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Integrated taxonomic revision of the mining bee subgenus *Andrena* (*Micrandrena*) (Hymenoptera: Andrenidae) in the Levant and Cyprus

Gideon Pisanty[1], Rémi Santerre[2], Teresa Martin[3], Sophie Cardinal[3], Thomas J. Wood[4]

1 *The Steinhardt Museum of Natural History, Tel Aviv University, Tel Aviv 6997801, Israel*

2 *Laboratory of Zoology, Research Institute for Biosciences, University of Mons, Place du Parc 20, 7000, Mons, Belgium*

3 *Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, 960 Carling Ave., Ottawa, Ontario, K1A 0C6, Canada*

4 *Naturalis Biodiversity Center, Darwinweg 2, 2333 CR, Leiden, the Netherlands*

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Corresponding author: Gideon Pisanty (gidpisa79@yahoo.com)

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Abstract

Andrena (*Micrandrena*) Ashmead is the largest subgenus of *Andrena* Fabricius 1775, with more than 150 species distributed throughout the northern hemisphere. The subgenus has gained notoriety as one of the most difficult taxonomic groups of bees, and remains poorly studied across large parts of the Palaearctic region. Based on extensive collecting in Israel, Lebanon and Cyprus, together with efficient DNA barcoding and and re-examination of old museum material, we present a thorough revision of the species of *A.* (*Micrandrena*) occuring in the region of the Levant (Israel, the West Bank, Jordan, Lebanon and Syria) and the island of Cyprus, including a detailed identification key, and a summary of our knowledge of the distribution, phenology and foraging biology of each taxon. Our study enumerates forty-two species of *Andrena* (*Micrandrena*) from the Levant and Cyprus, including four species new to the region, and nine species new to science: *Andrena aphroditae* Pisanty **sp. nov.**, *A. alshaykh* Pisanty **sp. nov.**, *A. aspera* Pisanty & Wood **sp. nov.**, *A. chananaea* Pisanty & Wood **sp. nov.**, *A. friedmani* Pisanty **sp. nov.**, *A. hebraica* Pisanty & Wood **sp. nov.**, *A. kugleri* Pisanty **sp. nov.**, *A. libanica* Wood **sp. nov.**, and *A. phoenicia* Pisanty **sp. nov.** We describe the males of *A. calandra* Warncke, 1975 and *A. lindbergella* Pittioni, 1950 for the first time. We additionally synonymise *Andrena dargia* Warncke, 1965 with *A. minutula* (Kirby, 1802) **syn. nov.**, and recognise two previously subspecific names as valid species: *Andrena leptura* Warncke, 1974 **stat. nov.** and *A. povolnyi*, 1974 Warncke **stat. nov.**

Keywords

DNA barcoding, Eastern Mediterranean, Israel, Jordan, Lebanon, solitary bee, species key, Syria

1. Introduction

Andrena (*Micrandrena*) Ashmead is the largest subgenus of *Andrena* Fabricius 1775, itself being the second largest genus of bees after *Lasioglossum* (Ascher & Pickering 2025; Wood 2025). With more than 150 species distributed throughout the northern hemisphere, this group has been heavily studied, both taxonomically and ecologically (Ribble 1967; Tadauchi 1985a,b; Westrich 1989; Osytshnjuk 1994; Schmid-Egger & Scheuchl 1997; Xu

& Tadauchi 2011; Dardón et al. 2014), although no major revision has been conducted for western Palaearctic taxa. *Andrena* (*Micrandrena*) have gained notoriety as one of the most difficult taxonomic groups of bees. Apart from their small body size, many species exhibit striking similarities in one or both sexes, and are very difficult to distinguish morphologically. To complicate things further, many species appear in two generations with different morphologies, thus creating a potential for erecting false species concepts and making it especially difficult to correctly associate sexes with one another, further blurring our understanding of species boundaries (e.g. Perkins 1914).

Because of their small size and difficulty to recognize in the field, the life history of many species is poorly known. From the better-studied species, it appears that many are pollen generalists, meaning that plant associations also cannot help with species identification (Westrich 1989, although see Westrich 2010 for a counter example). Given these difficulties, the taxonomic understanding of species boundaries with *Andrena* (*Micrandrena*) has benefited much in recent decades from the analysis of genetic sequences such as COI barcodes and ultra-conserved elements (UCE). Indeed, several species concepts within *Andrena* (*Micrandrena*) have been modified or refined following molecular genetic analyses (Schmidt et al. 2015; Kratochwil et al. 2022; Praz et al. 2023; Wood 2023a, 2024).

The taxonomic circumscription of the subgenus *Andrena* (*Micrandrena*) has seen some changes over the years. Most importantly, in an attempt to create stable monophyletic subgeneric divisions, a recent large-scale molecular phylogenetic study has broadened the traditional scope of the subgenus, to include also the groups known as *Distandrena* Warncke, *Fumandrena* Warncke, and *Proxiandrena* Schmid-Egger (Pisanty et al. 2022a). This, however, has come with a price, as the diversity of the resulting subgenus has become even further inflated, and its boundaries have become much harder to characterize morphologically, with hardly any character that unequivocally separates the subgenus from its close relatives such as *Aciandrena* Warncke, *Graecandrena* Warncke and related groups. This morphological ambiguity only adds to the difficult understanding of *Micrandrena* taxa at the species level (Pisanty et al. 2022a).

While *Andrena* (*Micrandrena*) have been heavily studied in Western and Central Europe, even historically (e.g. Perkins 1914; Stöckhert 1924, 1935; Noskiewicz 1939), our knowledge of the species in the Levant (here interpreted as Israel, the Gaza Strip, the West Bank, Jordan, Lebanon and Syria) and the island of Cyprus is very limited, and comes mostly from the work of Klaus Warncke. Aside from his major revision of the subgeneric classification of *Andrena* (Warncke 1968a), Warncke preferred to format his *Andrena* publications as complete species inventories of specific georgraphical areas at the whole genus level, rather than focus on specific subgenera or species groups. Only one of his publications was dedicated to the Levant (specifically Israel, Warncke 1969), this work including only five species of *Micrandrena* (including the now obsolete subgenus *Andrena* (*Distandrena*)), probably due to a dearth of available material. In his later publications on the *Andrena* of Turkey (Warncke 1974a, 1975a) and North Africa (Warncke 1974b), he also named several additional species extending into the Levant. Work on Cypriot bees, including *Andrena*, was done mostly by Mavromoustakis (see Varnava et al. 2020 for updated checklist and full reference list), but he worked very little on *Micrandrena* or other related small-bodied subgenera. A 43-year gap followed from Warncke's major publications until the next major assessment of Levantine and Cypriot *Micrandrena*, when additional species originally described from Turkey and North Africa were newly identified from the region, and seven new species were described (Pisanty et al. 2018, 2022b; Wood et al. 2020; Boustani et al. 2021; Wood 2021; Wood & Monfared 2022). Indeed, our knowledge of the taxonomy of *Andrena* in the Eastern Mediterranean has gained much depth in recent years, following several studies by local and European authors. Ongoing collecting, especially in Israel, Lebanon and Cyprus, coupled with molecular analysis of fresh specimens, and re-examination of old museum material, have clarified our understanding of species boundaries within *Andrena* (*Micrandrena*) while also revealing several species new to the region or to science. These findings have allowed us to hereby present a thorough revision of all the *Andrena* (*Micrandrena*) of the Levant and Cyprus, including a detailed identification key, and a summary of our knowledge of the distribution, phenology and foraging biology of each taxon.

2. Material and Methods

Body length was measured in lateral view to the nearest 0.5 mm, as the sum of distances from the antennal sockets to the posterior end of the propodeum and from the latter to the tip of the metasoma. For convenience, we followed some European forewing venation terms (e.g. Gusenleitner & Schwarz 2002) as follows: the vein separating the first and second cubital cells of the forewing (cu-v in Michener 1944) is referred to here as the nervulus. The nervulus is described as antefurcal, interstitial, or postfurcal, if its anterior end is situated proximal to, in alignment with, or distal to the posterior end of the basal vein, respectively. Other morphological terms follow Michener (2007). Photographs were taken using a ToupTek XCAM4K8MPB colour camera through a Leica M125 stereomicroscope with a Leica Plan APO 1.0x M Series objective and a Leica LED5000 HDI dome illuminator. Raw photographs were stacked using Helicon Focus 8.2.15 (Helicon Soft Ltd., Ukraine) and edited in Adobe Photoshop 24.6.0. Taxa are presented alphabetically, first by species groups and then by species. For species distributions, regions and countries marked with an "*" indicate the first published record for that area. Examined material is listed alphabetically first by country and then by the verbatim locality name, using the standardized

material citation format recommended by Chester et al. (2019).

DNA barcoding of the COI mitochondrial gene was conducted as specified in Pisanty et al. (2022b) and Wood (2024). All sequences are published on the Barcode of Life Database (BOLD) website under the dataset DS-MICRLVCY (dx.doi.org/10.5883/DS-MICRLVCY). Additional published sequences of some European species (e.g. Schmidt et al. 2015; Falk et al. 2019; Wood 2023a; Wood et al. 2024a; Loutsiou 2025) were mined from BOLD for comparison. All selected sequences were checked for the absence of stop codons and aligned in MAFFT (Katoh & Standley 2013) using the FFT-NS-i strategy and iterative refinement method (max. 2 iterations), with gap open penalty set as 1.53 and gap extension penalty as 0.123. Intra- and interspecific distances were calculated using MEGA-X (Kumar et al. 2018). As a preliminary phylogenetic analysis, a maximum likelihood tree of all aligned barcode sequences was generated in PhyML (Guindon et al., 2010) using the smart model selection option (SMS, Lefort et al. 2017). A final phylogenetic tree based on selected representative sequences was generated in IQ-TREE 1.6.12 (Nguyen et al. 2015) with 1000 ultra-fast bootstraps, under the default settings, using the command line ../../iqtree -s [filename] -m TEST -bb 1000 -alrt 1000. Partitions and models were estimated automatically using ModelFinder (Kalyaanamoorthy et al. 2017). Based on ultra-conserved element phylogenetic analyses (Pisanty et al. 2022a; S. Bossert, T.J.W., G.P. & M. Branstetter, manuscript in prepation), the barcode sequences of *Cubiandrena cubiceps* (Friese), *Andrena aciculata* Morawitz, *A. hyemala repressa* Warncke, *A. iliaca* Warncke, *A. janthina* Warncke, *A. janthinoides* Pisanty, *A. obtusa* Pisanty, *A. pavonia* Warncke, *A. pisantyi* Wood, *A. stenofovea* Scheuchl & Pisanty and *A. xera* Pisanty were added as putative outgroups. A single NUMT sequence containing a stop codon (of *A. pavonia*) was included in the analysis, as its position in the resulting tree helped illuminate the polyphyly of its species group. The final tree was edited in Interactive Tree of Life (iTOL) v6 (Letunic & Bork 2024) and Adobe Illustrator 29.6.1. The tree was rooted between *C. cubiceps* and all other sequences.

Specimen depositories are listed under the following acronyms: **AV** – Private collection of Androulla Varnava, Limassol, Cyprus; **CNC** – Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Canada; **CSE** – Private collection of Christian Schmid-Egger, Berlin, Germany; **ES** – Private collection of Erwin Scheuchl, Ergolding, Germany; **GPC** – Private Collection of Gideon Pisanty, Tel Aviv, Israel; **JS** – Private collection of Jakub Straka, Prague, Czech Republic; **IBER** – Bulgarian Academy of Sciences, Institute of Biodiversity and Ecosystem Research, Sofia, Bulgaria; **LB** – Private collection of Leander Bertsch, Munich, Germany; **MJ** – Private collection of Martin Jenner, United Kingdom; **MMBC** – Moravian Land Museum Brno, Czech Republic; **MNHN** – Muséum national d'Histoire naturelle, Paris, France; **MSNM** – Museo Cívico di Storia Naturale di Milano, Milan, Italy; **MZHF** – Finnish Museum of Natural History, Helsinki, Finland; **NHMUK** – Natural History Museum, London, United Kingdom; **OLML** – Oberösterreichisches Landesmuseum, Linz, Austria; **OUMNH** – Hope Entomological Collections, Oxford University Museum of Natural History, Oxford, United Kingdom; **RBINS** – Royal Belgian Institute of Natural Sciences, Brussels, Belgium; **RMNH** – Naturalis Biodiversity Center, Leiden, the Netherlands; **SMNHTAU** – The Steinhardt Museum of Natural History, Tel Aviv, Israel; **SPMR** – Private collection of Stuart P.M. Roberts, Reading, United Kingdom; **TJWC** – Private collection of Thomas James Wood, Leiden, the Netherlands; **TUZ** – Zoological collections of the Natural History Museum, University of Tartu, Estonia; **UMONS** – Laboratory of Zoology, University of Mons, Mons, Belgium; **UWCP** – University of Wroclaw, Wroclaw, Poland; **ZMB** – Museum für Naturkunde, Berlin, Germany; **ZSMC** – Zoologische Staatssammlung München, Germany.

