ♂♂: length 3.1-3.7, width 1.1-1.2; ♀♀: length 3.2-3.3, width 1.1-1.2.

♂. Body parallel, rather convex. Dorsal integuments dark brown to black with greenish reflections, rather bright although rough. Legs dark brown; tibiae at times paler than femora; tarsi usually somewhat paler

than tibiae, variably brown. Antennae brown with articles 2-3 reddish and 4-6 darkened at least in part. Pubescence long and rather dense, pale grey-yellowish, simple but with many raised setae close to lateral borders (both pronotum and elytra) and elytral apex; elytral lateral fringe visible.

Antennal articles 2-3 elongate; 4-10 balanced or transverse; 4-6 sub-triangular; 5 slightly larger than 4 and 6; 7-10 globular. Pronotum transverse ($W/L = 1.25-1.35$), convex, moderately crenulated on lateral borders, just narrower than elytra, curved laterally, max width in basal third. Elytra rather convex; apices jointly truncated, wide; apical angle evident, rectangular.

Median lobe as in Fig. 26. Internal sac basal part entirely granulate, distal part fitted with a long, ribbon-like aggregate of short, transversally placed needles. Cp basally forked. Spf of type 1.

♀. As the male but antennae shorter with articles more transverse, eyes smaller, flattened; elytra slightly widened in apical half.

Notes

A species recognized by Majer as new – that remained unpublished – as witnessed by two specimens (♂, ♀) in CCo, which have been indeed labeled by him as paratypes of *Dasytidius holzschuhi* n. sp. Whether other labeled Majer types would exist, and where they would be kept is unknown – not in Carolus Holzschuh collection nor in the Wien Museum, as reported by Isidor Plonski (private communication).

D. majeri is known only from the Mersin province in Turkey and it is easily recognizable by the median lobe shape and the peculiar internal sac structure.

15. *Dasytidius ethologus* Majer, 1989 (Fig. 30)

Dasytidius ethologus Majer, 1989b: 145, 154, figs. 17, 18, 35, 42, 49, 64, 80, loc. typ. Samarias Gorges (Hanià prov., Crete); Majer, 1991b: 20; Majer, 1996a: 157.

The interpretation of this taxon is based on the Majer description and drawings. This species, anyway, is well recognizable from the other *Dasytidius* species (*D. indutus aegaeicus*) known to live on Crete.

Materials studied

CRETE

Hanià prov.: Elos (Sama, 1993, CLi); Kolimvari (Gillerfors, 1993, CLi); Lakki (!, 2006, CLi).

Rethimno prov.: Aghia Galini (!, 2006, CLi); Anoghia 700 m (!, 2006, CLi); Saktouria 450 m (!, 2006, CLi); Spili (Berra, 1984, CLi).

Iraklio prov.: Gonies 600 m (!, 2006, CLi).

Distribution: Crete.

Description

Dimensions (in mm). ♂♂: length 2.8-3.4, width 0.85-1.05; ♀♀: length 3.1-3.4, width 1.2-1.3.

♂. Body slightly widened posteriorly, convex. Dorsal integuments black with greenish reflections; pronotum rather rough, elytra smoother. Femora dark brown to black; tibiae and tarsi yellow to brown depending on individuals. Antennae blackish with articles 2-6 increasingly darkened. Pubescence long and thin, rather dense, silver-yellowish; nearly double: recumbent and raised setae intermingled; lateral fringe mainly visible on pronotum and elytral base.

Antennal article 3 thin, 4 smaller than 5, 5-10 transverse. Pronotum convex, moderately transverse ($W/L = 1.15-1.25$), crenulated on lateral sides (but a variable character), lateral sides bowed; anterior edge longer than posterior; max-width in the middle or just behind. Elytral apices individually rounded; apical angle obtuse.

Median lobe as in Fig. 30. Internal sac: basal part with a finely granulated zone of variable extension; distal part with 3-4 small conical, strongly bent teeth. Cp thin and simple at base. Spf type 1 with branches well expanded basally.

♀. As the male but eyes just smaller, antennae shorter, with articles more transverse, elytral shape different: more convex and widened in apical half, with apices less truncated and more flattened.

Notes

This species, a Crete endemic, is well characterized by the median lobe shape.

16. *Dasytidius indutus* (Kiesenwetter, 1859)

D. indutus is considered, here, as a polytypical species composed by 4 subspecies: *indutus* Kiesenwetter, *aegaeicus* Liberti, *funebri* Majer and *virescens* Baudi. *Dasytidius funebri* and *D. virescens* (previously good species) are lowered to subspecies of *D. indutus* (Liberti, 2021: 38) because of their similarity (both for external and aedeagical characters) with the other forms of *D. indutus*.

D. indutus subsp. *dalmatinus* Majer is synonymized with *D. indutus indutus*, based on a paratype (same population sample of the holotype) examination.

Dasytidius indutus subsp. *similis* Majer (1986b: 77) is raised to good species (Liberti, 2021: 38), as detailed below.

Their distribution ranges can be summarized as follows:

subsp. <i>indutus</i>	Continental Greece, Croatia (Dalmatia)
subsp. <i>aegaicus</i>	Crete, Aegean Islands, Rhodes, Turkey (Antalya region only)
subsp. <i>funebri</i>	Turkey (Fig. 47)
subsp. <i>virescens</i>	Cyprus

subsp. *indutus* Kiesenwetter, 1859 (Fig. 8)

Dasytiscus indutus Kiesenwetter 1859: 179-180, plate 2, fig. 15, loc. typ. Greece; Kiesenwetter 1857-1863: 625 (Note 2). – Jacquelin du Val, 1860: 162, pl. 46 fig. 230; Reitter, 1885: 243; Bourgeois, 1885: 256, 259, 262-263, plate 5, fig. 3; Reitter, 1889: 25; Pic 1895: 251; Schilsky, 1896: Nrs. 66 and 32 K.; Jakobson, 1912: 708; Sahlberg, 1913: 151; Wittmer, 1935a: 255; Liberti, 1986: 185, 186, 187-188, figs. 1-5; Majer, 1987: 744, 856, fig. 404 [*Dasytiscus* (*Dasytidius*)]; Majer, 1989a: 764, figs. 1-6, 8-15 [*Dasytidius*]; Majer, 1989b: 151-152, 154, figs. 3, 27, 28, 31, 32, 36, 39, 40, 41, 55-57, 70, 84, 86; Majer, 1991b: 19; Majer, 1996a: 161; Liberti, 2021:38.

= *Dasytiscus indutus* var. *nigricornis* Schilsky, 1896: Nr. 66, loc. typ. not disclosed. [Synonymized by Liberti, 1986: 187].

= *Dasytidius indutus dalmatinus* Majer, 1989b: 152, fig. 71, loc. typ. Brač Island, Dalmatia; Majer, 1996a: 161 (syn. n.).

A species, whose types are probably lost, identified (with general agreement) on original description and on the fact that, in continental Greece, just two species are present (*D. indutus* and *D. emgei*), well different from each other and easily recognizable.

D. indutus dalmatinus Majer is here synonymized with *D. indutus indutus* based on the study of 2 paratypes (1 ♂ and 1 ♀) from the same population sample of the holotype. The main difference (correctly) reported by Majer, namely the median lobe apical shape, turned out indeed to be a rather variable character in this species and, in the writer opinion, the differences actually existing between the ♂ paratype from Dalmatia and the population samples studied from mainland Greece may not be meaningful.

Types studied

of *Dasytidius indutus dalmatinus*:

2 paratypes (1 ♂, 1 ♀, MWi) labeled “Iugoslavia / Brac, Bol / 3-4.VI.1987 / F. Tomašek lg.” pr.; “*Dasytidius* / *indutus* / *dalmatinus* subsp. n. / K. Majer det. 1988 / Paratypus” partly hw. (last line pr.); “Para / typus” prr.

Materials studied

GREECE

Thesprotia prov.: Igoumenitsa (!, 2005, CLi); Karteri (!, 2005, CLi); Nea Selevkia (!, 2005, CLi); Parga (!, 1981, CLi); Sagiada (!, 2005, CLi).

Préveza prov.: Agii Apostoli (Malinka, 2000, CMk).

Larissa prov.: Kokkino Nero (!, 2001, CLi).

Etolia Akarnania prov.: Etolikò (!, 1998, CLi).

Fthiotida prov.: Amfikalia (!, 2001, CLi); Kallidromo (!, 2001, CLi).

Fokida prov.: Glifada (!, 1998, CLi); Itea (!, 1998, CLi).

Viotia prov.: Antikira (!, 1997, CLi).

Ahaia prov.: Diakoftò (!, 1998, CLi); Hiona (!, 1998, CLi); Pagianeika (!, 1981, CLi); Patra (Schatzmayer, 1935, MMi).

Ilia prov.: Andritsena (!, 1980, CLi).

Distribution: Croatia (probably Albania), continental Greece.

Description

Dimensions (in mm). ♂♂: length 3.0-3.6, width 1.0-1.3; ♀♀: length 3.5-3.8, width 1.3-1.5.

♂. Body moderately widened in elytral apical half, convex. Dorsal integuments olive green very dark, rather bright. Femora brown; tibiae yellowish often darkened apically; tarsi brown with articles variably darkened at their base. Antennae dark brown with articles 2-4 variably spotted yellowish or pale brown. Pubescence long and thin, rather sparse, pale yellowish; simple but with mixed adpressed and raised setae, the latter being more abundant close to elytral apex; lateral fringe underdeveloped, not much evident.

Antennal articles 2-3 elongate; 4-10 transverse; 4-6 subtriangular. Pronotum convex, transverse (W/L = 1.25-1.35), crenulated on lateral sides, clearly narrowed anteriorly, posterior edge widely bowed, max width in basal third. Elytral apices jointly rounded, although slightly divergent, apical angle obtuse.

Median lobe as in Fig. 8. Internal sac: basal

part fitted with two agglomerates of thin needles, placed close to the median lobe apex; distal part with a roundish ring of loose short needles connected with a double mass of disordered needles, all inside a granulose zone, followed by 13-15 dark brown, large, bent conical spines and, apically 2-3 straight, flat teeth surrounded by a granulose membrane. Cp simple at base (Fig. 10). Spf type 3 (Fig. 9).

♀. Very similar to ♂ (although slightly larger), from which it can be recognized only by the elytra moderately more widened in apical half.

Notes

Very common all-over continental Greece.

subsp. *aegaeicus* Liberti, 1986 (Figs. 1, 9-12, 47)
Dasytidius (*Dasytidius*) *indutus* subsp. *aegaeicus* Liberti, 1986: 186, 188, figs. 6-8, loc. typ. Crete; Liberti, 1988: 14; Majer, 1989b: 152, fig. 72 [*Dasytidius*]; Majer, 1996a: 161.

The subspecies status of this taxon is justified by anatomical similarity with *D. indutus indutus* and proximity without (any known) overlap of their distributions, both forms being very common within their ranges. On the other hand, even though the high variability, the two forms show constant differences deemed to be rather meaningful.

Types studied

Holotype (♂, MMi), Allotypus (♀), 7 Paratypes (1 ♂, 1 ♀: MMi; 2 ♂♂, 3 ♀♀: CLi): “Lassithi m. 1000 / Kerà (Kardiotissa) / 20.VII.1979 Liberti” hw. and pr. (in part).

10 Paratypes (3 ♂♂, 7 ♀♀: CLi): “Messaras / Aghia Galini / 2.VIII.1979 Liberti” pr.

Other materials studied

GREECE

Kyklades prov.: Andros: Kato Fellós (!, 2007, CLi)^F; Andros: Kato Katakilos (!, 2007, CLi); Naxos: Matsouna (!, 2006, CLi); Syros: Galissas (!, 2007, CLi); Syros: Kini (!, 2007, CLi); Tinos: Ormos Kardiani (!, 2007, CLi)^F.

Hanià prov. (Crete): Aghia Pandés nr. Vryses (!, 2006, CLi); Chora Sfakia (!, 2006, CLi); Imbros m. 800 (!, 2006, CLi).

Rethimno prov. (Crete): Aghia Galini (Berra, 1984, CLi); Aghia Paulos nr. Aghia Galini (!, 2006, CLi).

Iraklio prov. (Crete): Aghia Pelagia nr. Gazi (!, 2006, CLi).

Dodecanese prov.: Karpathos: Ammopi (Cornacchia, 2014, CLi); Rhodes (Schatzmayr, 1932, MMi; Machi, 1933, MMi)*; Meyisti (Schatzmayr, 1932, MMi).

TURKEY

Mugla prov.: Eser [30 Km S of Kemer] (Malkin, 1981, CCo).