3. Results and discussion

At the subgeneric level, the results of the phylogenetic analysis (Fig. 1) of COI barcodes largely support the broad concept of *Andrena* (*Micrandrena*) as outlined by Pisanty et al. (2022a), with a few modifications as follows: **1)** *Andrena immaculata* Warncke and *A. protuber* Pisanty clearly fall outside the *Micrandrena* clade, and are hereby removed from the subgenus. This finding is supported also by novel ultraconserved element (UCE) analysis (S. Bossert, T.J.W., G.P. & M. Branstetter, in prep.), as well as the species' unusual morphologies. *Andrena immaculata* possesses a strongly elliptical facial fovea and a mostly smooth, impunctate and sculptureless first tergum, both of which are found nowhere else within the subgenus. In *Andrena protuber*, the frons is very finely longitudinally striated, interspersed with fine punctures, the propodeal triangle is finely radially striated without areolation, and the flanking propodeal regions are finely reticulated with only hints of very fine areolation near the border of the triangle. These characters do not fit well with either the *minutula* or the *longibarbis* species groups of *Micrandrena* and are more suggestive of subgenera *A.* (*Euandrena*) and *A.* (*Chrysandrena*). **2)** The *Andrena janthina* species group, which forms a well-supported clade outside of subgenus *Micrandrena* in UCE analysis (Pisanty et al. 2022a; Bossert et al. in prep.), here appears polyphyletic, with two subclades nested within *Micrandrena*. This group was previously included in subgenus *Aciandrena* Warncke, and its position outside *Micrandrena* is supported by the morphology. Interestingly, the two nested subclades of this group both contain a sequence from the very same specimen of *Andrena pavonia* Warncke – one is a true COI barcode whereas the other is a NUMT. Placement of *A. pavonia* near *A. simontornyella* Noskiewicz in the second nested subclade, deep within the *A. minutula* species group, clearly makes no morphological sense. *Andrena pavonia* is morphological-

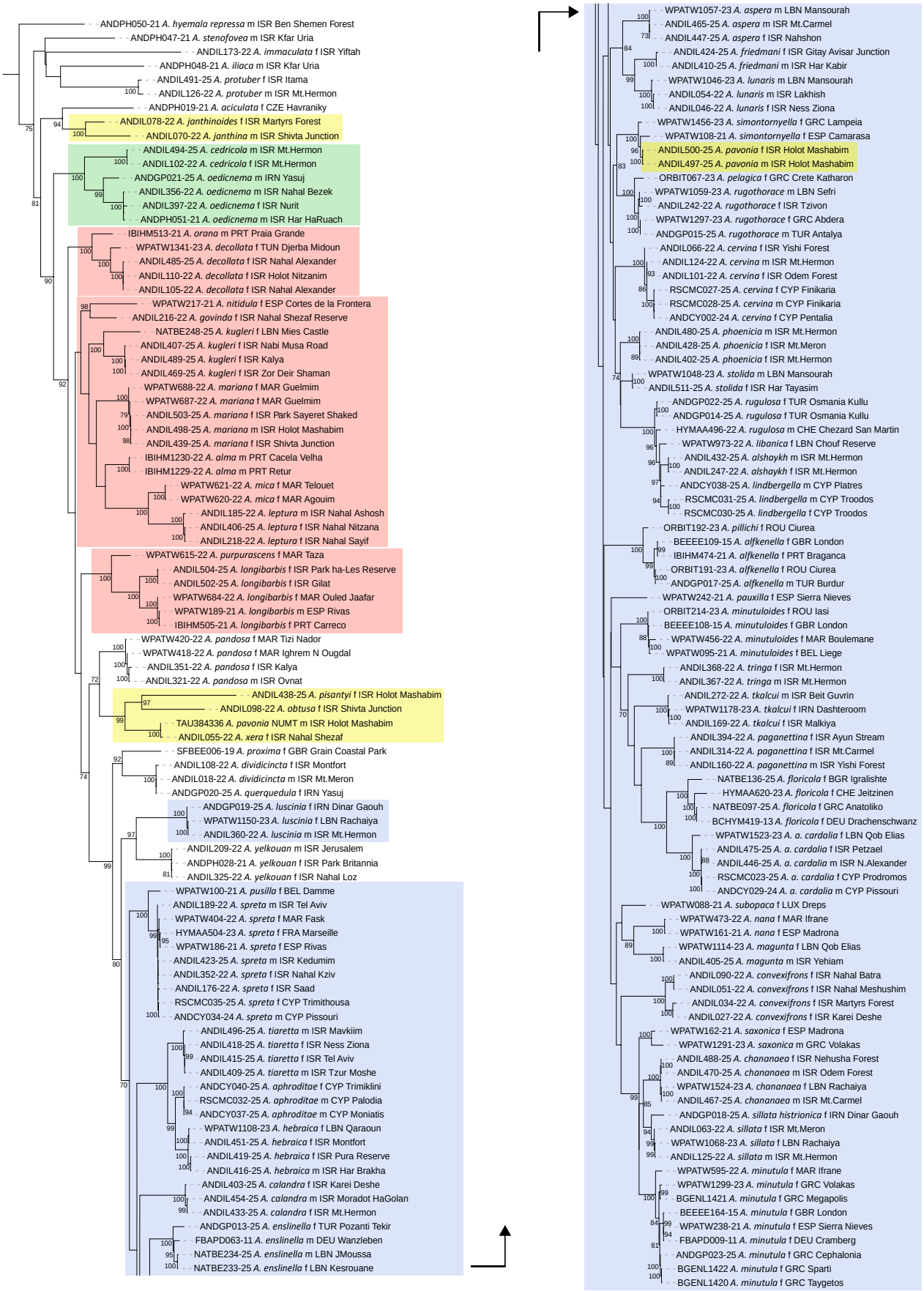

Figure 1. Maximum Likelihood tree of representative COI barcodes of *Andrena* (*Micrandrena*) from the Levant and Cyprus together with some closely related taxa, inferred using IQ-TREE with 1000 ultra-fast bootstraps. Bootstrap values below 70 are not shown. The *janthina*, *longibarbis*, *minutula* and *oedicnema* species groups are shaded in yellow, red, blue and green, respectively. Each sequence is annotated with its BOLD accession number (except for the NUMT sequence), followed by the species name, sex, three-letter country code, and collection locality.

ly extremely close to *A. xera* Pisanty and *A. palmyriae* Wood, both of which clearly fall outside the *A. minutula* group (Fig. 1; Bossert et al. in prep.). Based on the clear results from UCE analysis which are supported by the morphology, we hereby keep the *A. janthina* species group, including *A. pavonia*, out of *Micrandrena*. **3)** We also choose to include in the subgenus a single species for which no barcodes are currently available, *Andrena sulfurea* Wood, based on recent UCE analyses (Bossert et al. in prep.). Judging from the morphology, the subgeneric placement of *A. sulfurea* was considered vague, but closest to *Graecandrena*, which are quite similar to *Micrandrena* (Pisanty et al. 2022b). We regard the morphology of *A. sulfurea* as indeed close enough to be included within the latter subgenus.

Our phylogenetic analysis also broadly concurs with the inner division of subgenus *Micrandrena* found in Pisanty et al. (2022a) as well as newer UCE analyses with broader taxon sampling (Bossert et al. in prep.). For the convenience of the current treatment, we divide the subgenus into three main species groups, which, judged by their morphology, correspond to well-supported clades in phylogenomic analysis: the *Andrena minutula* group, the *A. longibarbis* group, and the *A. oedicnema* group (Fig. 1). Although two of these groups are not monophyletic in our barcode-based analysis, our groups mostly form well-characterized subclades and are not mutually polyphyletic. A few other *Micrandrena* species in our analysis are not assigned to any of these groups, including *A. proxima* (Kirby), which is often assigned its own species group, albeit here represented by a single species only.

At the species level, four taxa exhibited significant intraspecific distances across their geographical ranges in our tree (Fig. 1) but were nevertheless monophyletic and are morphologically more or less uniform, supporting their current species concepts: *Andrena decollata* Warncke (Israel vs. Tunisia, 5%), *A. kugleri* Pisanty **sp. nov.** (West Bank vs. Lebanon, 13%), *A. longibarbis* Pérez (Israel vs. the West Mediterranean, 9%), and *A. oedicnema* Warncke (Iran vs. Israel, 8%; mean within-group distance ≤1% for all taxa mentioned; Fig. 1). Interestingly, some other clades exhibited comparatively short genetic distances even among different species, especially the clade consisting of the *Andrena rugulosa* species complex (*A. alshaykh* **sp. nov.**, *A. libanica* **sp. nov.**, *A. lindbergella* Pittioni and *A. rugulosa* Stöckhert, 3–4% across all species pairs, intraspecific distances 0–2%). Another pair of species, *A. dividicincta* Pisanty and *A. querquedula* Warncke, exhibited 100% sequence identity despite clear morphological differences, a situation known in several other bee species (e.g. Gibbs 2011; Wood 2023b).

In total, 42 species of *Andrena* (*Micrandrena*) are identified from the region of the Levant and Cyprus, 36 of which are represented by molecular barcodes. Thirty-three species are reported from Israel, 24 from Lebanon, 16 from the West Bank, 18 from Syria, 19 from Jordan, and 5 from Cyprus. Nine species are newly described for science, four are new for the region, and six are removed from the regional list. Detailed accounts of all taxa follow, arranged by species groups.

3.1. *Andrena* (*Micrandrena*) Ashmead, 1899

Micrandrena Ashmead, 1899: 89. Type species: *Micrandrena pacifica* Ashmead = *Andrena melanochroa* Cockerell, 1898, by original designation.

Andrenella Hedicke, 1933: 210. Type species: *Melitta minutula* Kirby, 1802, by original designation. Syn. Lanham 1949: 208.

Distandrena Warncke, 1968a: 60. Type species: *Andrena longibarbis* Pérez, 1895, by original designation. Syn. Pisanty et al. 2022a: 12.

Fumandrena Warncke, 1975a: 57. Type species: *Andrena fumida* Pérez, 1895, by original designation. Syn. Pisanty et al. 2022a: 12.

Proxiandrena Schmid-Egger, 2005: 1030. Type species: *Melitta proxima* Kirby, 1802 = *Andrena proxima*, by original designation. Syn. Pisanty et al. 2022a: 12.

Diagnosis. As a unified group, *Andrena* (*Micrandrena*) are too morphologically diverse to diagnose with unique defining characters, especially with regard to other members of the highly diverse clade of small-sized *Andrena* distributed primarily in the Old World (clades 23–24 in Pisanty et al. 2022a), which includes also *Aciandrena*, *Aenandrena*, *Fuscandrena*, *Graecandrena*, *Parandrenella*, and the *A. janthina* species group. All *Micrandrena* are relatively small-sized, and all Palaearctic species lack bright facial markings in both sexes. They generally also lack most of the distinct modifications which characterize many other *Andrena* subgenera, such as elongated mouthparts, enlarged vertex and gena, carinate pronotum, complete propodeal corbicula, sloping profile of propodeum, carinate or toothed hind femur, modified hind tibial spur, plumose scopa, raised area on pygidial plate, or strong male pygidial plate. Beyond these simple generalizations, to provide a clear diagnosis against similar subgenera and species groups, it is necessary to divide *Micrandrena* into several morphological groups and diagnose each one of them separately, as specified below. As reference groups, the following discussion will focus on the related subgenera *Aciandrena* (as presently circumscribed), *Fuscandrena*, *Graecandrena* and the *Andrena janthina* group, which are the main taxa most often confused with *Micrandrena*.

For the sake of the present discussion and for utility within the fauna of the Levant and Cyprus, we divide the Palaearctic members of *A.* (*Micrandrena*) into the following groups, which to our best understanding, correspond to distinct clades in phylogenomic analysis (Pisanty et al. 2022a; Bossert et al. in prep.):

1. *Andrena longibarbis* group – former subgenus *Distandrena*.

2. *Andrena minutula* group – this is the old concept of subgenus *Micrandrena* sensu Warncke in the Palaearctic but excluding the species around *A. oedicnema* Warncke and *A. proxima* (Kirby). This group contains the bulk of the species diversity of the subgenus. It corresponds to Schmid-Egger & Scheuchl's *minutula*- and *nana*-groups combined (Schmid-Egger & Scheuchl 1997). We see no justification to distinguish the *nana* group here, as preliminary molecular data does not support its monophyly, and

the *minutula*/*nana* group division is not clearly applicable outside Central Europe.

3. *Andrena oedicnema* group – *A. oedicnema* Warncke and the closely related *A. cedricola* Wood.

4. Other unassigned, peculiar taxa, including the well-known *Andrena proxima* group, here represented by a single species only.

The ***Andrena longibarbis* group** can be well characterized against other *Andrena* subgenera by the combination of: 1. A clypeus that is completely flat or almost so, often with longitudinal striations (Fig. 13E–I); 2. Supraclypeal plate often longitudinally striated; 3. Facial foveae extremely long and narrow, usually extending below the antennal sockets, with the lower ½–⅔ almost linear (Fig. 13D); 4. Propodeal triangle entirely reticulated, essentially lacking any rugae, even basally (Fig. 13A); 5. Scutum and terga strongly shagreened and impunctate to weakly punctured (Fig. 13J–P); 6. Hind leg pretarsal claw usually bidentate. This species group is most similar to members of subgenus *Aciandrena* and the *A. janthina* species group, but in these reference taxa the clypeus is not always flat, the clypeus and supraclypeal area are never longitudinally striated, the foveae are shorter and more drop-shaped, the body shagreening is usually weaker and finer, and the hind leg pretarsal claw is usually unidentate.

The highly diverse ***Andrena minutula* group** is more variable morphologically compared to the *A. longibarbis* group, but it is characterized most of all by a propodeal triangle that is finely but strongly rugose to rugose-areolate, at least on the basal half (Fig. 13C). Many members of the *A. minutula* group also have strong integumental sculpturing such as deep punctures or strong shagreening (Figs 15–18). Both these traits set this group apart from the related subgenera *Aciandrena*, *Fuscandrena* and *Graecandrena* as well as the *A. janthina* species group. In these reference groups, the propodeal triangle is more reticulated, with the rugosity absent or weaker and more confined to the basal margin; the integumental sculpturing is generally weaker, with punctures and shagreening usually appearing shallower; and in some species the males have yellow facial markings and/or reduced gonostyli, but these are more difficult to generalize. There are exceptions to most of the above criteria, and caution should be exercised when excluding similar subgenera.

Most of **the remaining taxa of *A.* (*Micrandrena*)** in the treatment below can also be diagnosed against other subgenera based on the same criteria mentioned above. Hence, most of the characters of the *Andrena minutula* group apply also to the *A. oedicnema* group and to *A. proxima*; *A. extenuata* Wood also possesses a similar strongly rugose propodeal triangle. The *A. oedicnema* group is further characterized by mirror-smooth, mostly impunctate terga (Fig. 14P), and *A. proxima* possesses an almost unique, star-shaped wrinkling of the surface of the propodeal corbicula (Fig. 14M). The three remaining species are more challenging to diagnose, as their propodeal triangles are more weakly or narrowly rugose, as in *Graecandrena* (Fig. 13B), however all possess unusual characteristics which are rare among the related subgenera: *A. divicincta* Pisanty has very strong tergal hairbands which are strictly limited to the tergal sides (Fig. 14O); *A. pandosa* Warncke has broad facial foveae (Fig. 14K), a protuberant, medially flattened clypeus in which the apicolateral corners are distinctly elevated, and a strongly notched labral process (Fig. 14B); and *A. yelkouan* Warncke has an entirely flat clypeus (Fig. 14A) as well as strongly contrasting dull scutum versus shiny scutellum (Fig. 14G).

It is important to note that several species of the *A. minutula* group occur in two generations which are morphologically distinct. This includes *A. alfkenella* Perkins, *A. alfkenelloides* Warncke, *A. chananaea* Pisanty & Wood **sp. nov.**, *A. minutula*, and *A. minutuloides* Perkins. As a general rule, the second generations possess a smoother cuticle and brighter pubescence (particularly the male facial pubescence), which are most likely adaptations for the warmer ambient temperature and stronger solar radiation associated with late season (Ostwald et al. 2025).

Bionomics. Most of the bionomic data on *Micrandrena* species has been gathered from studying Central European taxa, especially the work of Westrich (1989). Recently, Wood (2023a,b) has conducted pollen analyses on several west Mediterranean species, thus broadening the spectrum of studied taxa. Far less is known about most of the Levantine taxa included in this study, as well as those from the Nearctic and East Palaearctic realms. Altogether, detailed pollen preference data is publicly available for ca. 40 species of *Micrandrena*, showing distinct trends among different species groups within the subgenus. All members of the *Andrena longibarbis* species group appear to exhibit a high affinity for Brassicaceae, and all six species with analysed pollen loads are strict Brassicaceae specialists (Westrich 1989; Dermane et al. 2021; Wood 2023a,b); we assume that similar specialization exists in all other members of this group. By contrast, the *Andrena minutula* group, the most diverse group within the subgenus, exhibits a high proportion (ca. 70%) of pollen generalists, with Brassicaceae and Apiaceae as the most common host plants (Westrich 1989; Scheuchl & Willner 2016; Wood 2023a,b). As expected, voltinism tends to correlate with pollen host breadth within this group, i.e. pollen generalist species have a greater tendency to fly in two generations per year, greatly extending their foraging season (Westrich 1989; Scheuchl & Willner 2016). Other species of *Micrandrena* outside these two groups exhibit diverse pollen preferences, including specialists of Apiaceae, Asteraceae, Cistaceae, Resedaceae and Salicaceae, as well as generalists (Westrich 1989; Larkin et al. 2008; Scheuchl & Willner 2016; Wood & Roberts 2018; Pisanty et al. 2022b; Wood 2023a,b; unpublished data).

In terms of biogeography, the highly diverse *Andrena minutula* group is common in temperate and Mediterranean biomes throughout the Palaearctic, with numerous species confined to higher elevations. The *Andrena oedicnema* group is associated with similar habitats, with a much more limited distribution. On the other hand, the *A. longibarbis* group is strongly associated with dry habitats in the Western Palaearctic, and is most diverse around the southern Mediterranean Basin and the Iberian Peninsula.

3.1.1. *Andrena longibarbis* group

3.1.1.1. *Andrena* (*Micrandrena*) *decollata* Warncke, 1974

Figures 13G, N, 19G

Andrena decollata Warncke, 1974b: 13, 40, ♀♂ [Algeria: OLML].

Distribution and habitat. Coastal habitats along the south Mediterranean. In the Levant, limited to Israel's coastal plain, likely extending into Lebanon (Warncke 1969, as *A. longibarbis* Pérez; Pisanty et al. 2022b).

Flight period. Mid-January to late April.

Flower records. Collected from Brassicaceae (*Brassica*) and Boraginaceae (*Alkanna*).

Material examined. ISRAEL ● 1♂; Binyamina; 26 Jan. 1976; A. Freidberg leg.; SMNHTAU 348576 ● 1♂; Gan Soreq, Giv'at Humra; 31°56'07" N 34°44'35" E; 25 m a.s.l.; 4 Feb. 2020; L. Friedman leg.; SMNHTAU 330935 ● 1♀; Gvulot; 14 Mar. 1987; E. Shney-Dor leg.; SMNHTAU 348575 ● 1♀; Hof Dor–HaBonim N.R. [Nature Reserve]; 32.638–43° N 34.922–8° E; 2 Mar. 2025; L. Friedman leg.; SMNHTAU ● 2♂; Hof Rosh Haniqra N.R.; 33.076–85° N 35.105–9° E; 18 Mar. 2025; G. Pisanty leg.; SMNHTAU 465053, 465054 ● 1♀; Hof Rosh Haniqra N.R., nr. Hof Bezet; 18 Mar. 2025; L. Friedman leg.; SMNHTAU 464993 ● 1♂; Hulon; 18 Jan. 1954; L. Fishelsohn leg.; SMNHTAU 348577 ● 1♀; Mikve-Jisrael B G [Botanical Garden]; 15 Mar. 1946; SMNHTAU 348588 ● 1♀; Nahal Alexander; 27 Feb. 2020; K. Levy leg.; BOLD accession no. ANDIL485-25; SMNHTAU 337969 ● 1♀; ibid.; BOLD accession no. ANDIL105-22; SMNHTAU 337967 ● 1♀; ibid.; 29 Mar. 2021; on *Brassica tournefortii*; SMNHTAU 380253 ● 1♀; ibid.; 3 Apr. 2021; SMNHTAU 379996 ● 1♀; Nahal Alexander NP [National Park]; 32.3955° N 34.8755° E; 25 Feb. 2024; G. Pisanty leg.; SMNHTAU 448453 ● 6♂; ibid.; SMNHTAU 448449 to 448452, 448454, 448455 ● 1♂; Netanya, Irus Ha'Argaman NR; 24 Feb. 2021; ITI Bee Course leg.; SMNHTAU ● 1♀; Nir Eliyahu; 14 Apr. 2023; S. Asis leg.; SMNHTAU 414787 ● 3♂; Nizzanim, D6; 17 Feb. 2005; A. Freidberg leg.; SMNHTAU ● 1♀; Nizzanim Nature Reserve; 25 Feb. 2009; L. Friedman leg.; BOLD accession no. ANDIL110-22; SMNHTAU 348583 ● 2♂; ibid.; SMNHTAU 348581, 348582 ● 1♂; Nizzanim Nature Reserve, Nahal Evtah; 25 Feb. 2009; A. Freidberg leg.; SMNHTAU 348580 ● 2♂; Or 'Aqiva, 1km E; 32.493° N 34.934° E; 33 m a.s.l.; 2 Mar. 2025; G. Pisanty leg.; SMNHTAU 464087, 464088 ● 2♂; ibid.; L. Friedman leg.; SMNHTAU 464107, 464108 ● 1♀; Qadima; 25 Mar. 2009; A. Dorchin leg.; SMNHTAU ● 1♀; R.Gn [?Ramat Gan]; 3 Feb. [19]40; SMNHTAU 348586 ● 1♀; ibid.; 6 Feb. [19]40; SMNHTAU 348587 ● 3♀; Rehobot [Rehovot]; 9 Feb. 1942; H. Bytinski-Salz leg.; SMNHTAU 348589 to 348591 ● 3♀; Rehoboth; [??] Feb. [19]34; Hecht leg.; SMNHTAU 348593 to 348595 ● 1♂; ibid.; SMNHTAU 348592 ● 1♂; Sde Uziyahu; 31.753° N 34.667° E; 13 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462968 ● 1♂; T.A.g [?Tel Aviv Botanical Garden]; 4 Feb. [19]40; SMNHTAU ● 1♀; Tel Aviv; 17 Mar. 1940; H. Bytinski-Salz leg.; SMNHTAU 348584 ● 1♂; ibid.; [??] Mar. 1940; SMNHTAU 348585 ● 2♀; Tel Aviv, Ramat Aviv; 32.130° N 34.801° E; 9 Feb. 2015; G. Pisanty leg.; pan trap; SMNHTAU 203163, 203164 ● 2♂; ibid.; SMNHTAU 203161, 203162 ● 1♂; ibid.; 1 Apr. 2017; on Brassicaceae; SMNHTAU 270430 ● 1♂; Zur Moshe; 27 Apr. 2015; I. Eliakim leg.; SMNHTAU 185879. – **TUNISIA** ● 1♀; Djerba Midoun [2 km S of Sedouikech, Mosquée el louttaa Souterraine de Sedouikech]; 26 Feb. 2023; N.J. Vereecken leg.; BOLD accession no. WPATW1341-23; TJWC.

3.1.1.2. *Andrena* (*Micrandrena*) *govinda* Warncke, 1974

Figures 13J, K, 19I

Andrena govinda Warncke, 1974b: 14, 41, ♀♂ [Egypt: OLML].
Andrena govinda ssp. *eremitica* Warncke, 1974b: 14, 41, ♀♂ [Tunisia: OLML].

Distribution and habitat. Desert habitats in north Africa and the Levant (southern Israel, Jordan*, Syria*, Pisanty et al. 2018).

Flight period. Early February to late April.

Flower records. Collected from Brassicaceae (*Diplotaxis*, *Erucaria*, *Zilla*) and Nitrariaceae (*Nitraria*).

Material examined. HOLOTYPE: EGYPT ● ♀; Wadi Digla; 12 Feb. 1932; H. Priesner leg.; OLML. – **non-type material: ISRAEL** ● 1♀; Arava, 4 km W of Hazeva; 19–29 Feb. 1988; R. Leys leg.; RMNH ZMA.INS.5104494 ● 1♀; ibid.; TJWC ● 1♂; ibid.; 27 Feb. 1990; RMNH ZMA.INS.5102911 ● 3♂; Hazeva; 11 Feb. 2009; A. Gotlieb leg.; SMNHTAU 27073, 27074, 27080 ● 1♂; ibid.; 12 Feb. 2010; on *Zilla spinosa*; SMNHTAU 33212 ● 1♀; Iddan; 15 Feb. 2009; A. Gotlieb leg.; SMNHTAU 27098 ● 1♂; ibid.; SMNHTAU 27129 ● 1♀; ibid.; 11 Mar. 2009; SMNHTAU 27332 ● 1♂; ibid.; 9 Feb. 2010; on *Erucaria rostrata*; SMNHTAU 33170 ● 1♀; ibid.; 6 Mar. 2010; on *Zilla spinosa*; SMNHTAU 57616 ● 1♀; Nahal Shahaq, Shezaf Nat.[ure]Res.[erve]; 30°44.26' N 35°14.58' E; –120 m a.s.l.; 2 Mar. 1997; O. Niehuis leg.; SMNHTAU ● 1♀; ibid.; 4 Mar. 1997 ● 1♂; ibid.; 30°45.10' N 35°15.35' E; 20 Feb. 1997 ● 1♂; ibid.; 30°45.99' N 35°15.94' E ● 1♀; Nahal Shezaf; 9 Feb. 2021; A. Dorchin leg.; SMNHTAU 358594 ● 1♀; Nahal Shezaf; 30.722° N 35.270° E; 13 Feb. 2016; G. Pisanty leg.; on Brassicaceae; SMNHTAU 234061 ● 1♀; ibid.; BOLD accession no. ANDIL216-22; SMNHTAU 234060 ● 1♀; ibid.; 14 Feb. 2016; SMNHTAU 234068 ● 1♀; Nahal Shezaf, 2 km N 'En Yahav; –140 m a.s.l.; 6 Mar. 2013; A. Dorchin leg.; TJWC ● 1♀; Nahal Zin; 17 Mar. 2009; H. Carmely leg.; SMNHTAU 30923 ● 2♀; Negev, 2 km E Yeroham; 21 Mar. 1990; R. Leys leg.; RMNH ZMA.INS.5102746. – **JORDAN** ● 1♀; Rawayshid [Ruwaished]; 23 Apr. 1996; Ma. Halada leg.; OLML ● 1♂; Wadi Rum; 900 m a.s.l.; 17 Mar. 1988; L. Blank leg.; TJWC. – **SYRIA** ● 1♀; asr al-Hiras-Sharqi, Dayr Az-Zor; 250 m a.s.l.; 23 Mar. 1988; L. Blank leg.; OLML ● 1♀; 30 km W Palmyra; 580 m a.s.l.; 23 Apr. 1992; K. Warncke leg.; OLML.

3.1.1.3. *Andrena* (*Micrandrena*) *herodesi* Pisanty & Wood, 2022

Figures 13H, O

Andrena herodesi Pisanty & Wood, 2022: Pisanty et al. 2022b: 51–52, ♀ [West Bank: SMNHTAU].

Distribution and habitat. Endemic to arid habitats in the southern Levant (southern Israel, West Bank, Jordan).

Flight period. March.

Flower records. None.

Remarks. Male unknown.

Material examined. HOLOTYPE: WEST BANK ● ♀; **"**ISRAEL, Herodyon" [Herodium]; 31°40' N 35°14' E; 31 Mar. 2009; M. Guershon leg.; SMNHTAU 348536. – **PARATYPES: ISRAEL** ● 2♀; Sede Boqer; 21 Mar. 1985; I. Yarom leg.; SMNHTAU 207231, 348532. – **JORDAN** ● 1♀; Wadi-el-Mawjib; 400 m a.s.l.;, 20 Mar. 2009; V. Barták leg.; OLML. – **WEST BANK** ● 1♀; Herodyon; 31°40' N 35°14' E; 31 Mar. 2009; M. Guershon leg.; OLML ● 4♀; ibid.; SMNHTAU 207232, 348533, 348534, 348537.

3.1.1.4. *Andrena* (*Micrandrena*) *kugleri* Pisanty sp. nov.

https://zoobank.org/4B0555F0-8FF3-4B7C-B5BF-5035CF5-AF7BF

Figures 2, 13F, 19L

Etymology. Named after the Israeli entomologist Jehoshua Kugler (1916–2007).

Diagnosis. Within the *Andrena longibarbis* species group, *A. kugleri* belongs to the species around *A. mariana* Warncke, which are characterized by a largely non-rugose clypeus. Among these species, *A. kugleri* can be diagnosed by the combination of the relatively narrow female labral process (Fig. 13F; broader in *A. abjecta* Pérez, *A. leptura* Warncke **stat. nov.** and *A. mica* Warncke), the flat, apically smooth, non-rugose clypeus (Figs 2B, F, 13F; weakly domed in *A. abjecta*, *A. mariana* and *A. tenostra* Warncke, more extensively shagreened in *A. obsoleta* Pérez and male *A. mica*, less so in *A. rubecula* Warncke, basally rugose in *A. leptura* and *A. mica*), reddish-brown flagellum (Fig. 2; more orange-lightened in *A. govinda* Warncke, *A. mariana* and female *A. rubecula*, dark in male *A. alma* Warncke), male flagellomere proportions (Fig. 2F; flagellomere 1 longer in *A. obsoleta*), normally developed male gena (broadened in *A. alma* and *A. rubecula*), weak pronotal angle (stronger in *A. rubecula* and male *A. alma*), dull scutellum (Fig. 2C, G; shinier in *A. govinda*, *A. rubecula* and *A. tenostra*), impunctate tergal discs (punctate in female *A. alma*), reddish-brown tergal marginal zones (Fig. 2D, H; distinctly orange in *A. mariana*, somewhat more orange-lightened in female *A. rubecula*), relatively narrow tergal hair bands (Fig. 2D, H; broader in *A. govinda*), and relatively narrow penis valves (Fig. 19L; broader in *A. alma* and *A. leptura*).