Antalya prov.: Avlanbeli Gecidi (Malinka, 1996, CMk); Ciralı, Olympos (Růžicka, 2022, CRu); Kalkan [4 Km N of] (Angelini, 2011, CLi); Kumluca [N of] (Gillerfors, 1991, CLi), Phaselis Archeological Site (Růžicka, 2022, CRu).

* = populations from Rhodes have a median lobe rather similar to subsp. *indutus*

Distribution: Aegean Greek Islands: Crete, Cyclades, Dodecanese. Turkey: Mugla and Antalya provinces (the region between Fethiye and Antalya).

Description

Dimensions (in mm). ♂♂: length 2.5-3.3, width 0.95-1.35; ♀♀: length 2.95-3.7, width 1.05-1.5.

♂. The same external characters of *D. indutus indutus* can be found here although, on average, lateral fringe (of pubescence) is better visible and antennal articles 2-4 longer. The main differences are in the median lobe apex, which is thicker (compare Figs. 11-12 with Fig. 8), and in the elements of the internal sac (compare the same figures), which can be described as follows:

basal part: absence of any dense agglomerate of needles (as found in subsp. *indutus*: Fig. 8) replaced here by an inconspicuous granulose zone near the median lobe apex,

distal part: a roundish ring of loose short needles connected with a double or triple aggregate of loose needles, all inside a granulose zone (but the ring apparently may be lacking in some Kyklades populations), followed by 7-12 pale brown, rather large, bent conical spinules (slightly smaller and thinner than in subsp. *indutus*) and, apically 2-3 straight, flat teeth (here again smaller than in subsp. *indutus*) surrounded by a granulose membrane.

♀. Very similar to ♂ (although on average slightly bigger), can be (hardly) recognized only by the elytra moderately more widened in apical half. Populations have been found where specimens with com-

pletely dark-brown tibiae can be observed (see below under “Notes”).

Notes

A form showing variability (in external as well as in aedeagical characters) both between different populations and within the same one. As an example of the individual variability, the writer observed, on Syros Island (Kini), a population where females had either dark or yellow tibiae and rather different individual sizes (TL spanning from 3.0 to 3.7 mm). However, understanding which anatomical differences (between different islands populations) are due to individual variability and which ones come from geographical variation is a difficult task. Differences between different island populations are often limited to the internal sac structure, may be rather tiny and, at times, may be difficult to appreciate because subject to dissecting and/or mounting imperfections such as breaks, rotations and dislocations, when the medium is still soft, and deformations on drying. Even on Crete, differences between populations living in different parts of the island have been found [as happens for other species as well: see, for example, *Danacea latipennis* Pic, 1903 (Liberti- 2009: 62)].

It is convenient to see *D. indutus* subsp. *aegaeicus* as an aggregate of slightly different forms: taking into account the high number of islands included in its range, such variability is probably linked to insularity.

That is why the name *aegaeicus* has been used, here, as a box where to put all *Dasytidius* populations of group *indutus*, more or less corresponding to description and drawings – so bearing “similar aedeagical characters” – which can be found in the above-reported range. A rather obvious statement is this one – applicable to all species defined on morphology only – which may take here an unusually far-reaching meaning.

Tab. 2 (see below) reports the main differences between five similar forms: *D. indutus* subsp. *indutus*, subsp. *aegaeicus*, subsp. *funnebris*, *D. similis* and *D. daucifloris*.

subsp. *funnebris* Majer, 1989 (Figs. 13-15, 47)

Dasytidius funnebris Majer, 1989b: 153, 154, figs. 29, 30, 73, 86, 87, loc. typ. Ankara (Baraj); Majer, 1996a: 160; Liberti, 2021: 38 [subsp. of *D. indutus*].

= *Dasytidius impar* Majer, 1996a: 161, 171-172, figs. 55-59, loc. typ. Alanya [syn. n.]

The identification of *D. indutus funnebris* has been based on the study of a few paratypes, however, belonging to the same population sample of the holotype.

Several typical specimens of *D. impar*, including the holotype, have been studied as well and no meaningful morphological differences have been observed between the two.

Types studied

Of *D. funnebris*:

5 Paratypes (1 ♂ !, 4 ♀♀, CCo) labeled: “Ankara, Baraj / Anat., 3-4.VII.47 / Exp. N. Mus. CSR” pr., “*Dasytidius / funnebris* sp. n. / K, Majer det., 1989 / Paratypus” prr.; “Paratype / *Dasytidius / funnebris* / Majer, 1989” prr., placed by Constantin.

1 Paratype (1 ♀, MMi) labeled as the previous ones: “Ankara, Baraj / Anat., 3-4.VII.47 / Exp. N. Mus. CSR” pr., “*Dasytidius / funnebris* sp. n. / K, Majer det., 1986 / Paratypus” prr (gift of Karel Majer to the MMi).

1 “Homotype” (♂ !, CCo): “Turkey, Troy / (Truva)” pr.; “19.VI.1979 / B. & H. Malkin” pr.; “*Dasytidius / funnebris* Majer / K. Majer det. 1988 / Homotypus” hw by Majer.

1 “Homotype” (♀, CCo): “Turquie, Silifke / Mut / H. Coiffait 8.VI.54” hw. by Coiffait; “*Dasytidius / funnebris* Majer / K. Majer det. 1988 / Homotypus” hw. by Majer.

Of *D. impar*:

Holotype (♂, CCo), 12 Paratypes [both ♂♂ and ♀♀, CCo) labeled:

“Turkei, Alanya / 24.V.1979 / B. Malkin” pr.; “Holo / typus [or Para / typus]” prr.; *Dasytidius / impar* sp. n. / Majer det. 1988 / Holotypus [or Paratypus]” hw. by Majer; “Holotype [or Paratype] / *Dasytidius / impar* / Majer 1996 / K. Majer des. 1996” prr. added by Constantin.

1 Paratype (♂, CCo) “Turkei, ancient / Asplendos” pr.; “25.V.1979 / B. Malkin” pr.; “Para / typus” prr.; *Dasytidius / impar* sp. n. / Majer det. 1988 / Paratypus” hw. by Majer; “Paratype / *Dasytidius / impar* / Majer 1996 / K. Majer des. 1996” prr. added by Constantin.

Other materials studied

TURKEY

Balikesir prov.: Düvertepe (Angelini, 2010, CLi).

Aydin prov.: Karacasu (!, 2010, CLi).

Denizli prov.: Hadim [28 Km SW Civril] (Angelini, 2010, CLi).

Isparta prov.: Sarki Karagaaç (Angelini, 2010, CLi).
Antalya prov.: Alanya (Malinka, 1996, CMk)^T; Kumluca (Malinka, 1996, CMk); Seleukia, north of Manavgat [determined as *D. impar* by Majer] (Mühle, 1997, CCo); Side (Gillerfors, 1989, CLi; Udovichenko, 2007, CLi).
Icel prov.: Kurtulus (Malinka, 2005, CMk).

Paratypes localities: Bozüyük, Silifke, Avanos, Pozanti, Adana, Scutari, Mersin, Kandilli.
Distribution: western Turkey.

Description

Dimensions (in mm). ♂♂: length 3.1-3.6, width 1.1-1.2; ♀♀: length 3.6-3.8, width 1.4-1.5.

♂. Body widened posteriorly, convex. Dorsal integuments blackish with greenish reflexes. Legs entirely blackish to dark brown or, at times, with tibiae slightly paler than femora and tarsi. Antennae blackish with, at times, articles 2-3 slightly paler. Pubescence yellowish, long, rather sparse, simple but with many raised setae close to elytral borders; lateral fringe visible but rather underdeveloped.

Antennae with articles 2-3 elongate, 4 balanced, 5-10 transverse. Pronotum convex, transverse (W/L = 1.25-1.35), lateral sides crenulated and bowed, posterior side rounded and anterior straight, max width just behind the middle. Elytra convex, elytral apices slightly divergent, more or less jointly rounded (but a variable character), apical angle rounded to obtuse.

Median lobe as in Figs. 13, 15. Internal sac (Figs. 13-15): basal part with a finely granulate small zone close to the median lobe apex and a second one in the middle. Distal part with a small, roundish ring of loose needles (more or less visible) linked with two small needles aggregates; followed by 4-6 brown conical spines, bent and rather large plus 2-3 apical conical spines, straight, flat and connected to a granulate membrane. Cp basally simple (as in Fig. 10). Spf type 3 (as in Fig. 9).

♀. Very similar to ♂, can be (hardly) recognized only by the elytra moderately more widened in apical half.

Notes

A form of the *indutus* group, common all-over western Turkey, similar to the other *D. indutus* subspecies and, also, to *D. similis* below discussed.

Dasytidius indutus subsp. *funbris* lives all over west Turkey (west of Adana: Fig. 47) except for the area between Fethiye and Antalya, where it is apparently replaced by two similar forms: *D. indutus* subsp. *aegaeicus* and *D. similis* living here together.

Tab. 2 summarizes the main anatomical differences between the 5 “forms” very close to *Dasytidius indutus* (3 *D. indutus* subspecies, *D. similis* and *D. daucifloris*) that can be found in Greece and Turkey (*D. indutus virescens*, endemic of Cyprus, has been excluded).

subsp. *virescens* Baudi, 1874

Dasytidius virescens Baudi, 1874: 319, locality reported: Cyprus; Bourgeois, 1885: 271; Pic, 1937: 55 (catalog) [*Dasytidius* (*Dasytidius*)]; Majer, 1991a: 10-11, 16, figs. 14, 15, 43, 76-78 [*Dasytidius*, lectotypus], loc. typ. Cyprus; Majer, 1996a: 160; Liberti, 2021: 38, figs. 11, 12, 29-30 [subsp. of *D. indutus*].

A form of the *indutus* group, very close to *D. aegaeicus* and *D. funbris* and, as far as we know, endemic of Cyprus Island.

This subspecies, already discussed in Liberti (2021: 38), can be easily differentiated from all other *D. indutus* subspecies for the conspicuous difference in pronotum shape: visibly narrowed on posterior third, with anterior border rather straight and wide and clearly less transverse (PW/PL = 1.1-1.2).

Only modest aedeagical differences can be observed between *D. indutus* subsp. *virescens* and *D. indutus* subsp. *aegaeicus* – in apical part of internal sac the small needles agglomerates placed between spines and median lobe are smaller, less evident and different – however, taking into account the variability of the latter form, they look similar up to the point that, on this base only, the two might have been synonymized.

Although immediately recognizable from all others for pronotum structure, *D. virescens* has been considered subspecies of *D. indutus*, rather than good species, both because of the aedeagical similarity and because its insular range falls (necessarily without overlaps) within the overall distribution range of the species.

17. *Dasytidius daucifloris* sp. n. (Figs. 7, 47)

lsid:zoobank.org:act:

8101EA3C-41DE-404E-B68E-7E6518DAC557

An abundant population sample, collected on wild carrot large inflorescences (as the species name

reminds) by the writer at Özdere (about 50 Km south of Izmir), compared with *D. indutus* subsp. *funnebris* and *D. similis*, looks like a different, good species (although similar) because of the differences in median lobe apex and internal sac (Fig. 7). That adds complexity to the *indutus* group in Turkey, whose systematics might turn out, in the future, to be even more entangled than we presume now.

Types

Holotype (♂, MMi), allotypus (♀, MMi), 94 paratypes (3♂♂, 3♀♀ MMi; 3♂♂, 3♀♀ MGe; 33♂♂, 49♀♀ CLi), all labeled: “TR (Izmir prov.) / Özdere / 38°02.4’N, 27°03.8’E / 30 m, 21.V.2010, Liberti” pr.; “Holotypus (or Allotypus, or Paratypus, where applicable) / *Dasytidius* / *daucifloris* / Liberti, IX.2022” prr.

Description

This description has been made on one population sample only, although abundant.

Size regular, dimensions (in mm). ♂♂: length 2.7-3.1, width 1.1-1.3; ♀♀: length 3.0-3.5, width 1.1-1.4.

Dorsal integuments punctuate, bright, finely alutaceous between points, dark olive-green; pubescence pale: whitish to grey-yellowish; all setae variably half-raised; lateral fringe present, but not conspicuous, on both pronotum and elytra. Antennae entirely dark brown with articles 2-4 at times basally paler; femora brown, tibiae variable from brown to yellowish-brown with darker extremities; tarsi brown with articles base paler.

♂. Antennae with articles 4-10 visibly transverse. Body convex, parallel. Pronotum finely denticulated on lateral sides, moderately transverse, subtrapezoidal, max width in basal half. Elytra moderately flattened in apical fourth, truncated and slightly raised apically; apical angle rectangular to obtuse.