Description. FEMALE. ***Body length:*** 6–7 mm. — ***Integumental colour:*** Body black. Flagellum brown anteriorly, occasionally with weak reddish hue. Legs black to brown. Wings hyaline, veins and stigma golden (Fig. 2A). Tergal marginal zones reddish-yellow basally, yellow to whitish apically (Fig. 2D). — ***Pubescence:*** Body hair relatively sparse, mostly minutely plumose, white (Fig. 2A). Face and genal area with short to medium white hair, densest on paraocular area and scape. Facial fovea with dense, minute whitish hair. Vertex with long erect white hair (Fig. 2B, C). Dorsal mesosomal surfaces with sparse erect white hair, short on scutum, longer on scutellum and metanotum (Fig. 2C). Mesepisternum with moderately dense, long white hair (Fig. 2A). Propodeal corbicula incomplete, dorsoposterior fringe composed of long, plumose white hairs. Corbicular surface with sparse, simple long white hairs. Leg hair white (Fig. 2A). Flocculus incomplete. Femoral and tibial scopae well-developed, femoral scopa composed of moderately long, curved plumose hairs dorsally and straight long hairs ventrally, tibial scopa composed of simple hairs (Fig. 2A). Tergal discs 1–2 hairless centrally, with sparse inconspicuous short white hair laterally. Tergal discs 3–4 entirely with sparse, inconspicuous minute white hair, slightly longer laterally. Tergal marginal zones 2–4 with distinct narrow bands of dense white hair, strongly interrupted on tergum 2, almost continuous on 3, continuous on 4. Terminal fringe whitish-golden (Fig. 2D). — ***Head:*** 1.2 times broader than long. Mandibles bidentate, moderately crossed (Fig. 2B). Galea finely shagreened. Labral process small, subquadrate, as long as broad or longer. Clypeus entirely flat to minutely domed, smooth apically and finely shagreened basally, lacking striations, punctation distinct, distance between punctures 1–2 puncture diameters, an impunctate midline is absent or very weakly indicated (Figs 2B, 13F). Paraocular and supraclypeal areas and frons finely longitudinally striated, punctation absent except on lower paraocular area (Fig. 2B). Facial fovea extremely narrow and linear in lower half, broader in upper ⅓–½, here about ⅓ as broad as antennocular distance, fovea extending from level of middle–lower end of lateral ocellus to lower end of antennal socket, separated from compound eye by very narrow strip of smooth cuticle. Flagellomere 1 as long as 2+3, 2 slightly shorter than 3 (Fig. 2B). Distance of fovea from lateral ocellus 1.8 ocellus diameters. Vertex distinctly carinate. Ocelloccipital distance equals 0.7 ocellus diameter (Fig. 2C). — ***Mesosoma:*** Dorsolateral angle of pronotum weakly developed. Scutum and scutellum entirely shagreened and dull, scutum with extremely shallow, hardly discernible punctation, distance between punctures 1–2 puncture diameters (Fig. 2C). Mesepisternum and propodeum finely reticulated. Base of propodeal triangle more coarsely reticulated than apical part and flanking propodeal regions, occasionally slightly rugose-areolate at basal margin (Fig. 2C). Hind pretarsal claw with small inner tooth. Recurrent vein 1 meeting submarginal cell 2 near its middle. Nervulus usually strongly antefurcal, rarely weakly antefurcal to interstitial (Fig. 2A). — ***Metasoma:*** Tergal discs strongly, finely shagreened, impunctate. Tergal marginal zones weakly depressed, weakly broadening medially, shagreened basally and smooth apically, impunctate (Fig.

Figure 2. *Andrena kugleri* Pisanty **sp. nov. A** Female habitus; **B** female head; **C** female vertex and mesosoma; **D** female metasoma; **E** male habitus; **F** male head; **G** male vertex and mesosoma; **H** male metasoma.

2D). Pygidial plate with distinctly elevated central zone. — **MALE.** ***Body length:*** 5.5–7 mm. — ***Integumental colour:*** As in female (Fig. 2E). — ***Pubescence:*** Body hair longer and denser than in female, mostly minutely plumose, white (Fig. 2E). Face, vertex and gena with moderately dense, long white hairs. A few short dark hairs occur near centre of inner margin of compound eye (Fig. 2F). Dorsal mesosomal surfaces with long erect

white hair, densest on metanotum and scutellum, sparse on scutal disc (Fig. 2E, G). Mesepisternum with moderately dense, very long white hairs. Propodeum with long white hairs. Leg hair white to yellowish (Fig. 2E). Tergal discs with short to minute inconspicuous bright hair, longer laterally and on base of tergum 1. Tergal marginal zones 2–4 with weak narrow bands of white hair, strongly interrupted on terga 2–3, more weakly so on 4. Terminal fringe whitish-golden (Fig. 2H). — ***Head:*** Labral process quadrate, apical margin concave to blunt-ended. Clypeus entirely flat, apical ⅔ extremely smooth. Flagellomere 1 about 1.2 times as long as 3, 3 distinctly longer than 2 (Fig. 2F). Ocelloccipital distance about 1 ocellus diameter (Fig. 2G). Genal area 0.95–1.05 times as broad as compound eye. Rest of head as in female. — ***Mesosoma:*** As in female (Fig. 2G). — ***Metasoma:*** As in female (Fig. 2H). — ***Genitalia and hidden sterna:*** Dorsal gonocoxite lobes developed, converging apically, pointed. Gonostyli finger-shaped, elongate, weakly broadening apically, inner margin with very small concavity in mid-length. Penis valves moderately broad basally, basal ⅔ gradually tapering apically (Fig. 19L). Sternum 8 simple, columnar, narrow, apical process broadened, apical margin often weakly emarginate.

Distribution and habitat. In a broad sense, *Andrena kugleri* is endemic to Israel, the West Bank and southern Lebanon. The principal distribution is in desert areas of southern Israel and the West Bank, while the species is absent from most of the Mediterranean region of Israel. However, a disjunct population exists on both sides of the Israeli-Lebanese border, where annual precipitation exceeds 600 mm. This population is known only from females, and the single available barcode (from Lebanon) is 13% different from the main population. Males should be located and examined to conclude whether this population represents a separate taxon. The species is also known from only two localities in the central coastal plain, one of these is the old botanical garden in southern Tel Aviv, where a great proportion of the type material has originated. A single specimen with a label from Turkey in Warncke's handwriting is of dubious origin, as noted by Warncke himself. More DNA barcoding is needed to better assess the uniformity of this taxon across its range.

Flight period. Mid-February to mid-April, up to early May in southern Lebanon.

Flower records. Collected from Brassicaceae (*Erucaria*, *Sisymbrium*, etc.) and Asparagaceae (*Scilla*).

Remarks. In his collection, Warncke labeled this taxon *A. mariana progressa* Warncke, an unpublished name which adds to his multiple subspecific concepts of *A. mariana*, all of which are now considered distinct species or junior synonyms of other distinct species (Wood 2023a and the present work). See also *A. leptura* **stat. nov.**

Andrena kugleri is very similar to *A. rubecula* known from nearby Egypt, and female specimens collected near the southernmost part of the Israeli-Egyptian border (previously classified as *A. rubecula*, Pisanty et al. 2022b) appear to show intermediate characters between the two species and cannot be confidently assigned to either taxon at this stage. Differences from *A. rubecula* are most apparent in males, which have a shorter, less developed mandible, brighter facial hair (Fig. 2F), clypeus which is shagreened near the base (almost completely smooth in *A. rubecula*), narrower genal area (broader than the compound eye in *A. rubecula*), weaker pronotal angle, scutellum which is fully shagreened and dull (Fig. 2G; smooth and shiny in *A. rubecula*), and slightly larger genitalia (Fig. 19L). Females are harder to differentiate, but they exhibit similar, albeit weaker differences in the pronotum and scutellum, as well as a smoother clypeus, and a generally darker integument, especially in the flagellum, legs and tergal marginal zones.

Type material. HOLOTYPE: WEST BANK ● 1♀; "ISRAEL, Jericho" [Jericho]; [approx. 31.86° N 35.46° E]; [approx. –250 m a.s.l.]; 13 Feb. 1975; F. Kaplan leg.; SMNHTAU 373036. – **PARATYPES: ISRAEL** ● 1♀; Avedat; 13 Apr. 1990; Kl. Warncke leg.; OLML ● 1♂; Holon; 27 Feb. 1973; H. Bytinski-Salz leg.; "*Andrena mariana* ssp. *progressa*" paratype label; SMNHTAU ● 1♂; Ramon – HaMeshar; 25 Mar. 1993; A. Freidberg leg.; SMNHTAU 367688 ● 3♀; Rekhes Ha-Sullam; 33.091° N 35.112° E; 80 m a.s.l.; 18 Mar. 2025; G. Pisanty leg.; SMNHTAU 465065, 465066, 465068 ● 1♀; ibid.; RMNH ● 1♀; Sede Boqer; 21 Mar. 1985; I. Yarom leg.; SMNHTAU 373037 ● 1♀; Sedé Boqer; 17 Mar. 1999; L. Friedman leg.; SMNHTAU ● 1♂; Tel Aviv; 8 Mar. 1974; H. Bytinski-Salz leg.; SMNHTAU ● 2♀, 20♂; ibid.; 17 Mar. 1970; "*Andrena mariana* ssp. *progressa*" paratype label ● 2♂; ibid.; RMNH ● 1♂; ibid.; 20 Mar. 1972 ● 2♀; Tel-Aviv; 32.045–8° N 34.769–73° E; 25 Mar. 2025; G. Pisanty leg.; on Brassicaceae; SMNHTAU 465529, 465531 ● 1♀; ibid.; RMNH ● 3♀; ibid.; 32.045–50° N 34.769–73° E; 5 Apr. 2025; SMNHTAU 466827, 466828, 466844 ● 2♂; Tel Aviv BG [Botanical Garden]; 27 Mar. 1969; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; ibid.; "*Andrena mariana* ssp. *progressa*" paratype label; OLML ● 1♂; ibid.; 1 Mar. 1972; SMNHTAU ● 1♂; ibid.; 10 Mar. 1972; OLML ● 1♂; ibid.; 20 Mar. 1972 ● 1♂; ibid.; 9 Mar. 1973; SMNHTAU ● 1♂; Wadi Raman [Nahal Ramon]; 22 Mar. 1958; Yarkoni leg.; Trias; "*Andrena mariana* ssp. *progressa*" paratype label; SMNHTAU ● 1♂; Zomet haEla [HaEla Junction]; 12 Apr. 2009; L. Friedman leg.; SMNHTAU ● 1♀; גינה בוטנית [botanical garden – most likely in Abu Kabir, Tel Aviv]; 16 Mar. 1961; on *Scilla hyacinthoides*; SMNHTAU ● 1♂; ibid.; 3 Mar. 1962 ● 1♂; ibid.; 4 Mar. 1962. – **LEBANON** ● 1♀; Nabatiyeh Gov., Mies Castle; 300 m a.s.l.; 9 May. 2023; V. Soon leg.; BOLD accession no. NATBE248-25; TUZ 347262. – **TURKEY** [?] ● 1♂; Büyükdere, Istanbul; 8 Apr. [19]72; labeled "Fundort sicher falsch. Israel!"; SMNHTAU. – **WEST BANK** ● 1♂; Har-Gilo, 5km SW Jerusalem; 850 m a.s.l.; 14 Apr. 1990; R. Kasher leg.; 10min sweeping; SMNHTAU ● 1♀; Nabi Musa Road; 22 Feb. 2014; A. Gotlieb leg.; on *Sisymbrium irio*; BOLD accession no. ANDIL407-25; SMNHTAU 184211 ● 1♀; ibid.; on *Erucaria rostrata*; SMNHTAU 184266 ● 1♂; ibid.; SMNHTAU 184309 ● 1♂; Nahal Qidron, Avenat, Rt. 90; 2 Mar. 2010; M. Guershon leg.; SMNHTAU 53130 ● 1♀; Qalya; 31.75° N 35.462° E; 2 Mar. 2021; G. Pisanty leg.; BOLD accession no. ANDIL489-25; SMNHTAU 357552 ● 1♀; Zor Deir Shaman, Yarden [Jordan River] bank; 32°02'30" N 35°30' E; 15 Mar. 2005; L. Friedman leg.; SMNHTAU 367557 ● 1♀; ibid.; BOLD accession no. ANDIL469-25; SMNHTAU 331517.

Other material examined. (*A. rubecula* Warncke): HOLOTYPE: EGYPT ● ♀; Meadi [Maadi]; 20 Feb. 1931; H. Priesner leg.; OLML. – **PARATYPES: EGYPT** ● 1♀; Heluan; "3.98"; OLML ● 2♀; Wadi Digla; 13 Mar. 1931; Dr. H. Priesner leg.; OLML ● 1♀; ibid.; 15 Mar. 1931 ● 1♂; ibid.; 12 Feb. 1932. – **non-type material: EGYPT** ● 1♀; Ain Sokhna rd, 50–85 km E of Maadi; 4 Apr. 1992; C.G. Roche leg.; OUMNH ● 1♂; W.[adi]Hof; Mar. 1958; Dr. H. Priesner leg.; OLML ● 2♀; Wadi Digla; 27 Mar. 1987; C.G. Roche leg.; OUMNH ● 1♀; ibid.; 4 Mar. 1989 ● 6♀,2♂; ibid.; 8 Mar. 1990 ● 2♀; ibid.; 9 Mar. 1990 ● 6♀,1♂; ibid.; 15 Mar. 1990. – **(*A. ?kugleri*/*rubecula*): EGYPT** ● 2♀; "Israel, Taba" [Taba]; 19 Mar. 1988; Y. Zvik leg.; SMNHTAU. – **ISRAEL** ● 1♀; Nahal Betamim, 23.8 km NEN Eilat; 29°46'19" N 34°52'08" E; 693 m a.s.l.; 7 Mar. 2013; A. Dorchin leg.; SMNHTAU.

3.1.1.5. *Andrena* (*Micrandrena*) *leptura* Warncke, 1974 stat. nov.

Figures. 13D, E, M, 19J

Andrena mariana ssp. *leptura* Warncke, 1974b: 13, 40, ♀♂ [Egypt: OLML].

Distribution and habitat. Desert habitats in the southeast Mediterranean. Newly reported from the Levant*, in southern Israel*.