Median lobe-shaped as in group *indutus* with a slender apex (Fig. 7). Internal sac basal part with a granulose zone near median lobe apex; distal part with a large, disordered needles (or similar shape) aggregate followed by 1-2 rather small, conical bent spines and further 2 rather small, conical, flat and straight spines. Spf type 3; Cp simple basally.

♀. Compared to ♂, body slightly more convex and antenna somewhat shorter, with articles more trans-

verse. Elytra moderately widened in apical half, nearly regularly convex (less flattened) apically with apical angle acute.

Notes

A species close to *D. indutus funnebris* but on average just smaller; dorsal integuments more greenish; tibiae (more or less) paler: yellow with brownish extremities to entirely brownish; tarsi with articles basal part brown-yellowish. The median lobe is rather different, with slender apex (compare Figs. 7 with 13, 15), internal sac distal part clearly different: the needles aggregate close to median lobe base is large and disordered, the conical bent spines are only a few (1-2) and the apical flat spines smaller although similar. The differences between the *indutus* group similar forms are reported in the table above (under *D. indutus funnebris*).

This species is probably endemic of the Izmir area, in Turkey. It is known only through the typical series (although a further specimen is known, without locality label: see here above under *D. fulvipes*).

18. *Dasytidius similis* Schilsky, 1896 (n. stat.) (Fig. 6, 47)

Dasytiscus (Dasytidius) similis Schilsky, 1896b: Nrs. 77-77a and 32 M, localities reported: Izmir, Gjölbanihi (see note above); Jakobson, 1912: 708; Wittmer, 1935a: 255; Majer, 1989b: 153, figs. 2, 74, 85 [Lectotype, *Dasytidius indutus similis*], loc. typ. Gölbası-Trysa [Antalya prov.]; Majer, 1996a: 161.

= *Dasytidius malkini* Majer, 1996a: 161, 171, figs. 48-54, loc. typ. ancient Myra (Antalya prov.) (syn. n.)

As already put forwards by Majer (1989b: 153), this taxon is deemed to be a good species, not a subspecies of *D. indutus*.

The lectotype of *D. similis* was not studied. However, from the excellent figure available (Majer, 1989b: fig. 74) and the closeness of the typical localities it is, no doubts, a senior synonym of *D. malkini* Majer.

It is easy to believe that Schilsky described this taxon on more than one species (possibly a mixture of *D. indutus funnebris* – or maybe *D. daucifloris* – and *D. similis*), because, in the original description, the locality Izmir is mentioned: a place where *D. similis* [as designated by Majer (1989b: 153)] should not be present (Fig. 47).

Types studied

Of *D. malkini*:

Holotype ♂ (dissected by Majer, CCo) "Turkey, ancient / Myra (Antalya prov.) / 8.V.1961 / B. Malkin" pr.; "Holo / typus" prr.; "Dasytidius / malkini sp. n. / Majer det. 1988 / Holotypus" hw. by Majer; "Holotypus / Dasytidius / malkini / Majer 1996 / K. Majer des. 1996" prr. added by Constantin.

1 paratype (♀, dissected by Majer, CCo): labeled as the holotype.

1 paratype (♀, CCo), "Turkey, ancient / Limyra (Antalya prov.) [25 km NE of Myra] / 9.V.1961 / B. Malkin" pr.; plus other 3 labels identical to the holotype. This specimen should be set off the typical series because there is no certainty it would belong to this species (it might be *D. indutus aegaeicus*, also present in this same area).

Other materials studied

GREECE, DODECANESE

Meyisti (Schatzmayr, 1932, MMi) [geographically Turkey: Meyisti Island is very close to Kas (Antalya prov.)]*.

TURKEY

Antalya prov.: Kalkan 4 Km N (Angelini, 27.V.2011, CLi)**.

* = on this island Schatzmayr collected both *D. similis* and *D. indutus aegaeicus*.

** = 1 ♂ only: compared with the holotype of *D. malkini*, it looks absolutely identical, including the internal sac spinules. In this same locality and date, Angelini also collected 1 specimen of *D. indutus aegaeicus*.

Distribution: Turkey, Antalya prov.

Description

Based on 2 ♂ specimens only, including the holotype of *D. malkini*.

Dimensions (in mm). ♂♂: length 3.3-3.8, width 1.1-1.3.

♂. Body posteriorly widened, convex. Dorsal integuments blackish with a greenish tone, bright. Legs entirely yellowish to pale brown, tarsal articles with extremities often darkened. Antennae blackish with articles 2-5 variably yellowish to pale brown. Pubescence

yellowish, long and rather sparse, nearly double (with many setae raised, mainly close to elytral lateral border), lateral fringe visible.

Antennal articles 2-3 elongate, 4-10 transverse, 4-6 triangular (namely with an appreciable internal angle). Pronotum convex, very transverse (W/L = 1.4-1.5), finely crenulated and bowed on lateral sides, as wide as elytral base, narrowed anteriorly with fore edge straight and hind edge arched, max width in posterior third. Elytra basally convex and apically depressed, more or less jointly rounded, apices moderately divergent with apical angle obtuse.

Median lobe as in Fig. 6. Internal sac: basal part with a tiny granulated zone close to median lobe apex and an aggregate of needles in the middle; distal part with two needles aggregates and a well visible, slightly bowed rod (apparently) connected at one extremity with a third, small needle aggregate; to follow a set of 12-13 rather small, elongate spines (apex slightly bent) and 2 small, straight spines inserted in a granulate zone. Cp basally simple. Spf type 3.

Notes

To our current knowledge, *D. similis* should be an endemic species living in the area south-west of Antalya (Fig. 47). Its presence in Cyprus (Majer, 1989b: 153) is unlikely: easy to believe indeed in a confusion with the similar *D. virescens*, as discussed in Liberti (2021: 27).

19. *Dasytidius infinitus* Majer, 1991 (Figs. 23-25)

This species is here considered as made up by two forms: *D. infinitus* subsp. *subnudus* Majer, 1991 and *D. infinitus* subsp. *infinitus* Majer, 1991. *D. infinitus subnudus* is known only through the population sample which includes the holotype, from the Iranian Kurdistan. *D. infinitus infinitus* apparently is spread over a rather wide area: Jordan, Israel, Lebanon, Syria and south-east Turkey.

The Majer descriptions of *D. subnudus* and *D. infinitus* – both in the same paper (Majer, 1991a) – largely overlap and their median lobes drawings look very alike to each other. Although the typical localities are far away (Iranian Kurdistan and Israel, respectively), several paratypes of *D. subnudus* were chosen from Israel and Jordan, namely very close to the typical locality of *D. infinitus*. Furthermore, some of the paratypes of both species (designated by Majer) come

from the very same population sample [as appears from the identical labeling (all collected by J. Klapperich at Kubebe near Jerusalem)].

Taking into account that the studied *D. subnudus* paratype (from the typical locality) shows internal sac differences from *D. infinitus* – that are deemed to be meaningful – and the typical localities are far away, it seems wise to keep the two names (at least provisionally) with subspecific value.

Both names have been published in the same 1991 paper: the writer think that the name *infinitus* would be preferable to the name beginning with *sub*, a prefix often used, in the past, for “varieties” (ICZN art. 24.2.2; see also Nemesio, 2007: 57).

subsp. *infinitus* Majer, 1991 (Fig. 23, 25)

Dasytidius infinitus Majer, 1991a: 11-12, figs. 16, 28, 44, 61, 81, 95, typ. loc. Haifa; Majer, 1991b: 18; Majer, 1996a: 160.

No types have been studied of this taxon, however, identified on the excellent description and drawings supplied by Majer.

Paratypes localities: Israel: Jerusalem, Nablus, Kubebe (near Jerusalem). Syria: Aleppo. Turkey: Izmir (this locality to be confirmed because well outside the known range of this species).

Further materials studied

TURKEY

Van prov.: Timer (Sama, 25.VII.2002, CLi)*.

ISRAEL

see below the 5 paratypes (from Kubebe) of *D. subnudus*.

JORDAN

see below the 4 paratypes (from Homar) of *D. subnudus*.

Jerash (Klapperich, 5.VII.1963, CCo).

* = 1 ♂ and 1 ♀ only. Internal sac spinules of the ♂ specimen are 4 or 5 only (Fig. 22), and their assignment to subsp. *infinitus* is doubtful.

Description

Dimensions (in mm). ♂: length: 3.10-3.20, width: 1.05-1.15; ♀: length: 3.0-3.1, width: 1.15-1.30.

♂. Color and appearance as subsp. *subnudus* but antennae slightly darker: articles 2-3 yellowish, 4-

5 often spotted yellowish, 6 dark-brown. Antennal moderately stronger than in subsp. *subnudus* with article 2 globose, 3 small, 4-9 transverse. Pronotum convex, transverse (W/L = 1.25-1.30). Median lobe, as in Fig. 23, paler in the middle and darker basally and apically. Internal sac with basal part simple and distal part showing an aggregate of needles of variable size followed by $\approx$ 9-11 small, bent teeth [a specimen from Turkey, Van province, has only 4-5 spines in the internal sac, and the needles aggregate is very small (Fig. 25)]. Cp simple at base. Spf type 2.

♀. Very similar to ♂, can be recognized only by elytral shape more widened in apical half with apices more flattened.

Notes

This species, on both external and internal characteristics, is close to *D. indutus*.

Main differences between the two subspecies are in internal sac and spf structures: subsp. *infinitus* clearly shows a (variable) aggregate of needles followed by rather small conical spines in internal sac and the basal branch of spf is short (spf type 3), subsp. *subnudus* has no needle aggregate and a higher number of larger conical spines in internal sac and the basal branch of spf is longer (spf type 2). A few external characteristics might be relevant too: the ♂ specimen studied of subsp. *subnudus* has slightly smaller size, antennal article 4 is smaller and antenna are paler (differences to be taken with care because only 1 ♂ and 1 ♀ have been available for study).

As the labeling suggests, adults of this species appear in June and July, apparently later than the other *Dasytidius* species living in the same area (*D. syriacus*, *D. subsyriacus*, *D. alfieri*) whose adults have been usually collected from April to the beginning of June.

subsp. *subnudus* Majer, 1991 (Fig. 24)

Dasytidius subnudus Majer, 1991a: 9-10, figs. 14, 42, 58, 72, loc. typ. “Shakhlawa / Kurdistan pers.” [identified as Shaqlawa, Kurdistan of Iraq, about 50 Km NE of Erbil]; Majer, 1991b: 19; Majer, 1996a: 160.

Types studied

2 Paratypes (thought to belong to the same population sample of the holotype, MBa), labeled:

1 ♂ (!) and 1 ♀: “Shakhlawa / Kurdistan pers. / Dr.

Kalalova - Di Lotti" pr.; "*Dasytidius* / *subnudus* sp. n. / K. Majer det. 1987 / Paratypus" pr.; "Paratypus" prr. 9 more specimens have been studied: all designated (Majer, 1991a: 10) as *Dasytidius subnudus* paratypes but actually belonging to subspecies *infinitus*:

5 specimens (same population sample, MBa) labeled: 1 ♂ (!): "Kubebe 600 m / Jordan, 13.VI.1958 / S. & J. Klapperich" hw.; "b[ei] Jerusalem" hw.; "*Dasytidius* / *subnudus* sp. n. / K. Majer det. 1987 / Paratypus" hw.; "Paratypus" prr.

2 ♂♂ (1 !), 2 ♀: "Transcription: / Kubebe 600 m / Jordan, 13.VI.1958 / S. & J. Klapperich" pr.; "Transcription: / b. Jerusalem" pr.; "Transcription: / *Dasytidius* / *subnudus* sp. n. / K. Majer det. 1987 / Paratypus" pr.; "Paratypus" hwr. (transcriptions and dissections by the writer: all specimens originally on the same pin).

4 specimens (same population sample, MBa), labeled: 1 ♀: "Homar 700 m / Nördl. Amman / O. Jordanien" hw.; "20.VI.1959 / J. & S. Klapperich" hw.; "*Dasytidius* / *subnudus* sp. n. / K. Majer det. 1987 / Paratypus" hw.; "Paratypus" prr.

1 ♀: "Transcription [pr.]: / Homar 700 m, O. Jordanien / Nördl. Amman 20.VI.1959 / J. & S. Klapperich" hw.; "*Dasytidius* / *subnudus* sp. n. / K. Majer det. 1987 / Paratypus" pr.; "Paratypus" prr.

1 ♂ (!), 1 ♀: "Transcription: / Homar 700 m / Nördl. Amman / O. Jordanien" pr.; "Transcription: 20.VI.1959 / J. & S. Klapperich" pr.; "Transcription: *Dasytidius* / *subnudus* sp. n. / K. Majer det. 1987 / Paratypus" pr.; "Paratypus" prr. (dissection and label transcription by the writer).

All paratypes from Near East localities (Majer 1991a: 10) – Israel: Jerusalem, Kubebe (near Jerusalem); Jordan: Homar, Wadi Sir, Jerash. Syria: Aleppo – should be referred to subspecies *infinitus*.

Description

This description has been based on the 2 paratypes from the typical locality.

Dimensions (in mm). ♂: length: 2.9, width: 1.15; ♀: length: 3.1, width: 1.25.

♂. Body slightly widened in posterior third. Dorsal integuments blackish with greenish reflexes, finely punctuate. Pubescence rather dense, thin and long, silver-yellowish. Legs entirely yellow but the tips of tarsal articles more or less darkened. Antennae dark brown with articles 2-3 entirely yellow and 4-6

spotted yellowish. Antennal article 2 globose, 3 and 4 small, 5-9 transverse. Pronotum transverse (W/L = 1.25), very convex: lateral sides (which are finely crenulated) cannot be seen from above. Elytra convex, apices separately rounded, apical angle convex. Median lobe as in Fig. 24, paler in the middle and darker apically. Internal sac with basal part simple and distal part (which is free from small aggregate of needles) with 2 large, conical, bent teeth followed by ≈ 10-12 same shape but smaller ones. Cp simple at base. Spf type 3.

♀. Very similar to ♂, can be recognized only by elytral shape more widened in apical half with apices more flattened.

20. *Dasytidius optivus* Majer, 1989 (Figs. 2, 16-19, 48)

Dasytidius optivus Majer, 1989b: 143-145, 154, figs. 15, 16, 37, 48, 63, 79, loc. typ. Avdincik-Ovacik (TR, Mersin prov.); Majer, 1991b: 17; Majer, 1996a: 158.

A species identified on types examination and original description and drawings.

Types studied

2 Paratypes [♂ !, ♀ (previously on the same pin), CCo], labeled:

"Transcription [pr.] / Aydincik-Ovacik / 4.V.1895 Türkei / W. Wittmer" hw. by Majer; "Para / type" prr.; "Paratype / *Dasytidius* / *optivus* / Majer 1996" prr. [by Constantin]; "*Dasytidius optivus* sp. n. / K. Majer det. 1987 / Paratypus" hw. by Majer.

Other materials studied

Mersin prov.: Erdemli 6 Km NW 300 m (!, 2011, CLi); Kargicak [NW of Silifke] 10 Km N (Angelini, 2011, CLi); Kösecobanlı [28 Km NW Gulnar] (Jennson, 2006, CCo).

Malatya prov.: Sürgü (Angelini, 2011, CLi)*.

*: 1 ♂ and 2 ♀, internal sac slightly different from the population samples collected in the Mersin province (Fig. 17).

Paratypes localities. Turkey: Adana, Izmir (Bornova) [area north of the town], Silifke, Gamalom [unidentified locality], Avanos [15 Km NE of Neveshir].

Distribution: south central Turkey (Fig. 48).

Description

Dimensions (in mm). ♂♂: length 2.2-3.0, width 0.75-0.95; ♀♀: length 3.0-3.4, width 1.1-1.3.

♂. Small, body moderately convex, nearly parallel. Dorsal integuments black, bright. Legs entirely black, at times with brown tarsi. Antennae black with article 2 yellow and 3-4 more or less brown to black. Pubescence grey-yellowish, nearly double (namely many setae slant, half-raised) to really double (namely several setae erect), particularly on elytra, lateral fringe well developed.

Antennal articles 2-3 elongate, 4 balanced, 5-10 transverse, 4-6 sub-triangular (internal side longer than external), 7-10 globular. Pronotum rather convex, sub-rectangular, transverse (W/L = 1.15-1.25), lateral sides crenulated and moderately bowed, narrower than elytral base, max width in the middle or just behind. Elytra rather depressed, apices (nearly) jointly rounded, apical angle slightly obtuse, not always well defined. Pygidium feebly emarginated on posterior border (Fig. 18).

Median lobe as in Fig 16. Internal sac: basal part nearly simple, with a hardly visible granulation zone close to median lobe apex; distal part with a loose granulation zone placed across the median lobe basal edge and a short, linear aggregate of parallel, transverse needles. Cp basally widened and more or less forked. Spf type 2, intermediate to type 1 (Fig. 19).

♀. Very similar to ♂ with antennae shorter and antennal articles more transverse (but a variable character) and elytra widened in apical half.

Notes

A species known of the Mersin province, in Turkey, possibly with a larger distribution (Fig. 48): a single specimen from Sürgü (about 450 Km north-east from the typical locality), above reported, has a similar median lobe but looks rather different in internal sac (Fig. 17). Whether it is a different species, a subspecies or a simple population variability will be understood when more materials will be available for study.

21. *Dasytidius congruens* Majer, 1989 (Fig. 22, 48)
Dasytidius congruens Majer, 1989b: 143, 154, figs. 13, 14, 47, 62, 77, loc. typ. Symi Island [Dodecaneso, Greece]; Majer, 1991b: 19; Majer, 1996a: 158.

The interpretation of this species is not based on

types (the studied paratype is a ♀) but on description and excellent Majer's drawings. It is in agreement with the interpretation given by R. Constantin (as witnessed by the 2 ♂♂ from Bodrum determined by him).

Types studied

1 Paratype (♀, CCo) labeled: "Turcia 20.VI.1983 / Sultan Dag / J. Hladil leg." pr.; "Para / type" prr.; "Dasytidius / congruens sp. n. / K. Majer det. 1987 / Paratypus" hw. Majer.

Other materials studied

TURKEY

Balikesir prov.: Sindirgi (!, 2010, CLi).

Manisa prov.: Borlu (!, 2010, CLi).

Aydin prov.: Akçaova (!, 2010, CLi); Çakmak nr. Didim (Ponel, 2005, CLi); Priene (Ponel, 2005, CLi).

Denizli prov.: Serinhisar (!, 2010, CLi).

Mugla prov.: Bodrum (Teunissen, 2004, CCo); Mugla (!, 2010, CLi).

Adiyaman prov.: Nemrut Dag (Susini, 1983, CLi).

Paratypes localities: Sultan Dag, Rhodes Is., Kamiros on Rhodes Is.

Distribution: probably the whole of southern Turkey and Dodecanese islands.

Description

Dimensions (in mm). ♂♂: length 2.2-2.6, width 0.75-0.85; ♀♀: length 2.6-2.9, width 1.0-1.1.

Small, body parallel, convex with elytral extremities rather flattened. Dorsal integuments black, brilliant. Femora dark brown; tibiae yellow with, often, a narrow black ring at the extremities; tarsi more or less blackish with articles basal part pale brown to yellowish. Antennae blackish with articles 2-3 yellowish and 4-5 variably spotted pale brown. Pubescence silver-yellowish with a green tone, long and very dense, single: only a few setae raised close to elytral borders, lateral fringe visible although not well developed.

Antennal articles 2-4 balanced, 5-10 transverse. Pronotum convex, visibly transverse (W/L = 1.35-1.45), lateral sides finely crenulated and bowed, narrowed in anterior half, as wide as elytral base, max width in the middle or just behind. Elytral apices jointly truncated, slightly divergent, apical angle rectangular.

Median lobe as in Fig. 22. Internal sac: basal part with a granulose zone visible inside the median

lobe apical half; distal part simple. Cp basally forked. Spf type 2.

♀. Size slightly bigger than ♂, antennae similar but articles 4-7 slightly thinner, eyes less rounded (moderately flattened); elytra widened and more convex in apical half, apices more flattened; not evidently (as in ♂) jointly rounded, apical angle more rounded, rectangular to acute.

Notes

Placed by Majer in the *optimus*-group, close to *D. brevicornis* (1996a: 158). It seems to be a common species in SW Turkey; a single finding in the SE of this Country (Fig. 48) suggests that it could be widespread all-over south Turkey.

ACKNOWLEDGMENTS

Robert Constantin provided, on loan, many Majer types and specimens from his collection, which have been the ground of this paper.

Fabrizio Rigato facilitated the study of the rich

materials (already studied by Karel Majer) housed in the “Museo Civico di Storia Naturale di Milano”.

Isidor Plonski and Harald Schillhammer, of the Wien Natural History Museum, supplied on loan important materials, among which several Majer types. Isidor Plonski also provided information on a Turkish locality.

Matthias Borer sent on loan several Majer types, as well as non-typical materials studied by the same author.

Fernando Angelini (1948-2021) contributed with a large amount of materials both on loan and as a gift.

Zdenek Malinka allowed the study of the rich materials of his collection.

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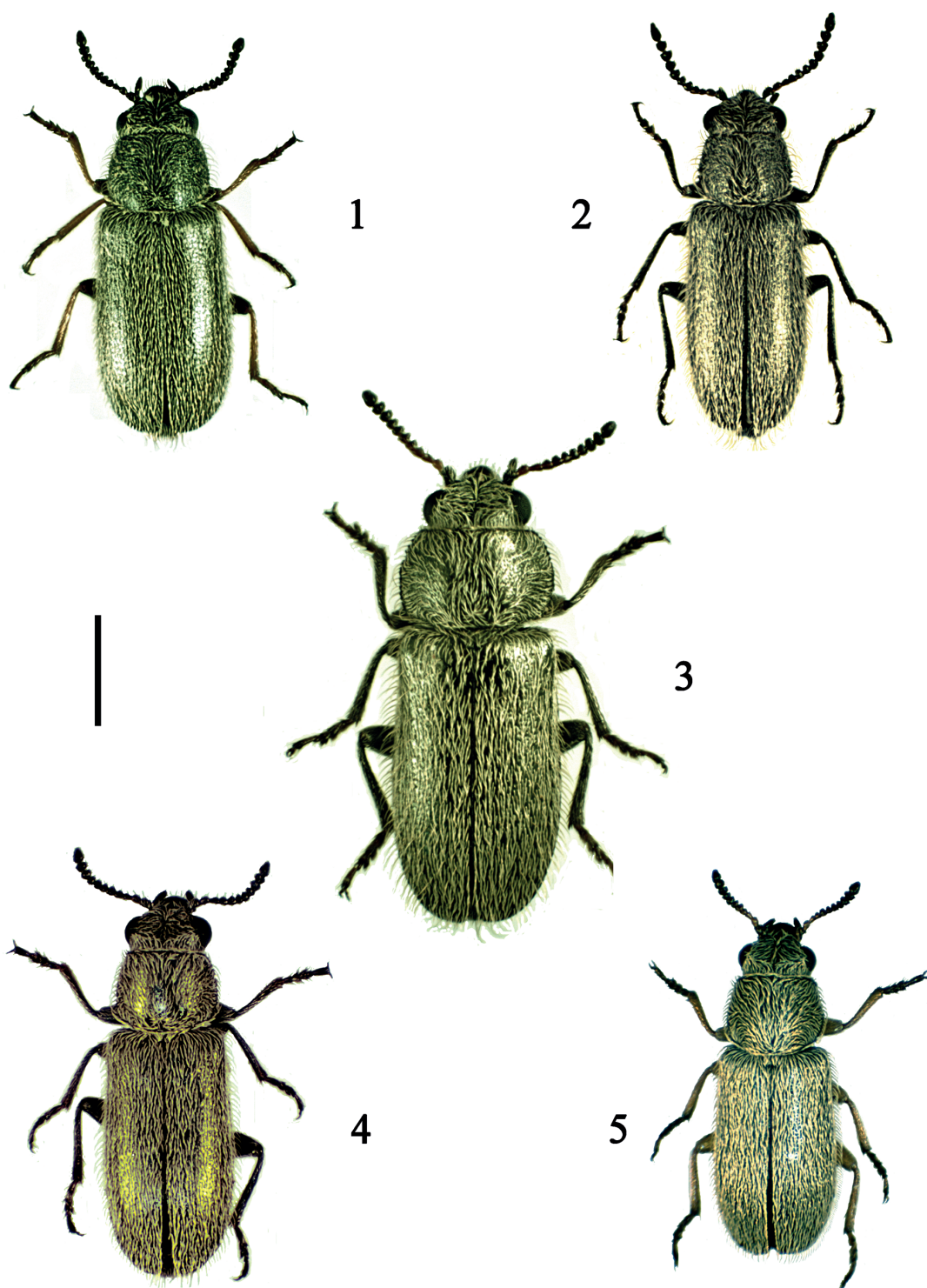
Tab. 1. Observable differences between *D. alfieri* (with 2 morphae), *D. syriacus* (with 3 morphae) and *D. subsyriacus*.