Flight period. Mid-January to mid-April.

Flower records. Collected from Brassicaceae (*Diplotaxis*, *Zilla*).

Remarks. Molecular barcodes strongly suggest that this taxon is distinct (Fig. 1), and we hereby elevate it to species status. All subspecies of *Andrena mariana* erected by Warncke are now considered distinct at the species level (Wood 2023a and the present work). See *Andrena kugleri* **sp. nov.** for a discussion of morphological differences among members of this group.

Material examined. ISRAEL ● 2♀,1♂; Arava, 4 km W of Hazeva; 19–29 Feb. 1988; R. Leys leg.; RMNH ● 1♀; ibid.; TJWC ● 1♀; Gerofit; 11 Mar. 1974; D. Furth leg.; SMNHTAU ● 1♀; Hazeva; 8 Feb. 2009; A. Gotlieb leg.; SMNHTAU 27043 ● 1♂; ibid.; 11 Feb. 2009; SMNHTAU 27078 ● 1♀; ibid.; 10 Mar. 2009; SMNHTAU 27290 ● 1♂; ibid.; SMNHTAU 27287 ● 1♂; ibid.; 13 Feb. 2010; on *Zilla spinosa*; SMNHTAU 57444 ● 3♀; Hazeva Field School; 30°43' N 35°15' E; 12 Mar. 1998; E. Askenazi leg.; Malaise trap; SMNHTAU ● 1♀; Iddan; 12 Mar. 2009; A. Gotlieb leg.; SMNHTAU 27440 ● 1♀; Makhtésh Ramon; 6 Apr. 1997; L. Friedman leg.; SMNHTAU ● 1♂; Nahal 'Ashosh, Rt.90; 30°31.2' N 35°10.9' E; 22 m a.s.l.; 17 Feb. 2015; A. Freidberg leg.; BOLD accession no. ANDIL185-22; SMNHTAU 205081 ● 1♀; Nahal Gidron, 2.5 Km W Arava Hwy(90); 9 Mar. 1998; E. Ashkenazi leg.; SMNHTAU ● 1♀; Nahal Nemiyya, Rt.90; 30°40.5' N 35°13.1' E; –62 m a.s.l.; 8 Mar. 2010; A. Freidberg leg.; SMNHTAU 48066 ● 2♀; Nahal Sayif; 30.855° N 35.260° E; 13 Feb. 2016; G. Pisanty leg.; on Brassicaceae; SMNHTAU 234090, 234091 ● 1♀; ibid.; BOLD accession no. ANDIL218-22; SMNHTAU 234093 ● 4♂; ibid.; SMNHTAU 234094 to 234097 ● 1♀; Nahal Shahaq; 30°48' N 35°14' E; 22 Mar. 1998; E. Ashkenazi leg.; Malaise trap; SMNHTAU ● 1♀; Nahal Shahaq, Shezaf Nat. Res.; 30°44.83'N 35°15.10' E; 9 Mar. 1997; O. Niehuis leg.; SMNHTAU ● 8♀,3♂; ibid.; 10 Mar. 1997 ● 2♀; ibid.; 30°44.16'N 35°14.51' E; 10 Mar. 1997; Malaise trap ● 1♀,2♂; Nahal Shahaq, Shezaf Nat. Res.; 30°45.08'N 35°15.33' E; –120 m a.s.l.; 19 Feb. 1997; O. Niehuis leg.; SMNHTAU ● 2♀,4♂; ibid.; 30°45.39'N 35°15.58' E; 27 Feb. 1997 ● 1♀,5♂; ibid.; 30°44.26'N 35°14.58' E; 2 Mar. 1997 ● 13♀,6♂; ibid.; 4 Mar. 1997 ● 5♀; ibid.; I. Yarom leg. ● 3♀; Nahal Shezaf; 30.722° N 35.270° E; 14 Feb. 2016; G. Pisanty leg.; on Brassicaceae; SMNHTAU 234071 to 234073; ● 1♂; ibid.; SMNHTAU 234070 ● 1♀; Nahal Shezaf NR; –134 m a.s.l.; 30 Mar. 2011; A. Dorchin leg.; TJWC ● 1♀; NahalNizzana, Rt.171; 750 m a.s.l.; 2 Apr. 2014; A. Freidberg leg.; SMNHTAU 178619 ● 1♂; Ramon; 10 Mar. 1974; D. Furth leg.; SMNHTAU ● 2♀; Ramon Rd.; 11 Mar. 1974; D. Furth leg.; SMNHTAU ● 1♂; Shizzafon; 30.0435° N 35.023° E; 27 Feb. 2015; G. Pisanty leg.; SMNHTAU 205469 ● 2♀; Wadi Segur, 40 km NW Eilat; 17 Apr. 1990; Warncke leg.; OLML ● 1♀; Yotvata (Hay Bar) Nature Reserve; 27 Feb. 2015; G. Pisanty leg.; on Brassicaceae; SMNHTAU 205518 ● 1♀; Zofar; 12 Mar. 2009; H. Carmely leg.; SMNHTAU 27883 ● 1♀; Zofar; 13 Mar. 2009; G. Pisanty leg.; on *Zilla spinosa*; SMNHTAU 27800.

3.1.1.6. *Andrena* (*Micrandrena*) *longibarbis* Pérez, 1895

Figures. 13A, I, P, 19E, H

Andrena longibarbis Pérez, 1895: 45, ♀♂ [Tunisia: MNHN].
Andrena trizona Pérez, 1895: 45, ♀ [SE Algeria: ?MNHN].

Distribution and habitat. Shrublands, warm grasslands, and semi-deserts in the southern Mediterranean and the Iberian Peninsula. In the Levant, limited to southern Israel and the West Bank* (Pisanty et al. 2018).

Flight period. February to mid-April; in Iberia up to mid-May (Álvarez Fidalgo et al. 2022; Gaspar et al. 2023).

Flower preferences. Broadly oligolectic on Brassicaceae (Wood 2023a), with records on *Diplotaxis* and *Sinapis* (Álvarez Fidalgo et al. 2022; Wood et al. 2022).

Material examined. EGYPT ● 1♀; Alexandria, Montaza; 11 Apr. 1983; K.M. Guichard leg.; NHMUK. – **ISRAEL** ● 1♀; Gilat Forest; 31.341° N 34.654° E; 1 Mar. 2023; G. Pisanty leg.; sweep; SMNHTAU 422807 ● 1♀; Gilat Research Center, fallow field; 31.3372° N 34.663° E; 2 Mar. 2022; G. Pisanty leg.; sweeping; BOLD accession no. ANDIL502-25; SMNHTAU 385022 ● 1♀; KKL Park Sayeret Shaqed; 31.2798° N 34.6498° E; 19 Mar. 2022; G. Pisanty leg.; pan trap; SMNHTAU 386106 ● 1♂; Lakhish, 3km NE; 31.578° N 34.870° E; 19 Feb. 2016; G. Pisanty leg.; SMNHTAU 234227 ● 1♀; ibid.; 31.579° N 34.871° E; 4 Mar. 2016; pan trap; SMNHTAU 235215 ● 1♀; Negev, 2 km E Yeroham; 21 Mar. 1990; R. Leys leg.; RMNH ZMA. INS.5104401 ● 1♀; Park ha-Les NR; 31.2575° N 34.5965° E; 19 Mar. 2022; G. Pisanty leg.; pan trap; BOLD accession no. ANDIL504-25; SMNHTAU 386086. – **MOROCCO** ● 1♀; Souss-Massa, N10, 20 km E Taroudant, Ouled Jaafar; 30.5506° N –8.6535° W; 11 Mar. 2022; T. Wood leg.; BOLD accession no. WPATW684-22; TJWC. – **PORTUGAL** ● 1♀; Carreço, Praia de Fornelos; 41.7457° N –8.8755° W; 17

May 2019; T. Wood leg.; BOLD accession no. IBIHM505-21; TJWC ● 1♂; Nazaré, south, Rio Alcobaca floodplain; 39.5713° N –9.0801° W; 22 Mar. 2019; T. Wood leg.; BOLD accession no. IBIHM504-21; TJWC. – **SPAIN** ● 1♀; Prov. Murcia, 20 km S Murcia, Balsicas, Urban, Los Molinos; 16 Mar. 2007; E. Scheuchl leg.; on Brassicaceae; BOLD accession no. ANDGP024-25; SMNHTAU 402778 ● 1♂; Prov. Murcia, 40 km SO Murcia, San Javier, Ödland; 26 Mar. 2005; E. Scheuchl leg.; BOLD accession no. ANDGP025-25; SMNHTAU 402779 ● 1♂; Rivas-Vaciamadrid, Canal de Manzanares to Camino de Uclés; 40.3217° N –3.5633° W; 19 May 2021; T. Wood leg.; BOLD accession no. WPATW189-21 ● 1♀; Seseña Nuevo, Arroyo del Valle Grande; 40.1155° N –3.6293° W; 31 May 2021; T. Wood leg.; BOLD accession no. WPATW147-21. – **WEST BANK** ● 2♀,8♂; Wadi Kelt; –200 m a.s.l.; 6 Mar. 1975; K.M. Guichard leg.; NHMUK ● 1♀; Wadi Malha Wetland N.R.; –295 m a.s.l.; 12 Feb. 2018; L. Friedman leg.; SMNHTAU 284986.

3.1.1.7. *Andrena* (*Micrandrena*) *mariana* Warncke, 1968 sensu stricto

Figures. 13L, 19K

Andrena mariana Warncke, 1968b: 75, ♀♂ [Canary Islands: OLML].

Distribution and habitat. South Mediterranean (Wood 2023a). Newly recorded from the Levant* (Israel*, Jordan*). Previous accounts from the Levant (Warncke 1969) refer to *Andrena kugleri* **sp. nov.**

Flight period. Mid-February to late April.

Flower records. Collected from Brassicaceae.

Remarks. See *A. leptura* **stat. nov.** and *A. kugleri* **sp. nov.**

Material examined. ISRAEL ● 1♀,1♂; 10 km W Dimona; 403 m a.s.l.; 20 Mar. 2012; A. Dorchin leg.; TJWC ● 2♀; Holot Mash'abbim; 30.999° N 34.7575° E; 13 Feb. 2022; L. Friedman leg.; SMNHTAU 384379, 384380 ● 2♂; ibid.; SMNHTAU 384376, 384385 ● 1♂; ibid.; 30.999° N 34.7578° E; G. Pisanty leg.; sweeping; SMNHTAU 384335 ● 2♀; ibid.; 18 Feb. 2022; SMNHTAU 384502, 384541 ● 3♂; ibid.; SMNHTAU 384508, 384510, 384533 ● 1♂; ibid.; BOLD accession no. ANDIL498-25; SMNHTAU 384505 ● 2♀; ibid.; pan trap; SMNHTAU 384611, 384612 ● 1♀; ibid.; BOLD accession no. ANDIL499-25; SMNHTAU 384610 ● 1♀; Holot Shunera; 30.941° N 34.597° E; 17 Mar. 2017; G. Pisanty leg.; pan trap; BOLD accession no. ANDIL439-25; SMNHTAU 269102 ● 1♀; KKL Park Sayeret Shaqed; 31.2795° N 34.6495° E; 19 Mar. 2022; G. Pisanty leg.; sweeping; BOLD accession no. ANDIL503-25; SMNHTAU 385879 ● 3♀; Mashabe Sade; 16 Feb. 1976; A. Freidberg leg.; SMNHTAU 348560 to 348562 ● 1♀; Nahal Zin; 16 Mar. 2008; Y. Hollander leg.; SMNHTAU 19223 ● 1♀; Shivta; 13 Mar. 1977; A. Freidberg leg.; SMNHTAU 348566 ● 3♀; ibid.; 17 Mar. 1977; SMNHTAU 348563 to 348565 ● 1♀; Subeita [Shivta]; 21 Mar. 1946; SMNHTAU. – **JORDAN** ● 7♀; Jordan E., Azraq; 24 Apr. 1996; Marek Halada leg.; OLML. – **MOROCCO** ● 2♀; Guelmim-Oued Noun, Guelmim, Asrir, 1 km W; 28.9343° N –10.0203° W; 20 Mar. 2022; T. Wood leg.; BOLD accession nos. WPATW687-22, WPATW688-22; TJWC.

3.1.2. *Andrena minutula* group

3.1.2.1. *Andrena* (*Micrandrena*) *alfkenella* Perkins, 1914

Figures 17B, F, 21C

Andrena alfkenella Perkins, 1914: 112–113, ♀♂ [England: NHMUK or OUMNH].

Andrena moricella Perkins, 1914: 113, ♂ [England: NHMUK or OUMNH].

Andrena alfkenella ssp. *sunna* Warncke, 1975b: 295, ♀♂ [Spain: OLML].

Distribution and habitat. Mostly mesic habitats in Morocco, Europe and the northwestern Middle East. In the Levant, limited to mountains above 1300 m in north and central Lebanon (Wood et al. 2020).

Flight period. Late April at least until mid-July (in Europe until August), in two generations.

Flower preferences. Polylectic. Pollen hosts include Apiaceae, Brassicaceae, Plantaginaceae and Rosaceae (Westrich 1989). The second generation exhibits strong preference for Apiaceae pollen (TJW, unpublished data). IUCN (2024) also mentions foraging on Asteraceae, Boraginaceae and Campanulaceae. In Lebanon, recorded on *Chaerophyllum*, *Euphorbia* and *Peltaria* (Wood et al. 2020).

Material examined. LEBANON: See Wood et al. 2020. – **PORTUGAL** ● 1♀; Bragança, between Rabal and França; 41.8847° N –6.7372° W; 14 Jul. 2020; T. Wood leg.; BOLD accession no. IBIHM474-21; TJWC. – **ROMANIA** ● 1♀; Iași, 1 km NNW Ciurea, fallow fields; 47.0817° N 27.5679° E; 23 Jul. 2023; T. Wood leg.; BOLD accession no. ORBIT191-23; TJWC. – **SPAIN** ● 1♀; Pena Trevinca, Valdin, Seoane; 42.232° N –6.9532° W; 15 Jul. 2020; T. Wood leg.; BOLD accession no. WPATW029-21; TJWC ● 1♀; Sierra de Baza, Prados del Rey; 37.3750° N –2.8545° W; 2000 m a.s.l.; 19 Jun. 2021; T. Wood leg.; BOLD accession no. WPATW357-21; TJWC. – **TURKEY** ● 1♂; Burdur, 20 km SW Burdur; 7 Jul. 2006; M. Halada & M. Kadlecová leg.; BOLD accession no. ANDGP017-25; OLML.