	<i>alfieri</i> typical	<i>alfieri</i> “Lebanon” m.	<i>syriacus</i> “south of Dead Sea” m.	<i>syriacus</i> “north of Dead Sea” m.	<i>syriacus</i> typical	<i>subsyriacus</i>
Legs color	Dark femora, yellow tibiae. In Jordan populations legs entirely dark	Dark femora, yellow tibiae	Entirely dark	Entirely dark	Dark femora, yellow tibiae	Dark femora, yellow tibiae
Median lobe shape in apical half	Thicker, not sinuous, slightly convex on dorsal side (Figs. 39, 40)	Thicker, not sinuous, slightly convex on dorsal side	Thinner, slightly concave on dorsal side, less sinuous than typical form	Thinner, just sinuous (nearly straight) on dorsal side (Fig. 42)	Thinner, clearly sinuous (more so on ventral side), slightly concave on dorsal side, (Fig. 41)	Evidently sinuous, apically longer and thinner (Figs. 44, 45)
Internal sac (distal part) spinules	Many small spines (≈20) all the same size but 3-4 slightly bigger	Only 6-9 spines, moderately larger than in typical form	Only 4-6 hooked spines, about same size of typical form	Many small, slightly bent spines (>15), first 2-4 visibly bigger	About 10 spines, rather large and moderately bent	4-5 moderately bent spines

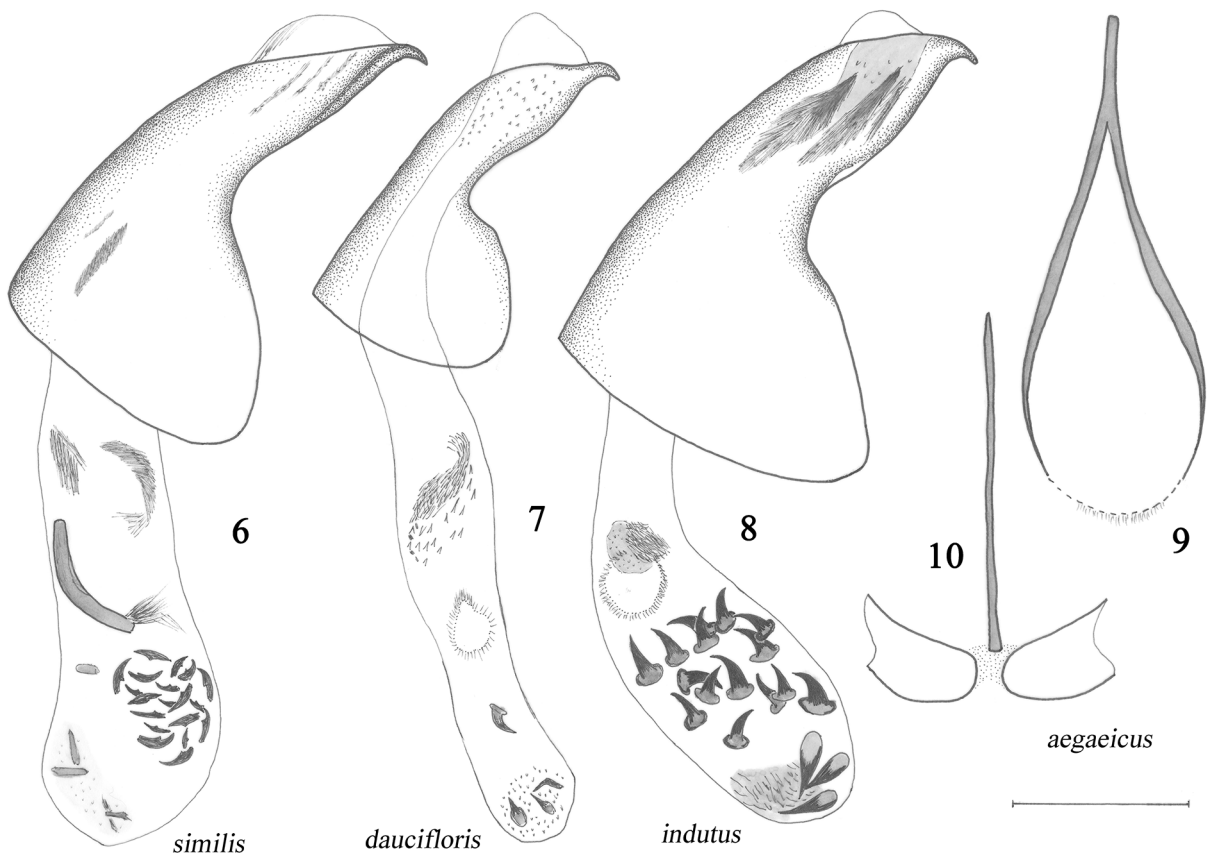
Tab. 2. Main differences between five similar forms: *D. indutus* subsp. *indutus*, subsp. *aegaeicus*, subsp. *funnebris*, *D. similis* and *D. daucifloris*.

	<i>indutus indutus</i>	<i>indutus funnebris</i>	<i>indutus aegaeicus</i>	18) <i>similis</i>	17) <i>daucifloris</i>
Femora colour	Brown	Blackish	Brown	Yellow	Brown
Tibiae colour	Yellowish, at times darkened apically	Blackish	Yellow	Yellow	Yellow (variable)
Size in mm	Larger: 3.0-3.6	Larger: 3.1-3.6	Larger: 3.0-3.6 (but variable)	Larger: 3.3-3.8	Moderately smaller: 2.7-3.3
Median lobe apex	Slender (Fig. 8)	Thicker (Figs. 13, 15)	Thicker (Figs. 11, 12)	Thin (Fig. 6)	Slender (Fig. 7)
Internal sac distal part: “upper” spines*	13-15, large, conical, bent	4-6, large, conical, bent	7-12, large, conical, bent	12-13, small, thin (not conical)	1-2, rather small, conical, bent
Organs – different from spines – in internal sac basal part	2 evident agglomerates of needles close to median lobe apex	Absent (just a tiny granulosity)	Nearly absent (just a tiny granulosity)	Presence of 2-3 hardly visible, thin needles agglomerates	Absent (just a granulo- se zone at apex)
Organs – different from spines – in internal sac distal part	A couple of needles sets near median lobe base plus a granulose, dull membrane at apex (Fig. 8)	2-3 small needles aggregate plus a few very small spinules close by (Figs. 13-15)	2-3 sets of loose needles (Figs. 11-12)	A large rod plus at least 2 needles aggregates (Fig. 6)	At least 1 needles aggregate, close to median lobe base, large and disordered (Fig. 7)

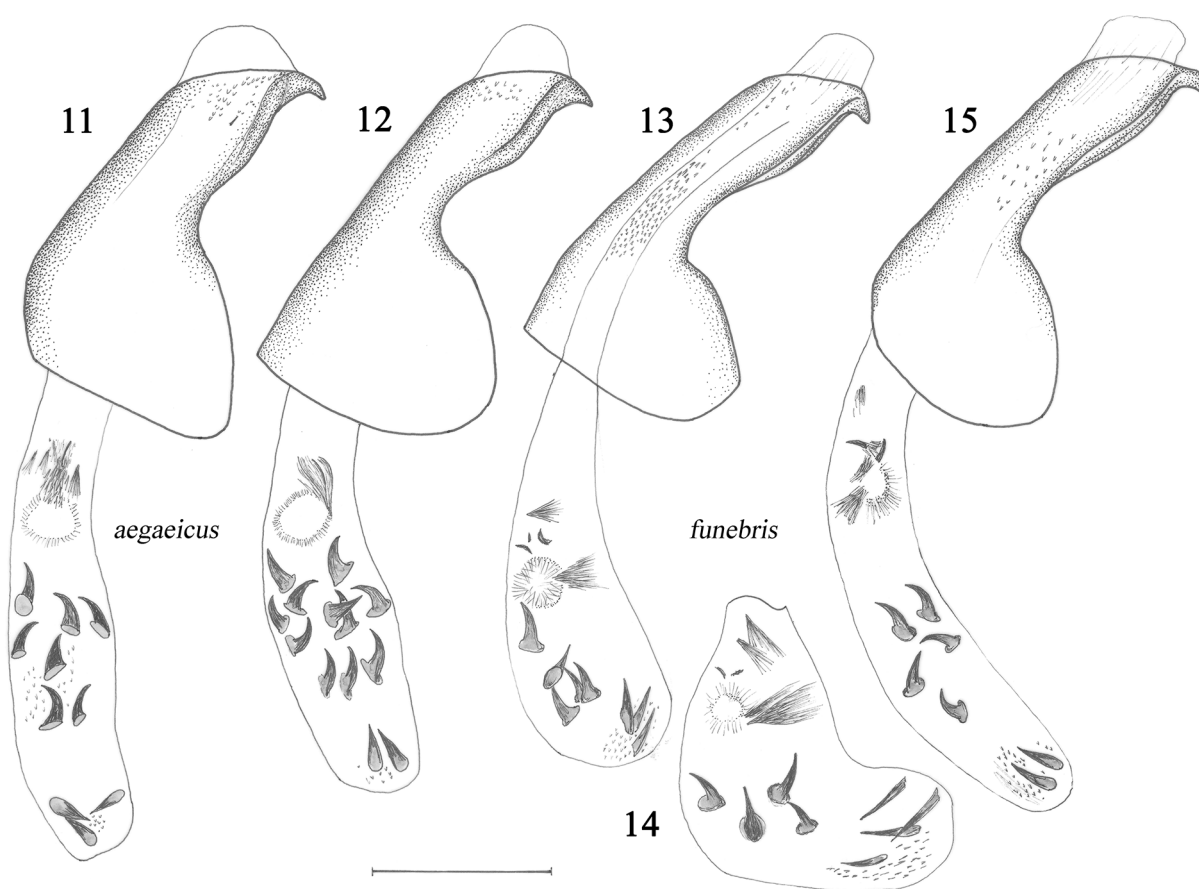
*Reference is made here only to the “upper spines”, with exclusion of the small group of differently shaped (conical flat and straight) spines found at the very tip of internal sac.



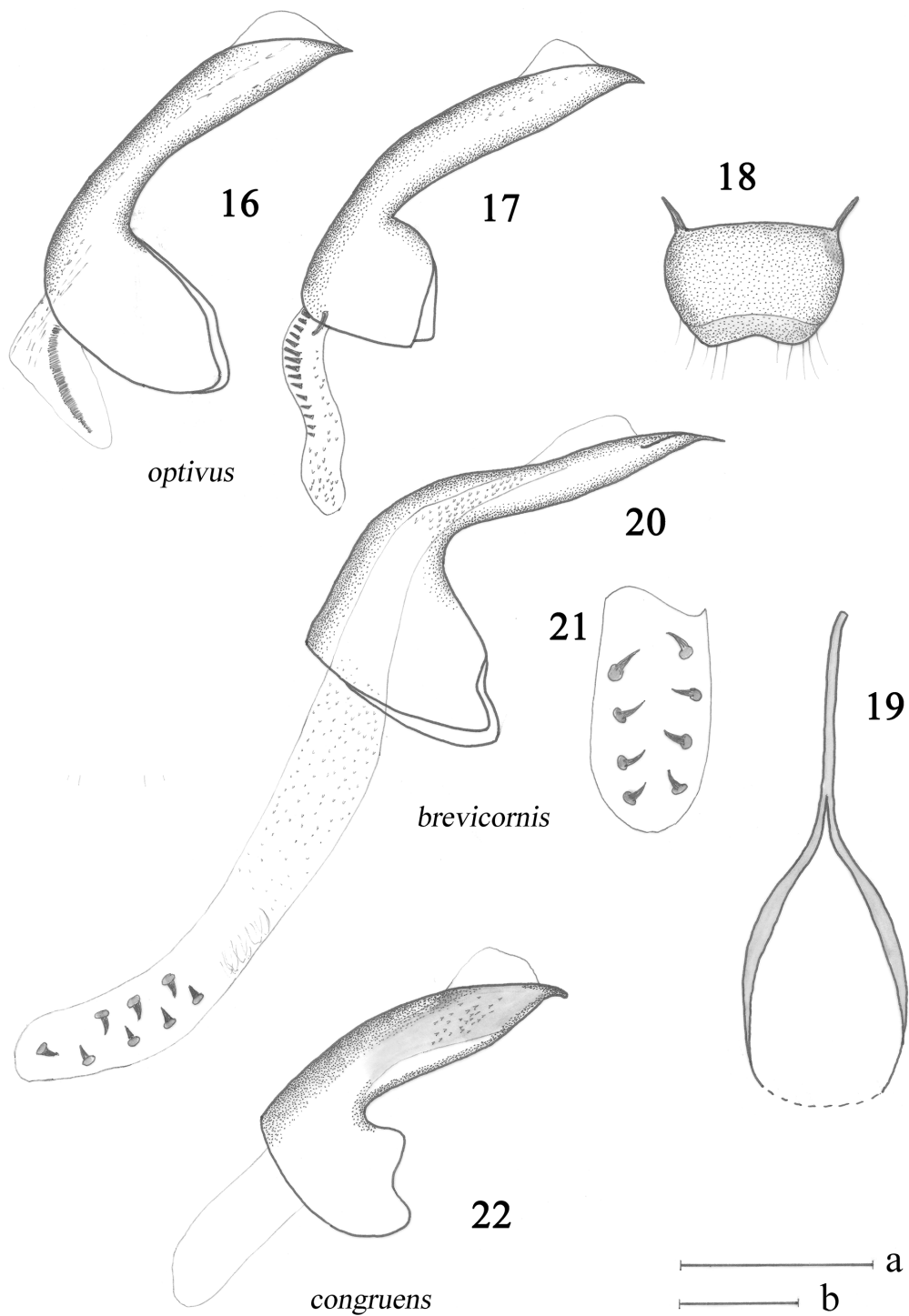
Figs. 1-5. Habiti. 1: *D. indutus aegaeicus* Liberti (Siros Island, Kiklades, Greece). 2: *D. optivus* Majer (Erdemli 6 Km NW, Mersin prov., Turkey). 3: *D. latissimus* Majer (Kargicak, Mersin prov., Turkey). 4: *D. nigripes* Pic (Kirikhan, Iskenderum prov., Turkey). 5: *D. emgei* Reitter (Delfi, Fokida, Greece). Scale: 1 mm.



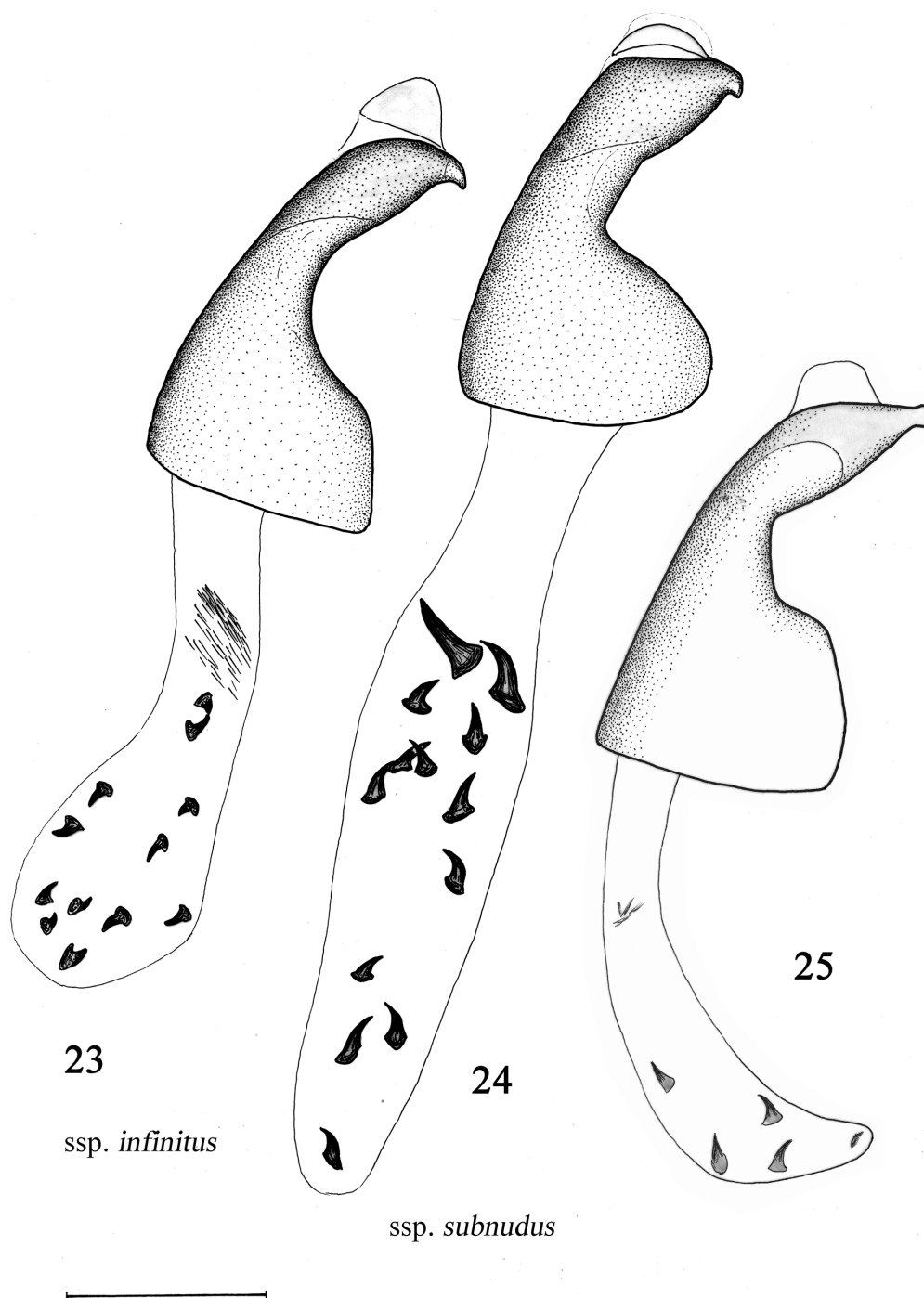
Figs. 6-10. 6-8: median lobes with internal sac; 9: spicular fork; 10: sternite 8th median process. 6: *D. similis* Schilsky (Kalkan: specimen compared with the holotype of *D. malkini*). 7: *D. daucifloris* n. sp. (paratype from Özdere, south of Izmir). 8: *D. indutus indutus* Kiesw. (Nea Selevkia near Igoumenitsa). 9, 10: *D. indutus aegaeicus* Liberti (both same specimen, Syros Island: Galissas). Scale 0.25 mm.



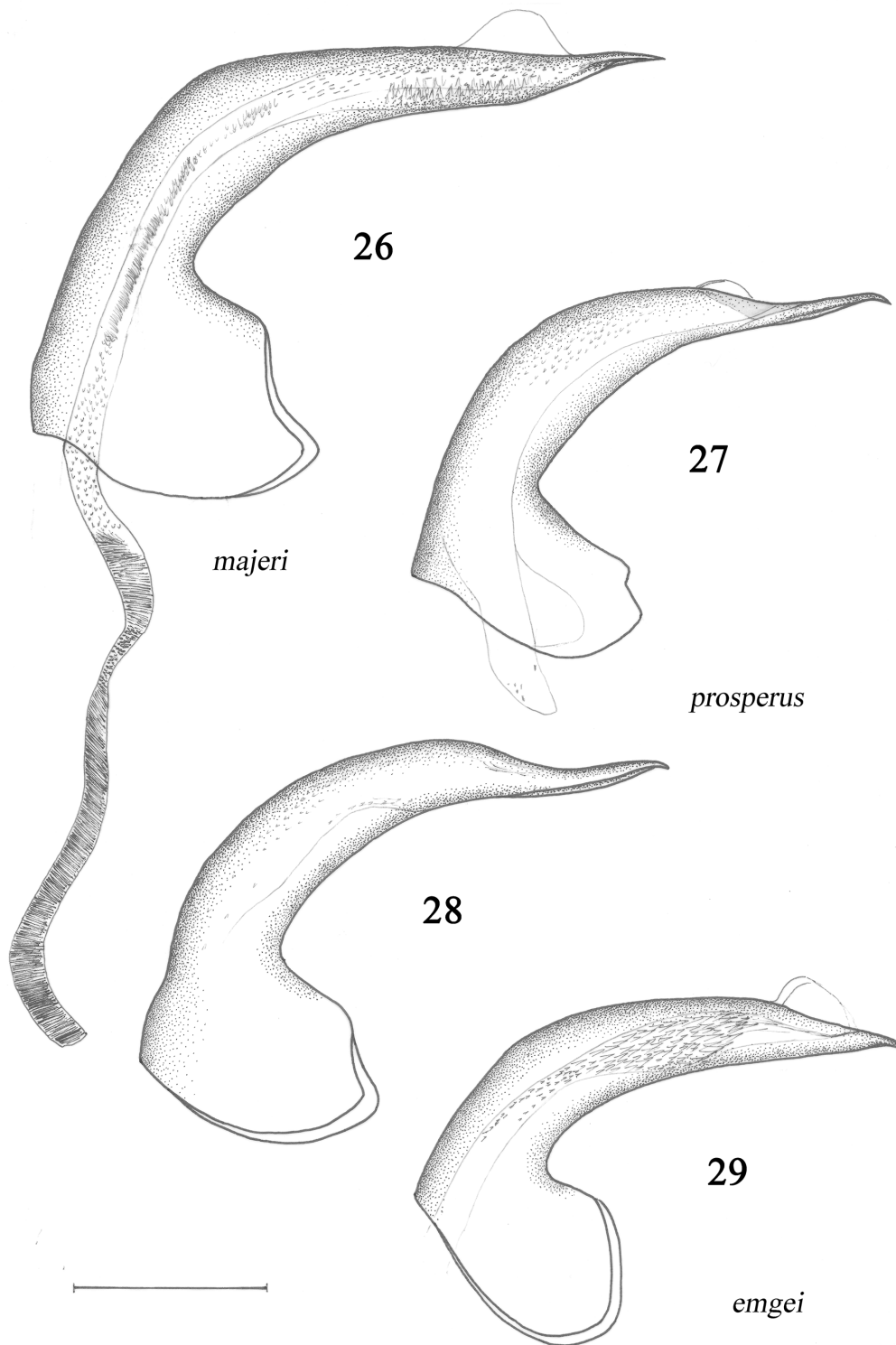
Figs. 11-15. 11-13 and 15: median lobes with internal sac; 14: distal part of internal sac only. 11, 12: *D. indutus aegaeicus* Liberti (11: Aghia Pelagia, Gazi, Crete; 12: paratype, Kerà, Lassithi, Crete). 13-15: *D. indutus funebris* Majer [13: Trouva (Troy); 14: paratype, Ankara, Baraj; 15: paratype of *D. impar*, Alanya]. Scale 0.25 mm.