3.1.2.2. *Andrena* (*Micrandrena*) *alfkenelloides cardalia* Warncke, 1975

Figures 13C, 16A, G, 21B

Andrena alfkenelloides ssp. *cardalia* Warncke, 1975a: 47, ♀♂ [SE-Turkey: OLML].

Distribution and habitat. Shrublands, sub-alpine and semi-arid habitats in Cyprus, all countries of the Levant, and southern Turkey.

Flight period. Late January to early June, in two generations.

Flower records. Collected mostly from Asteraceae (*Anthemis*, *Calendula*, *Crepis*, *Glebionis*, *Helichrysum*, *Senecio*) and Brassicaceae (*Alyssum*, *Isatis*, *Lepidium*, *Sinapis*), also from Apiaceae, Caryophyllaceae, Geraniaceae, Liliaceae and Rosaceae. Varnava et al. (2020) mention pollen collection from Apiaceae and Brassicaceae.

Remarks. The status of *A. a. cardalia* is not sufficiently clear at this point, as preliminary results suggest that the nominate form of *A. alfkenelloides* might be closer to *A. floricola* Eversmann than to the eastern subspecies. Barcodes of the nominate form from Greece are required to fully assess the status of this species complex, and to conclude whether eastern populations constitute a distinct taxon.

Material examined. HOLOTYPE: TURKEY ● 1♀; Anatolia, Antakya; 1–7 Jun. 1965; J. Gusenleitner leg.; OLML. – **non-type material: CYPRUS** ● 1♀; Agía Ánna; 34.9398° N 33.4831° E; 148 m a.s.l.; 12 Apr. 2024; R. Santerre leg.; on *Glebionis coronaria*; BOLD accession no. RSCMC021-25; UMONS ● 1♀; E Agia Marina Chrysochous vill.; 161 m a.s.l.; 23 Mar. 2022; T. Ljubomirov leg.; IBER ● 1♀; Akamas Pen.[insula]; 35.026–055° N 32.341–364° E; 10 Apr. 2025; G. Pisanty leg.; SMNHTAU 467179 ● 3♀,1♂; North Anogyra, site 12; 34.742° N 32.7348° E; 3 May 2015; M. Jenner leg.; MJ ● 1♂; zw. [between] Coral Bay und Agios Georgios, 15km nnw Paphos; 5 May 2003; E. Scheuchl leg.; GPC ● 1♀; ibid.; on Brassicaceae ● 3♀; Drouseia; 34.9659° N 32.4121° E; 520 m a.s.l.; 31 May 2023; P. Rosa leg.; UMONS ● 12♂; Famagusta district, Agia Napa, Cape Greco; 8 Mar. 2019; M. Mikát leg.; JS ● 1♀; Finikária, Lake, Phoinikaria Trail; 34.756° N 33.094° E; 87 m a.s.l.; 22 Mar. 2024; R. Santerre leg.; on *Sinapis alba*; UMONS ● 1♀; ibid.; flying ● 1♀; Germasogeia; 1–10 Apr. 2000; S. Kadelc leg.; OLML ● 2♀,1♂; Kato Lefkara; 500 m a.s.l.; 7 May 2014; M. Kafka leg.; OLML ● 1♀; Káto Plátres, 0.3km E from village; 34.881° N 32.8463° E; 951 m a.s.l.; 3 May 2024; G. Corbisier leg.; on *Crepis* cf. *reuteriana*; UMONS ● 1♀; ibid.; E. Ruelle leg. ● 1♂; Káto Polemídia, 0.6km N Karmiotissa; 34.7174° N 32.9779° E; 222 m a.s.l.; 18 Apr. 2024; R. Santerre leg.; on *Anthemis tricolor*; BOLD accession no. RSCMC022-25; UMONS ● 1♀; Kelokedara E Pafos; 500 m a.s.l.; 7 May 2000; Vogtenh & Hentschol leg.; OLML ● 186♀; Kykkos; 800 m a.s.l.; 11 May 2014; M. Kafka leg.; OLML ● 4♀; ibid.; TJWC ● 2♀; Lánia; 34.8226° N 32.9132° E; 512 m a.s.l.; 7 Mar. 2024; R. Santerre leg.; on *Sinapis alba*; UMONS ● 1♀; ibid.; flying ● 1♂; ibid.; BOLD accession no. RSCMC020-25 ● 1♀; Larnaca district, Lefkara; 1 Mar. 2019; M. Mikát leg.; JS ● 1♀; Lasa vill. (Thrinia); 34.9216° N 32.5282° E; 600 m a.s.l.; 4. Jun. 2023; P. Rosa leg.; UMONS ● 2♀,23♂; E of Lemesos, Mary env; 6 Mar. 2014; M. Snižek leg.; OLML ● 2♂; ibid.; TJWC ● 23♂; 30 km N Lemesos, Apliki env; 700 m a.s.l.; 7 Mar. 2014; M. Snižek leg.; OLML ● 1♂; Lemesos, Amathus, Agios Tychon; 18 Apr. 2002; E. Scheuchl leg.; LB ● 1♂; Lemesos, Amathus, Ancient Site; 17 Apr. 2002; E. Scheuchl leg.; LB ● 1♀; Letymvou N Pafos; 2 May 2000; Vogtenh & Hentschol leg.; OLML ● 2♀; Limassol; Apr. 1932; G.A. Mavromoustakis leg.; MSNM ● 1♂; Limassol, Cherkes Chiftlik, site 3; 8 May 2016; A. Varnarva leg.; AV ● 1♂; Limassol, Cherkes Chiftlik, site 4; 9 Feb. 2017; A. Varnarva leg.; AV ● 1♀; Mandriá, 1km NW from village; 34.8735° N 32.8218° E; 865 m a.s.l.; 16 Mar. 2024; R. Santerre leg.; on *Sinapis alba*; UMONS ● 1♀; Moniatis; 34.870–82° N 32.877–92° E; 9 Apr. 2023; G. Pisanty leg.; SMNHTAU 426936 ● 1♀; ibid.; 34.8695° N 32.8915° E; pan trap; SMNHTAU 426898 ● 1♀; Moniatis env.; 34.862–70° N 32.881–93° E; 9 Apr. 2023; G. Pisanty leg.; SMNHTAU 426795 ● 1♀; ibid.; BOLD accession no. ANDCY011-24; SMNHTAU 426794 ● 132♀; Mylikouri; 700 m a.s.l.; 13 May 2014; M. Kafka leg.; OLML ● 2♀; ibid.; TJWC ● 1♀; Nicosia; 6 May 1981; C.G. Roche leg.; OUMNH ● 4♀; Nicosia district, Mathiatis; 6 Mar. 2019; M. Mikát leg.; JS ● 1♂; Nicosia district, Profitis Elias monastery; 5 Mar. 2019; M. Mikát leg.; JS ● 15♂; North Cyprus, 15 km E Diakarpaz, Golden Sands; 10 Apr. 2007; C. Schmid-Egger leg.; CSE ● 12♀; Olympus Mount, SE slope; 34.9332° N 32.8723° E; 1842 m a.s.l.; 3 May 2024; R. Santerre leg.; on *Alyssum*; UMONS ● 1♀; ibid.; on Asteraceae ● 1♀; ibid.; G. Corbisier leg. ● 1♀; ibid.; E. Ruelle leg.; ● 2♀; ibid.; on *Anthemis plutonia* ● 1♀; ibid.; on *Alyssum* ● 3♀; Ómodos, 1km N from village; 34.8567° N 32.8062° E; 905 m a.s.l.; 3 May 2024; E. Ruelle leg.; on yellow Brassicaceae; UMONS ● 2♀; ibid.; G. Corbisier leg. ● 1♀; ibid.; R. Santerre leg.; on *Helichrysum* ● 9♀; Pafos, 10 km NE; 8–20 May 1993; J. Wimmer leg.; OLML ● 1♀; Palódia, Ayia Irini Monastry; 34.7441° N 32.976° E; 192 m a.s.l.; 7 Mar. 2024; R. Santerre leg.; on *Sinapis alba*; UMONS ● 6♀; Pano Panagia; 34.9213° N 32.6310° E; 15 Apr. 2025; G. Pisanty leg.; pan trap; SMNHTAU 467677, 467746 to 467748, 467754, 467758 ● 4♀; Pano Panagia env.; 34.921–928° N 32.631–640° E; 12 Apr. 2025; G. Pisanty leg.; SMNHTAU 467283, 467306, 467308, 467324 ● 2♀; ibid.; 15 Apr. 2025; SMNHTAU 467591, 467615 ● 3♀; ibid.; 34.921–934° N 32.631–647° E; 14 Apr. 2025; SMNHTAU 467486, 467490, 467491 ● 3♀; Paphos [District], Neo Chorio; 35.021–5° N 32.354–60° E; 11 Apr. 2025; G. Pisanty leg.; on *Sinapis*; SMNHTAU 467236, 467252, 467253 ● 2♀; Paphos Distr., Akamas, Halbinsel W Polis ober Neochorio; 400 m a.s.l.; 6 May 2013; E. Heiss leg.; OLML ● 1♀; Peyia, Elipetra, 1.5km SE Lara Beach; 34.9466° N 32.3214° E; 31 m a.s.l.; 9 Feb. 2024; R. Santerre leg.; flying; UMONS ● 1♀; Pissouri; 34.662–6° N 32.687–98° E; 250 m a.s.l.; 14 Apr. 2023; G. Pisanty leg.; SMNHTAU 427256 ● 1♂; ibid.; on Asteraceae; BOLD accession no. ANDCY029-24; SMNHTAU 427177 ● 4♂; Platanístia, 2.5km SE Pissoúri; 34.6987° N 32.7105° E; 287 m a.s.l.; 10 Feb. 2024; R. Santerre leg.; on *Gagea* cf. *chlorantha*; UMONS ● 1♂; ibid.; BOLD accession no. RSCMC019-25 ● 1♂; Plátres, Millomeris Waterfall Trail; 34.887° N 32.8644° E; 1077 m a.s.l.; 29 Feb. 2024; R. Santerre leg.; on *Calendula arvensis*; UMONS ● 53♂; Polis [Chrysochous] env; 9 Mar. 2014; M. Snižek leg.; OLML ● 3♀; Skaritou [Skarinou]; 400 m a.s.l.; 7 May 2014; M. Kafka leg.; OLML ● 1♀; Statos; 34.881° N 32.6201° E; 900 m a.s.l.; 7 Jun. 2023; P. Rosa leg.; UMONS ● 4♀; Trimiklini; 34.85–6° N 32.91–3° N; 600–700 m a.s.l.; 11 Apr. 2023; G. Pisanty leg.; SMNHTAU 427050 to 427052, 427054 ● 1♀; ibid.; BOLD accession no. ANDCY023-24; SMNHTAU 427053 ● 1♀; Trimithousa, Evretou dam; 34.9738° N 32.4777° E; 179 m a.s.l.; 22 Apr. 2024; R. Santerre leg.; on Apiaceae; UMONS ● 1♀; ibid.; flying ● 6♀; Troodos range, 0.7km N Olympus Mt.; 34.9429° N 32.8653° E; 1828 m a.s.l.; 24 Apr. 2024; R. Santerre leg.; on *Arenaria*; UMONS ● 1♀; ibid.; BOLD accession no. RSCMC024-25 ● 1♀,2♂; Troodos range, Kykkos Monastry; 34.9856° N 32.7442° E; 1092 m a.s.l.; 23 Apr. 2024; R. Santerre leg.; on *Sinapis alba*; UMONS ● 34♀; Troodos range, Pródromos; 34.9463° N 32.8296° E; 1310 m a.s.l.; 24 Apr. 2024; R. Santerre leg.; on *Lepidium draba*; UMONS ● 1♀; ibid.; BOLD accession no. RSCMC023-25 ● 1♀; ibid.; on *Erodium cicotarium* ● 1♀; ibid.; on yellow Asteraceae ● 3♀; ibid.; 34.9498° N 32.8347° E; 1384 m a.s.l.; on *Crepis reuteriana* ● 1♀; ibid.; at nesting site ● 1♀; Troodos range, Stavros tis Psokas; 35.0232° N 32.6342° E; 945 m a.s.l.; 23 Apr. 2024; R. Santerre leg.; on *Crepis reuteriana*; UMONS ● 3♀; Troodos village; 34.9225° N 32.8798° E; 1719 m a.s.l.; 24 May 2024; R. Santerre leg.; on *Alyssum*; UMONS ● 1♀; ibid.; on *Cotoneaster nummularius* ● 1♀; Vavatsinia; 30 May 1999; F. Kantner leg.; OLML. – **ISRAEL** ● 1♂; Alloné haBashan; 23 Feb. 2012;