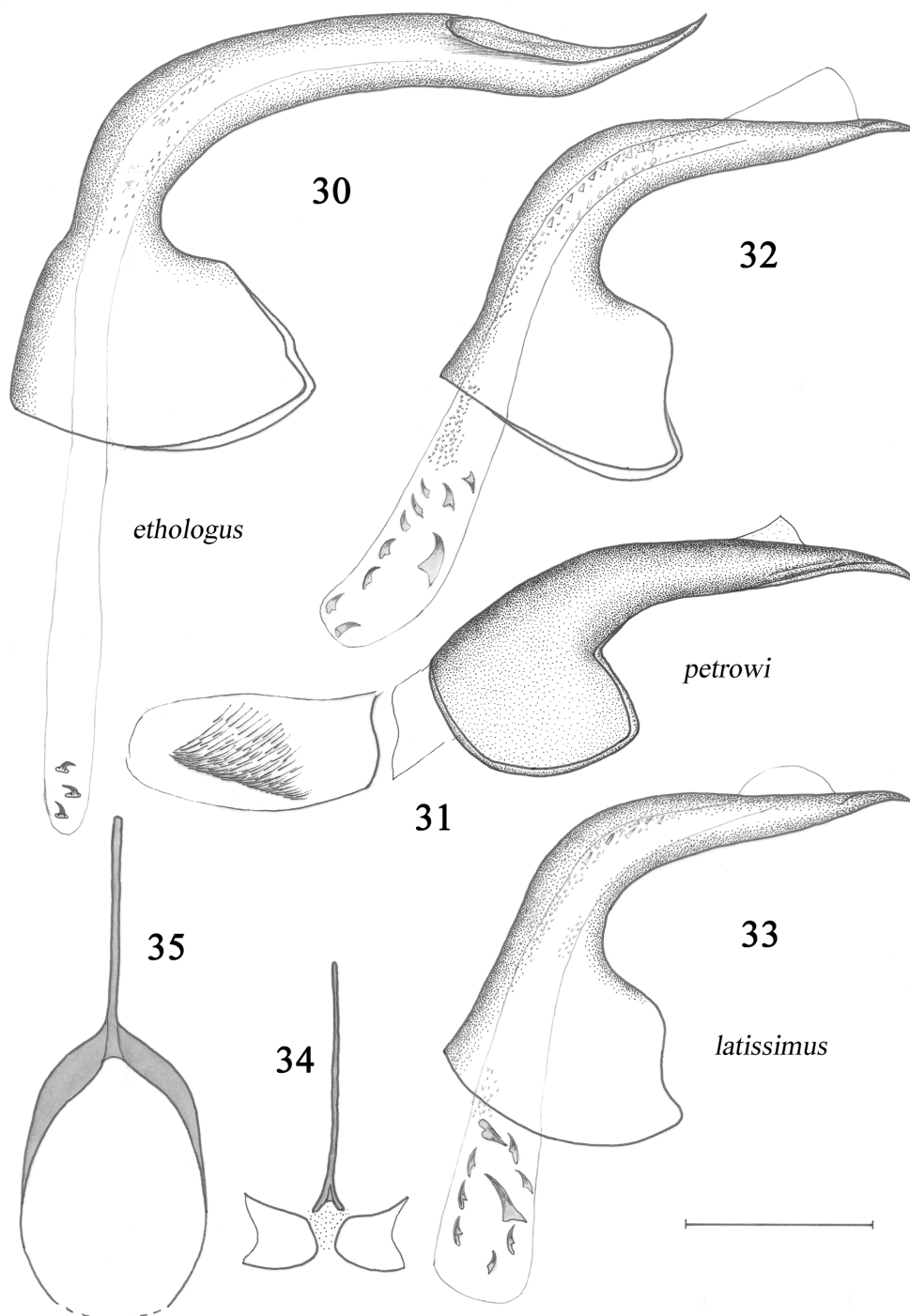
Figs. 16-22. 16, 17, 20, 22: median lobes with internal sac; 18: pygidium; 19: spicular fork; 21: apex of distal part of internal sac. 16, 18-19: *D. optivus* Majer [Kargicak, Mersin prov., same specimen]. 17: *D. optivus* variant (Sürgü, Malatya prov.). 20-21: *D. brevicornis* Majer (20: Dikili, Izmir prov.; 21: Samos Island, Dodecanese). 22: *D. congruens* Majer (Borlu, Manisa prov.). Scales 0.25 mm (scale B applies to Fig. 18 only).



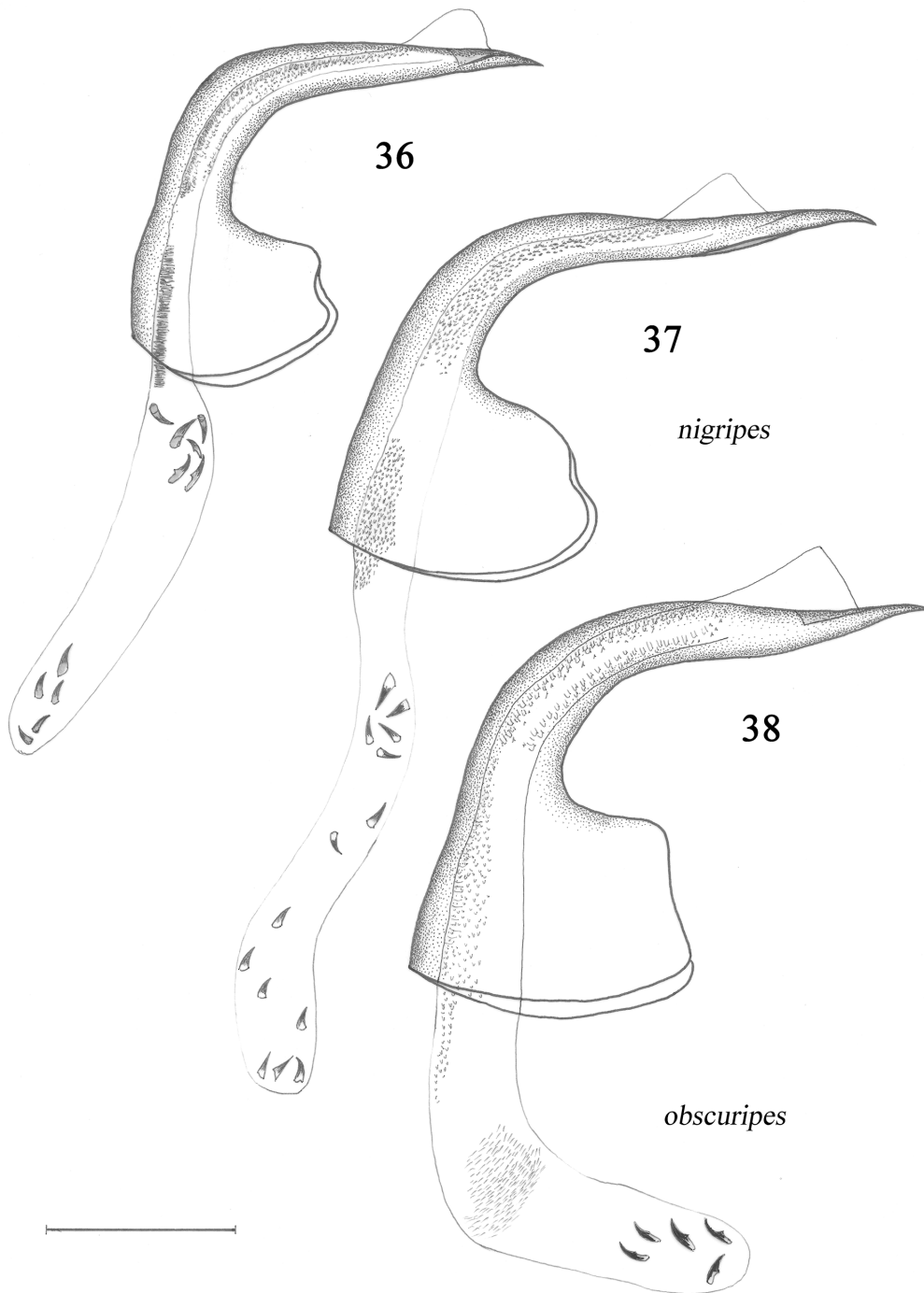
Figs. 23-25. Median lobes with internal sac. 24: *D. infinitus subnudus* Majer (paratype from Schakhlaw, Kurdistan of Iran). 23, 25: *D. infinitus infinitus* Majer (23: Kubebe near Jerusalem; 25: Timar, Van prov.). Scale 0.25 mm.



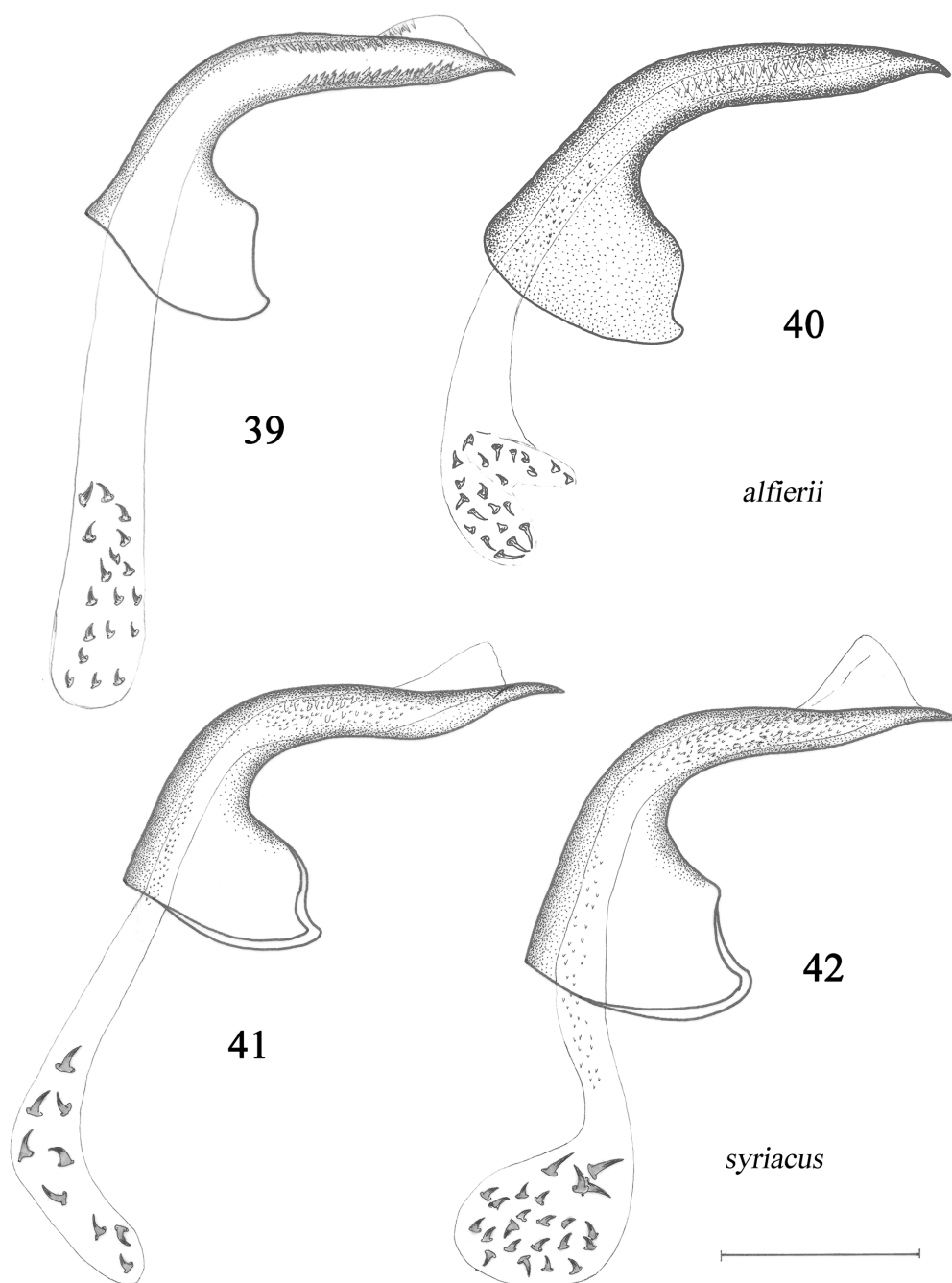
Figs. 26-29. 26: median lobe with internal sac; 27-29: median lobes. 26: *D. majeri* n. sp. (paratype, Mut, Mersin prov.). 27, 28: *D. prosperus* Majer [27: topotype of *D. insularis* Majer, Arisvi on Lesbos Island, Dodecanese; 28: paratype, Ankara, Baraj]. 29: *D. emgei* Reitter (Skala Oropu, Atiki-Pireas prov.). Scale: 0.25 mm.



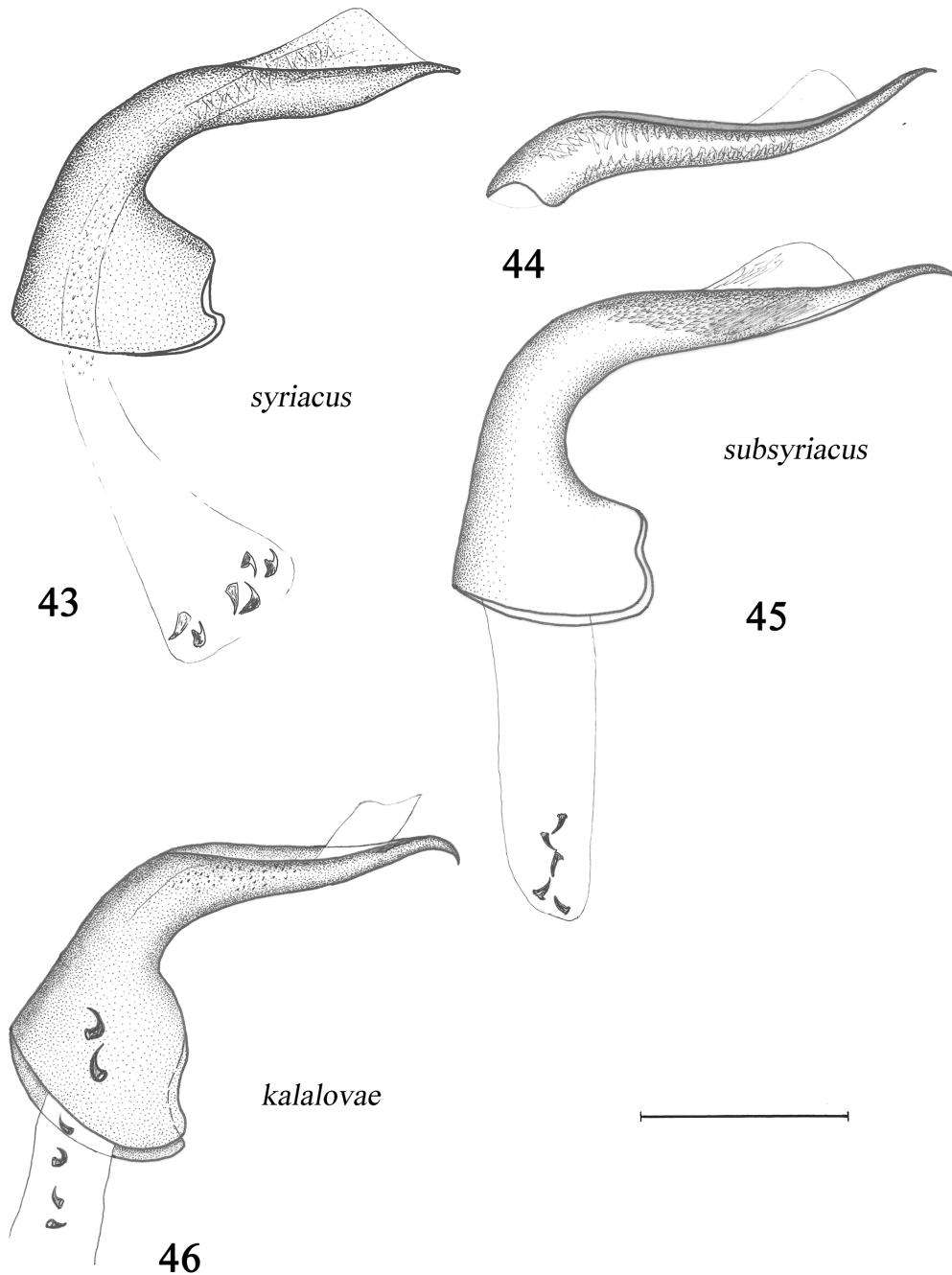
Figs. 30-35. 30-33: Median lobes with internal sac; 34: sternite 8th median process; 35: spicular fork. 30: *D. ethologus* Majer (Sak-touria, Crete). 31: *D. petrowi* Pic (Gharian, Tunisia). 32-35: *D. latissimus* Majer (all same specimen, Erdemli, Mersin prov. but 33: Camliyayla, Mersin prov.). Scale 0.25 mm.



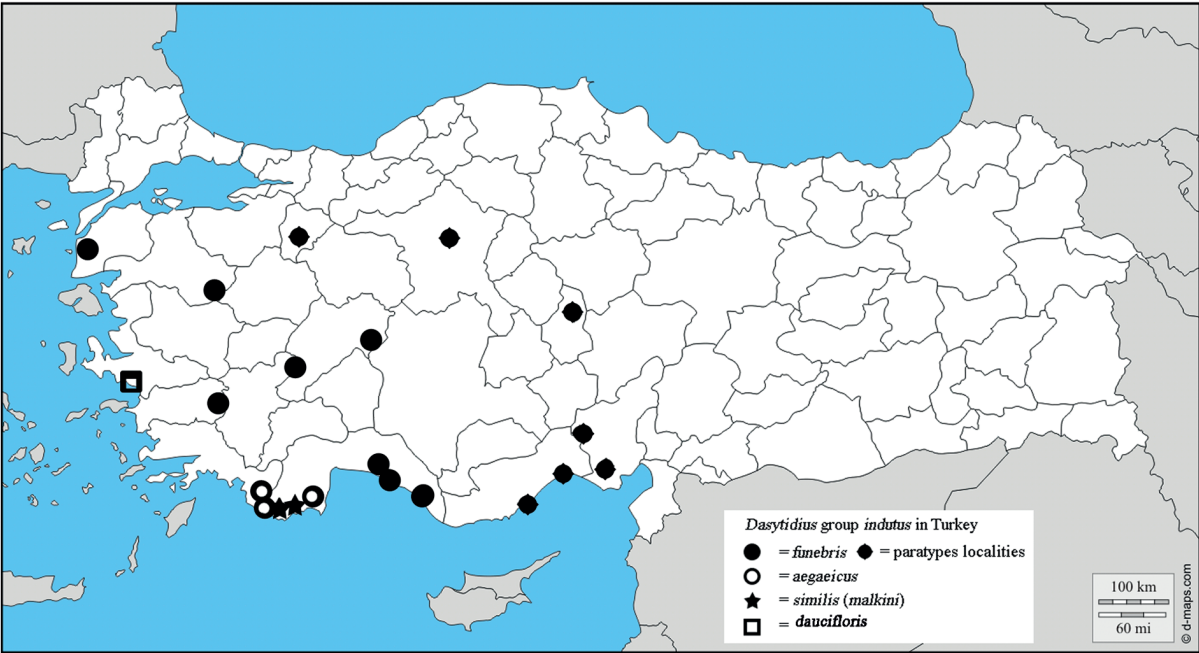
Figs. 36-38. Median lobes with internal sac. 36, 37: *D. nigripes* Pic (36: Hasanbeyli, Adana prov.; 37: Kirikhan, Iskenderum prov.). 38: *D. obscuripes* Pic (Rhodes, Fileremo). Scale 0.25 mm.



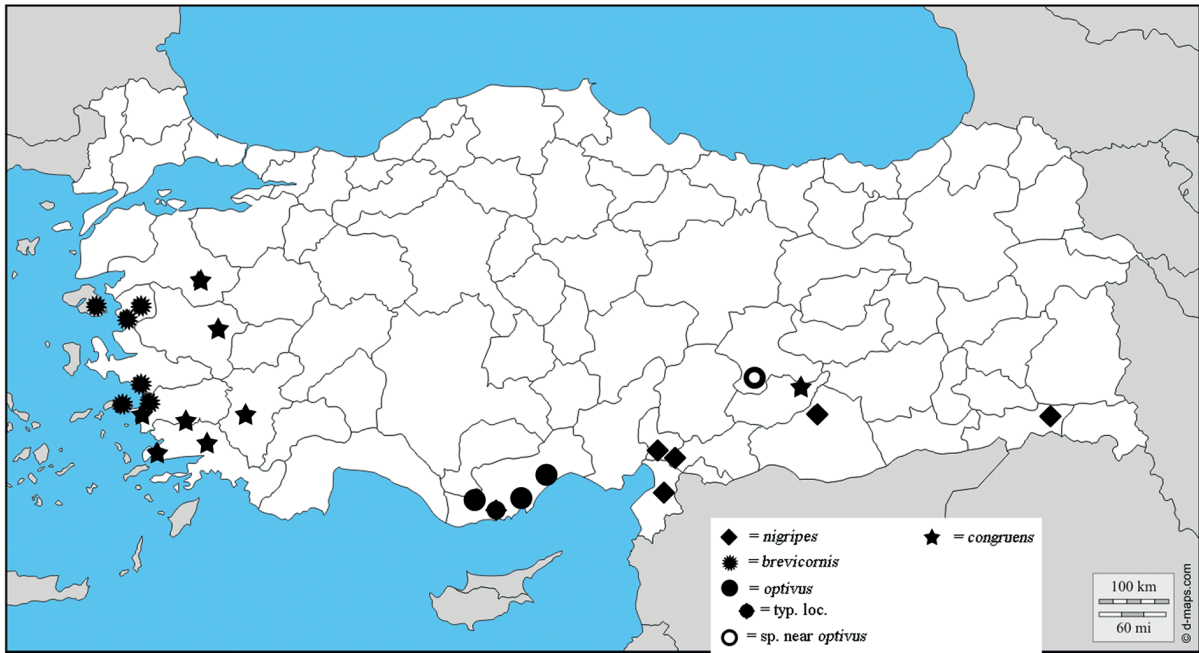
Figs. 39-42. 39-42: median lobes with internal sac. 39: *D. alferii* Wittmer [paratype of *D. atratus* Majer, Schaubak, Jordan (typical locality)]. 40: *D. alferii* Wittmer (topotype, St. Katherine, south Sinai). 41: *D. syriacus* (Reitter) (topotype, Haifa). 42: *D. syriacus* (Reitter) “north of Dead Sea” morpha (Adams Junction, Jordan Valley, Israel). Scale 0.25 mm.



Figs. 43-46. 43, 45, 46: median lobes with internal sac. 44: apical half of median lobe. 43: *D. syriacus* (Reitter) "south of Dead Sea" morpha (Al Is, 10 Km W of Al Tafilah). 44, 45: *D. subsyriacus* Majer (44: paratype, Jerash, Jordan, dated 25.IV.1958; 45: Dehben near Jerash, Jordan, dated 8.IV.1962). 46: *D. kalalovae* Majer (paratype, Bagdad). Scale 0.25 mm.



47



48

Figs. 47-48. Known distribution in Turkey of several *Dasytidius* species.

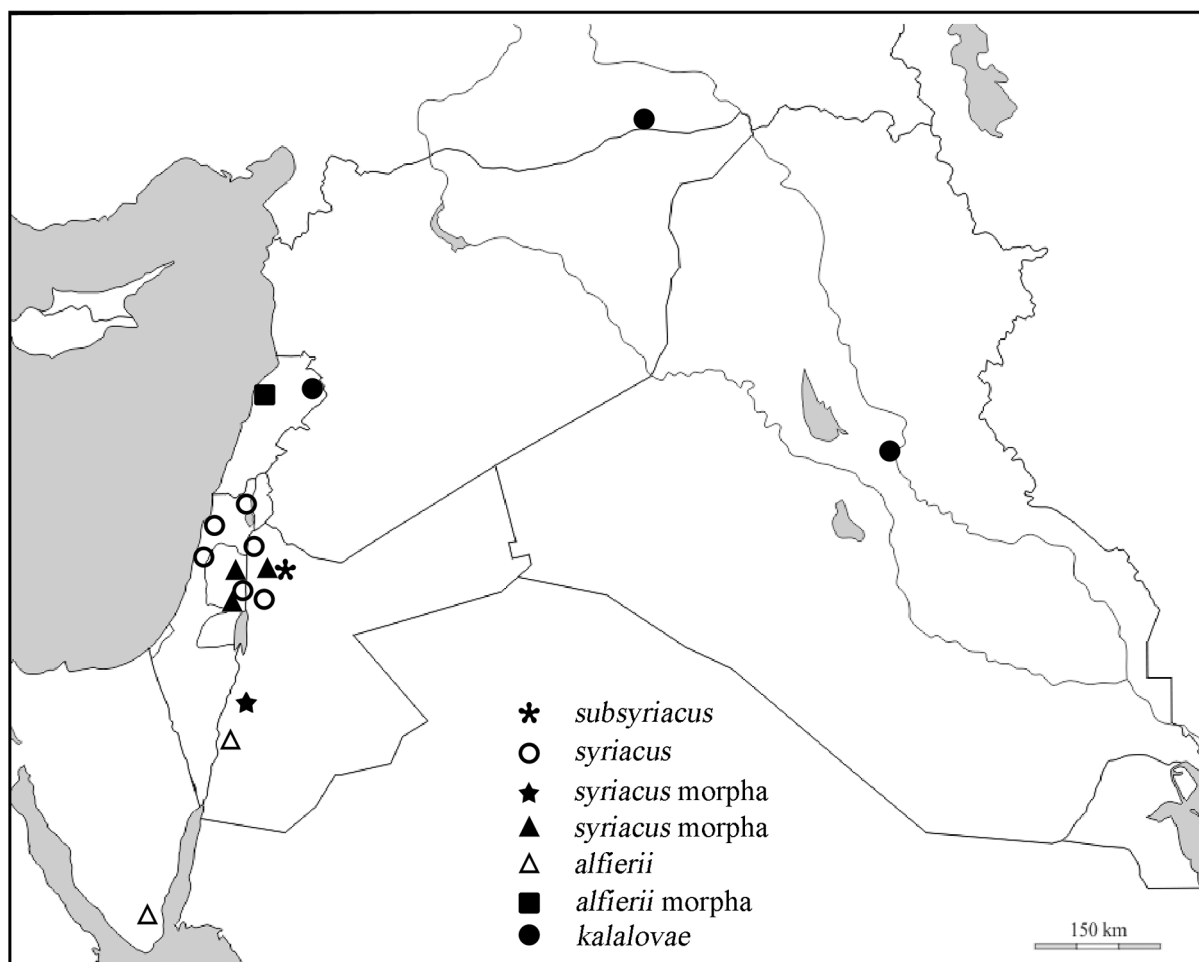


Fig. 49. Known near east distribution of several *Dasytidius* species.

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