G. Pisanty leg.; SMNHTAU 107038 ● 1♂; Almagor; 32°54' N 35°35' E; 12–31 Jan. 2011; W. Kuslitzky leg.; SMNHTAU 109894 ● 1♀; Banias; 18 Apr. 1992; R. Kasher leg.; SMNHTAU 366333 ● 1♂; Ben Shemen Forest; 31.93° N 34.972° E; 18 Feb. 2017; G. Pisanty leg.; SMNHTAU 268576 ● 4♀; Bet Guvrin; 31.611° N 34.890° E; 17 Feb. 2023; G. Pisanty leg.; pan trap; SMNHTAU 420823 to 420825, 420828 ● 2♂; ibid.; SMNHTAU 420829, 420830 ● 1♀; Bet Lehem haGelilit; 10 Mar. 1997; L. Friedman leg.; SMNHTAU 366338 ● 2♀; Bet Nir, 1.5km SSE; 31.6347° N 34.879° E; 17 Feb. 2023; G. Pisanty leg.; pan trap; SMNHTAU 420907, 420908 ● 1♂; ibid.; SMNHTAU 420909 ● 1♀; Binyomina [Binyamina]; 26 Jan. 1976; A. Freidberg leg.; SMNHTAU 366337 ● 1♂; BitronotRuhama, Nahal Hazav; 31°31.883' N 34°42.275' E; 5 Apr. 2005; L. Friedman leg.; SMNHTAU 366326 ● 1♀; Bnei Brak; 5 Mar. 1945; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; Carmel, Har Telalim; 32.757° N 35.0245° E; 440 m a.s.l.; 16 Mar. 2025; G. Pisanty leg.; SMNHTAU 464574 ● 1♀; Carmel NP, 0.9km SE Bet Oren; 32°43'21" N 35°00'45" E; 264 m a.s.l.; 16 Apr. 2016; A. Dorchin leg.; SMNHTAU 354458 ● 1♀; Dag [?]; 8 Jan. 1940; SMNHTAU ● 1♂; ibid.; SMNHTAU 366425 ● 1♀; Dalia; 22 Feb. 1986; E. Shney-Dor leg.; SMNHTAU 366334 ● 1♀; Deganya A; 23 Feb. 1942; Y. Palmoni leg.; on Brassicaceae; SMNHTAU 180732 ● 2♀; Dovrat; 18 Apr. 1970; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; Ein Zeitim; 15 May 1996; M. Trebicz leg.; SMNHTAU ● 1♀; Elon; 18 Apr. 1946; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; 'En Tina NR; 33.08417° N 35.642° E; 70–80 m a.s.l.; 24 Mar. 2019; A. Dorchin, T. Roth & A. Sviri leg.; SMNHTAU 310271 ● 1♀; Ginosar; 6 Mar. 1965; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; Gonen, SE Qiryat-Shmona; 18 Mar. 1994; R. Kasher leg.; SMNHTAU 353692 ● 1♀; HAELA JUN.[ction]; 21 Apr. 1984; E. Shney-Dor leg.; SMNHTAU 366319 ● 1♀; HaGolan, S Nahal Neshef; 33.092° N 35.644° E; 100 m a.s.l.; 24 Mar. 2019; A. Dorchin, T. Roth & A. Sviri leg.; SMNHTAU 310192 ● 1♀; 40 km NE Haifa, 1 km E Hurfeish; 15 May 1996; C. Schmid-Egger leg.; CSE ● 1♀; Har Addir; 33.033° N 35.361° E; 22 Apr. 2016; G. Pisanty leg.; pan trap; BOLD accession no. ANDIL430-25; SMNHTAU 240798 ● 1♀; Har Ahino'am; 32.502–6° N 35.408–14° E; 440 m a.s.l.; 3 Mar. 2025; G. Pisanty leg.; SMNHTAU 463988 ● 1♂; ibid.; 32.5035° N 35.413° E; 438 m a.s.l.; pan trap; SMNHTAU 463897 ● 2♂; Har Bental; 1100 m a.s.l.; 3 Mar. 2016; L. Friedman leg.; SMNHTAU 235019, 235020 ● 3♀; Har Dov, Karst; 33°18.6' 35°43.2' E; 1380 m a.s.l.; 25 May 2010; A. Freidberg leg.; SMNHTAU 63661 to 63663 ● 2♀; Har Hermon; 1600 m a.s.l.; 29 May 2000; I. Yarom leg.; SMNHTAU 366320, 366321 ● 1♀; Har Hermon; 1650 m a.s.l.; 28 May 2000; L. Friedman leg.; SMNHTAU 366322 ● 1♀; ibid.; 33°18' N 35°46' E; 1700 m a.s.l.; 24 May 2012; SMNHTAU 126622 ● 1♂; ibid.; 6 Jun. 2013; SMNHTAU 142444 ● 1♀; Har Hermon; 33°18.2' N 35°47.2' E; 2000 m a.s.l.; 7 May 2010; A. Freidberg leg.; SMNHTAU 53267 ● 4♂; Har Hermon; 33.2994° N 35.7675° E; 1645 m a.s.l.; 16 Apr. 2021; G. Pisanty leg.; SMNHTAU 361217, 361218, 361222, 361402 ● 1♂; ibid.; 33.300° N 35.767° E; 1620 m a.s.l.; 11 May 2020; SMNHTAU 334838 ● 2♀; ibid.; 33.304° 35.7875° E; 2020 m a.s.l.; 15 May 2016; SMNHTAU 242307, 242312 ● 3♀; ibid.; 33.310° 35.795° E; 1970 m a.s.l.; 15 May 2016; SMNHTAU 242237, 242240, 242241 ● 1♂; ibid.; 33.299° N 35.769° E; 1650 m a.s.l.; 7 Apr. 2021; sweep; SMNHTAU 360404 ● 2♂; ibid.; 33.2992° N 35.7670° E; 1644 m a.s.l.; 16 Apr. 2022; pan trap; SMNHTAU 390132, 390134 ● 1♀; ibid.; 33.2996° N 35.7677° E; 1642 m a.s.l.; 19 May 2022; SMNHTAU 392726 ● 2♀; Har Hermon, Nahal 'Arar; 33°18.3' N 35°46.2' E; 1600 m a.s.l.; 24 May 2012; L. Friedman leg.; SMNHTAU 126763, 126764 ● 1♀; Har Meron; 33.000° N 35.3925° E; 22 Apr. 2016; G. Pisanty leg.; SMNHTAU 240986 ● 1♂; ibid.; 32.9948° N 35.4147° E; pan trap; SMNHTAU 240903 ● 1♀; Hare Gilboa', Har Avinadav; 32°28' N 35°26' E; 420 m a.s.l.; 23 Feb. 2012; L. Friedman leg.; SMNHTAU 118462 ● 1♀; Hawwat 'Eden, Bet She'an; 3 Feb. 1999; L. Friedman leg.; SMNHTAU 367648 ● 1♀; Hermon; 33.291–4° N 35.747–51° E; 1440–1550 m a.s.l.; 29 Apr. 2022; G. Pisanty leg.; sweep; SMNHTAU 391563 ● 1♀; ibid.; 33.298–9° N 35.767–70° E; 1640–1675 m a.s.l.; 19 May 2022; SMNHTAU 392815 ● 1♀; ibid.; on Brassicaceae; SMNHTAU 392770 ● 3♀; Hermon NR, Har Kahal, Plot E2; 33.286° N 35.736° E; 1368 m a.s.l.; 28 May 2019; L. Friedman leg.; SMNHTAU 308181, 308182, 308194 ● 1♀; ibid.; BOLD accession no. ANDIL457-25; SMNHTAU 308198 ● 1♂; ibid.; BOLD accession no. ANDIL456-25; SMNHTAU 308192 ● 1♀; Horbat Kefar Lakhish; 31.575° N 34.8532° E; 5 Mar. 2021; G. Pisanty leg.; sweep; SMNHTAU 358850 ● 1♀; Jer.[usalem?]; [?] May 1940; SMNHTAU ● 1♀; Judean desert; 11 Mar. 1980; A. Hefetz leg.; SMNHTAU 353583 ● 1♀; Kefar Giladi N; 21 Mar. 1997; R. Kasher leg.; SMNHTAU 366422 ● 1♀; Kefar Giladi S; 25 Mar. 1997; R. Kasher leg.; SMNHTAU 366423 ● 1♂; Kesalon; 10 Feb. 1973; M. Kaplan leg.; SMNHTAU 367646 ● 1♀; Lachish; 18 Feb. 2020; T. Roth leg.; on *Isatis lusitanica*; SMNHTAU 338260 ● 1♀; Lahav; 23 Apr. 1970; H. Bytinski-Salz leg.; SMNHTAU ● 2♀; Lahavot HaBashan; 1 Mar. 2018; G. Pisanty leg.; SMNHTAU 286590, 286599 ● 1♀; Majdal Shams; 33.262° N 35.755° E; 1100 m a.s.l.; 27 Apr. 2020; G. Pisanty leg.; SMNHTAU 334297 ● 1♀; Makhtesh Ramon; 30°35'6" N 34°53'31" E; 500 m a.s.l.; 20 Feb. 2020; T. Novoselsky leg.; SMNHTAU 331759 ● 1♀; Ma'yan Barukh; 33.232° N 35.611° E; 29 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462801 ● 1♀; ibid.; 3 May 2023; SMNHTAU 462792 ● 6♂; Me'arat Yishah [Yishah Cave], 0.5km E; 32.718° N 35.007° E; 22 Feb. 2019; G. Pisanty leg.; SMNHTAU 321563, 321567, 321575, 321578, 321581, 321603 ● 1♂; ibid.; BOLD accession no. ANDIL463-25; SMNHTAU 321600 ● 1♀; Merom Golan; 14 Mar. 1975; M. Kaplan leg.; SMNHTAU 366335 ● 1♂; Merom Ha'Golan; 18 Mar. 1973; M. Kaplan leg.; SMNHTAU 354495 ● 1♀; Meron NR, 1.2km SSW Meron field school; 32°59'55" N 35°23'31" E; 998 m a.s.l.; 3 Apr. 2016; A. Dorchin leg.; SMNHTAU 354455 ● 1♀; Monfort; 10 Mar. 1981; F. Kaplan leg.; SMNHTAU 366340 ● 1♂; Montfort, Nahal Keziv; 28 Feb. 2018; G. Pisanty leg.; SMNHTAU 286315 ● 1♀; Moradot HaGolan NR, 960m SE Gonen; 33.111° N 35°651° E; 190 m a.s.l.; 7 Apr. 2019; Site A3; A. Dorchin, A. Sviri & O. Halbershtat leg.; SMNHTAU 308891 ● 1♂; ibid.; SMNHTAU 308876 ● 2♀; Moradot HaGolan NR, Nahal Neshef, Site B3; 33.094° N 35.650° E; 184 m a.s.l.; 24 Apr. 2019; A. Dorchin, T. Roth & O. Halbershtat leg.; SMNHTAU 308935, 308938 ● 1♀; Moradot HaGolan NR, Tel 'Arfiyya, Plot A2; 33.105° N 35.657° E; 264 m a.s.l.; 7 Apr. 2019; A. Dorchin, A. Sviri & O. Halbershtat leg.; SMNHTAU 308861 ● 2♀; Mt. Hermon; 1750 m a.s.l.; 25 May 1988; I. Yarom leg.; SMNHTAU 366323, 366324 ● 1♀; ibid.; 2000 m a.s.l.; SMNHTAU 366325 ● 1♂; Nahal Alexander; 6 Apr. 2017; K. Levy leg.; BOLD accession no. ANDIL446-25; SMNHTAU 274049 ● 1♀; Nahal Batra, Plot C12; 32.916° N 35.688° E; 85 m a.s.l.; 23 May 2019; A. Drochin & T. Roth leg.; SMNHTAU 306805 ● 1♂; Nahal Gilbon, Upper parking lot, Plot B5; 33.042° N 35.671° E; 408 m a.s.l.; 15 May 2019; A. Dorchin & A. Sviri leg.; SMNHTAU 308816 ● 1♂; ibid.; BOLD accession no. ANDIL459-25; SMNHTAU 308819 ● 1♀; Nahal Maresha; 31.577° N 34.858° E; 220 m a.s.l.; 15 Mar. 2021; G. Pisanty leg.; sweep; SMNHTAU 359317 ● 1♀; Nahal Mezar; 32.75–7° N 35.69° E; 1 Mar. 2022; G. Pisanty leg.; sweeping; SMNHTAU 385152 ● 1♂; Nahal Qazrin, Nr. 'Asaliyya, Plot C9; 32.969° N 35.672° E; 169 m a.s.l.; 25 Apr. 2019; A. Dorchin leg.; SMNHTAU 306139 ● 3♀; Nahal Sa'ar, N Golan Height; 30 Mar. 1997; R. Kasher leg.; SMNHTAU 353778 to 353780 ● 1♀; Pa'ar Cave, nearSasa; 33°02' N 35°23' E; 800 m a.s.l.; 28 May 2009; A. Freidberg leg.; SMNHTAU

34310 ● 2♀; Park Britannia; 24 Apr. 2011; T. Koznichki leg.; pan trap; SMNHTAU 354426, 354432 ● 1♀; ParkHayarden; 27 Apr. 1984; I. Yarom leg.; SMNHTAU 366318 ● 1♀; Peqiin; 14 May 1974; A. Freidberg leg.; SMNHTAU ● 1♀; Qazrin; 32°59' N 35°41' E; 14 May 2012; O. Barash leg.; SMNHTAU 367647 ● 1♀; Qazrin; 32°59.2' N 35°41.8' E; 335 m a.s.l.; 22 May 2011; A. Freidberg leg.; SMNHTAU 94279 ● 1♀; Qiryat Shemona; 28 May 2003; A. Freidberg leg.; SMNHTAU 366317 ● 2♀; R.G.n [?Ramat Gan]; 3 Feb. 1940; SMNHTAU ● 1♀; 17 km E Qiryat Shemona, Golan, 2 km SE Zomet; 16 May 1996; M. Hauser leg.; CSE ● 1♂; Ramat HaNadiv; 6–20 Apr. 2022; Y. Miara leg.; Malaise trap; SMNHTAU 439415 ● 1♂; Ramat HaNadiv; 32.54–6° N 34.94–6° E; 16 Mar. 2023; G. Pisanty leg.; SMNHTAU 425829 ● 1♂; Road 869, 2.12Km NE Ma'ale Gamla Jcn [Junction], Plot D8; 32.895° N 35.676° E; –51 m a.s.l.; 11 Apr. 2019; A. Dorchin, Y. Mersman & O. Halbershtat leg.; SMNHTAU 307431 ● 1♀; Sasa; 17 Feb. 1973; M. Kaplan leg.; SMNHTAU 366336 ● 1♀; Sha'alvim; 16 Mar. 2017; T. Roth leg.; BOLD accession no. ANDIL449-25; SMNHTAU 276411 ● 1♀; Snir - Hermon Field Study Center; 27 Mar. 1997; R. Kasher leg.; SMNHTAU 366424 ● 1♀; Tel Bar'on, Rt.98; 33°09.6' N 35°46.8' E; 1000 m a.s.l.; 22 May 2011; M. Guershon leg.; SMNHTAU 94491 ● 1♀; Tiberias; 32.765° N 35.523° E; 27 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462991 ● 1♂; near Tiberias, Switzerland forest, pasture; 1 Mar. 2016; J. Pražak leg.; JS ● 1♂; Tivon; 6 Feb. 1975; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; Wadi Ara; 24 Jan. 1976; A. Freidberg leg.; SMNHTAU 366426 ● 1♂; Ya'ar Nehosha [Nehusha Forest]; 26 Apr. 2010; T. Koznichki leg.; SMNHTAU 59626 ● 1♂; ibid.; 25 Apr. 2011; SMNHTAU 366420 ● 1♀; Ya'ar Nehusha; 26 Apr. 2010; T. Koznichki leg.; pan trap; BOLD accession no. ANDIL506-25; SMNHTAU 59635 ● 1♀; ibid.; 25 Apr. 2011; SMNHTAU 354435 ● 3♀; Ya'ar Odem NR; 1 Mar. 2018; G. Pisanty leg.; SMNHTAU 286469, 286522, 286545 ● 1♂; ibid.; SMNHTAU 286466 ● 4♀; Ya'ar Odem NR; 33.186° N 35.7356° E; 27 Feb. 2020; G. Pisanty leg.; pan trap; SMNHTAU 332300, 332302, 332306, 332328 ● 1♀; ibid.; BOLD accession no. ANDIL474-25; SMNHTAU 332304 ● 2♂; ibid.; SMNHTAU 332290, 332299 ● 2♀; ibid.; 33.206° N 35.736° E; SMNHTAU 332082, 332086 ● 1♂; ibid.; SMNHTAU 332079 ● 1♂; ibid.; BOLD accession no. ANDIL472-25; SMNHTAU 332084 ● 1♀; Ya'ar Yehudiyya NR, 400m W parking lot, Plot C3; 32.939° N 35.696° E; 183 m a.s.l.; 23 Apr. 2019; A. Dorchin, T. Roth & O. Halbershtat leg.; SMNHTAU 306022 ● 1♀; Ya'ar Yehudiyya NR, 1.8km NW parking lot, Plot C6; 32.957° N 35.693° E; 217 m a.s.l.; 24 Apr. 2019; A. Dorchin, T. Roth & O. Halbershtat leg.; SMNHTAU 306088 ● 1♂; Ya'ar Yehudiyya NR, Rd. 87, Plot C1; 32.926° N 35.681° E; 73 m a.s.l.; 23 Apr. 2019; A. Dorchin, T. Roth & O. Halbershtat leg.; SMNHTAU 306013 ● 1♀; Ya'ar Yish'i; 18 Feb. 2011; T. Koznichki leg.; SMNHTAU 81246 ● 1♀; ibid.; 26 Apr. 2011; pan trap; SMNHTAU 81408 ● 1♀; Yehi'am; 16 Feb. 2014; L. Friedman leg.; BOLD accession no. ANDIL404-25; SMNHTAU 173840 ● 1♂; Yiftah, E. Upp. Gallilee; 17 Feb. 1990; R. Kasher leg.; SMNHTAU 366427 ● 1♀; Yiron; 14 May 1974; A. Freidberg leg.; SMNHTAU ● 2♀; ZikhronYaakov; 9 Feb. 1988; I. Yarom leg.; SMNHTAU 366327, 366328 ● 3♂; ibid.; SMNHTAU 353531, 353534, 366428 ● 1♀; Ziv'on, 1kmSW; 33.019° N 35.407° E; 5 Apr. 2016; G. Pisanty leg. ; SMNHTAU 239290 ● 2♀; ירושלים [Jerusalem]; 20 Apr. 1937; SMNHTAU ● 1♀; ibid.; 25 Apr. 1937. – **JORDAN** ● 3♀; Ajloun; 6–7 May 2012; M. Kafka leg.; OLML ● 1♀; Ajlun env; 840 m a.s.l.; 1 May 2006; K. Deneš leg.; OLML ● 83♂; 30 km NW Ajlun; 600 m a.s.l.; 29 Apr. 2006; K. Deneš leg.; OLML ● 2♀; ibid.; TJWC ● 3♀; 20 km N Amman; 620 m a.s.l.; 23 Apr. 2006; K. Deneš leg.; OLML ● 1♀; 10 km N Jerash; 20 Apr. 2002; M. Snižek leg.; OLML ● 1♀; 15 km W Madaba; 760 m a.s.l.; 27 Apr. 2006; K. Deneš leg.; OLML ● 1♀; Pella env. [Tabaqat Fahl]; –80 m a.s.l.; 29 Apr. 2006; K. Deneš leg.; OLML. – **LEBANON** ● 2♀; Baalbek distr., Qaa; 750 m a.s.l.; 13 May 2023; V. Soon leg.; TUZ 347150 ● 1♂; Baalbek Distr., Ras Baalbek 6 km NW; 750 m a.s.l.; 13 May 2023; V. Soon leg.; TUZ 343288. – **SYRIA** ● 1♀; Crac des Chevaliers; 30 May 1995; K. Deneš leg.; OLML ● 1♀; ibid.; TJWC ● 1♀; [Camp] Faouar; 10 May 2001; J. Plass leg.; OLML ● 1♀; Jisr al-Shughur; 26 May 1996; Ma. Halada leg.; OLML ● 3♀; Tartus; 25 May 1996; Ma. Halada leg.; OLML. – **WEST BANK** ● 1♂; Argaman, Wadi Umm-Kharba; –200–(–250) m a.s.l.; 3 Apr. 2022; L. Friedman leg.; SMNHTAU 387513 ● 2♀; Har 'Eval, Yehushua binNun Althar [Joshua's Altar]; 780–856 m a.s.l.; 25 Apr. 2016; L. Friedman leg.; SMNHTAU 243679, 243682 ● 1♀; Kfar Adumim; 3 Mar. 1981; A. Freidberg leg.; SMNHTAU 366339 ● 1♀; Ma'agar Tirza; –300 m a.s.l.; 1 Mar. 2022; L. Friedman leg.; SMNHTAU 386385 ● 1♀; Ma'on, 0–1kmS; 750–800 m a.s.l.; 14 Apr. 2015; L. Friedman leg.; BOLD accession no. ANDIL420-25; SMNHTAU 212520 ● 1♀; Mehola, Rt. 578; 32°21'48" N 35°30'49" E; –177 m a.s.l.; 27 Feb. 2020; L. Friedman leg.; SMNHTAU 332686 ● 1♀; NofePerat, Kefar Adummim, north-facing slope of Nahal Perat; 27 Feb. 2007; L. Friedman leg.; SMNHTAU 366332 ● 1♀; Nu'eima; 5 Mar. 1981; A. Freidberg leg.; SMNHTAU 366330 ● 1♀; ibid.; T. Furman leg.; SMNHTAU 366329 ● 2♀; Peza'el; 18 Feb. 2020; M. Guershon leg.; SMNHTAU 342134, 342137 ● 1♀; Peza'el; 32°2'57" N 35°26'7" E; –200 m a.s.l.; 18 Feb. 2020; G. Pisanty leg.; BOLD accession no. ANDIL475-25; SMNHTAU 332858 ● 4♀; ibid.; L. Friedman leg.; SMNHTAU 332412, 332413, 332415, 332423 ● 1♂; Qedumim, cemetry; 8 Jan. 2021; L. Friedman leg; SMNHTAU 353855 ● 1♀; ibid.; 3 Feb. 2017; on *Senecio*; SMNHTAU 267696 ● 2♂; ibid.; SMNHTAU 267699, 267745 ● 1♀; Qida, 1kmSE, Gid'on Rd., Bor Gal Yosef/Bir Muhsin; 660 m a.s.l.; 5 Mar. 2020; L. Friedman leg.; SMNHTAU 332829 ● 2♀; Sartava NR, Wadi el-Ahmar, 2kmE Gittit; –80–+60 m a.s.l.; 13 Feb. 2019; A. Dorchin leg.; SMNHTAU 300395, 300396 ● 1♀; Wadi Ahmar, near Yarden [Jordan River]; 32°01' N 35°30' E; 15 Mar. 2005; L. Friedman leg.; SMNHTAU 366331 ● 1♀; Wadi Faria [Nahal Tirza]; 8 Mar. 1973; A. Freidberg leg.; SMNHTAU ● 2♂; Yizhar, between road and 'En Megunonim; 650–700 m a.s.l.; 5 Feb. 2015; L. Friedman leg.; SMNHTAU 202832, 202837.

Other material examined. ***A. alfkenelloides*** **Warncke s.s.: HOLOTYPE: GREECE** ● 1♀; Trikala; 17 Apr. 1962; Kl. Warncke leg.; OLML. – **(*A. floricola* Eversmann): BULGARIA** ● 1♀; Blagoevgrad, Igralishte, 1.6 km E of Igralishte; 800 m a.s.l.; 26 May 2024; T. Wood leg.; BOLD accession no. NATBE136-25; RMNH RMNH.INS.1152541 ● 1♀; Blagoevgrad, Katuntsi, 2.6 km ESE of Katuntsi; 300 m a.s.l.; 25 May 2024; T. Wood leg.; BOLD accession no. NATBE098-25; RMNH RMNH.INS.1152479 ● 1♀; ibid.; BOLD accession no. NATBE099-25; RMNH RMNH.INS.1152481. – **FRANCE** ● 1♂; Chorges, Les Bernards; 29 Jun. 2020; T.J. Wood leg.; BOLD accession no. WPATW054-21; TJWC. – **GREECE** ● 1♀; Eastern Macedonia and Thrace, Kavala, Chalkero, 1.25 km S; 40.9669° N 24.4734° E; 26 May 2023; T. Wood leg.; BOLD accession no. WPATW1285-23; TJWC ● 1♂; ibid.; BOLD accession no. WPATW1284-23 ● 1♂; Peloponnese, Mount Maenalon, 4.5 km NW Kardaras; 1600 m a.s.l.; 4 Apr. 2024; T. Wood leg.; BOLD accession no. NATBE055-25; RMNH RMNH.INS.1152407 ● 1♀; Western Macedonia, Anatoliko, 6.3 km E, Church of the Holy Apostles; 1000 m a.s.l.; 15 Jun. 2024; T. Wood leg.; BOLD accession no. NATBE094-25; RMNH RMNH.INS.1152473 ● 1♀; ibid.; BOLD accession no. NATBE095-25; RMNH RMNH.INS.1152474 ● 1♀; ibid.; BOLD accession no. NATBE096-25; RMNH RMNH.INS.1152475 ● 1♀; ibid.; BOLD accession no. NATBE097-25; RMNH RMNH.INS.1152476.

3.1.2.3. *Andrena* (*Micrandrena*) *alshaykh* Pisanty sp. nov.

https://zoobank.org/4E085EC4-EC50-4B37-95AD-A3E7C4-4795ED

Figures 3, 15B, K, 20L

Etymology. Named after the Arabic name of Mount Hermon, Jabal al-Shaykh ('Mountain of the Sheikh'). The species epithet is a noun in apposition.

Diagnosis. Within the *Andrena minutula* species group, *A. alshaykh* belongs to the species around *A. rugulosa* Stöckhert, characterized by a smooth clypeus and punctate terga, which include also *A. lindbergella* Pittioni and *A. libanica* Wood **sp. nov.** It is closest to *A. lindbergella* Pittioni from Cyprus, and until the discovery of the distinct male of *A. lindbergella*, they were considered conspecific. The female differs from *A. lindbergella* in the tergal discs which are more strongly shagreened and more obscurely punctured (Fig. 15K, L), and in the brighter terminal fringe. The male is easily differentiated by the genital capsule, in which the gonostyli suddenly converge medially, producing distinct kinks in the inner and outer margins (uniformly curving in *A. lindbergella*), and the penis valves are broader (Fig. 20L, N). In addition, the scutum is more sparsely punctured, and the body size is smaller. Both *A. alshaykh* and *A. lindbergella* are closely related to *A. rugulosa* Stöckhert (absent from the Levant) and *A. libanica* Wood **sp. nov.**, but differ in the smoother scutum and more weakly punctured terga (Fig. 15J–L). In addition, the male of *A. rugulosa* does not have dorsal gonocoxite lobes, and the male of *A. libanica* does not have kinks in the inner and outer margin of the gonostyli (Fig. 20L–N).

Description. FEMALE. ***Body length:*** 6.5–7.5 mm. ***Integumental colour:*** Body and legs black. Anterior side of flagellum greyish-black to slightly reddish. Apical tarsomeres brown. Wings weakly infuscate, veins brown, stigma brown peripherally, reddish centrally (Fig. 3A). Tergal marginal zones brown near apical margin (Fig. 3D). — ***Pubescence:*** Body hair mostly short to medium-lengthed, minutely plumose, white to brown (Fig. 3A). Clypeus with sparse medium-lengthed whitish hairs (Fig. 15B). Area around antennal sockets with dense medium-lengthed white hair. Scape with dense short to medium white hair. Vertex with medium-lengthed erect whitish-golden hair. Genal area with dense short hair, whitish-golden dorsally, white ventrally. Facial fovea with dense, minute white to slightly yellowish hair, colour depending on angle of view (Fig. 3B, C). Periphery of scutum, scutellum and metanotum with moderately dense, erect, short to medium, golden-brown hair. Scutal disc with sparse and thin, medium-lengthed, golden-brown hair (Fig. 3C). Mesepisternum with sparse, long white hair. Propodeal corbicula incomplete, dorsal fringe consisting of dense and long, distinctly plumose golden hair. Corbicular surface with sparse and long, simple golden hairs. Leg hair short, whitish to brownish. Flocculus incomplete, white. Femoral scopa composed of long, simple to coarsely plumose golden hair. Tibial scopa weakly developed, composed of medium-lengthed, simple whitish–brownish hair (Fig. 3A). Tergal discs essentially hairless. Tergal marginal zones 2–4 with distinct, strongly interrupted apicolateral white hair bands, slightly protruding onto following tergal discs. Terminal fringe light brown (Fig. 3A, D). — ***Head:*** 1.2 times broader than long. Mandibles bidentate, weakly crossed. Galea finely shagreened. Labral process narrowly trapezoidal to triangular. Malar area undeveloped. Clypeus moderately arched, apically shiny and more or less smooth, basally gradually more shagreened; punctation distinct, distance between punctures 1–3 puncture diameters, puncture density decreasing medioapically, an impunctate midline is not indicated (Fig. 15B). Lower part of paraocular area smooth and shiny, strongly and densely punctured. Supraclypeal area and lateral parts of frons with strong longitudinal striations, interspersed with strong and dense, fine punctures. Centre of frons with weaker and finer oblique striations, medial carina not reaching frontal ocellus, punctation similar. Flagellomere 1 1.0–1.1 times as long as 2+3 (Fig. 3B). Facial foveae shallow, elongate and more or less uniformly narrow, extending from level of lower end of lateral ocellus to slightly above clypeus base, fovea width equals ⅓ antennocular distance. Distance of fovea from lateral ocellus equals 1.8 ocellus diameters. Vertex moderately carinate. Ocelloccipital distance slightly shorter than 1 ocellus diameter (Fig. 3B, C). — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Anterior ⅓ of scutum finely shagreened, disc shiny and more or less smooth. Scutal punctation dense and strong, distance between punctures 0.5–1 puncture diameters. Scutellum smooth, punctation similar (Fig. 3C). Anterior part of mesepisternum finely rugose-areolate, posterior part shagreened. Propodeal corbicula finely reticulated, with a few very large crater-shaped punctures around hair bases. Basal half of propodeal triangle very coarsely rugose-areolate, apical half and flanking propodeal regions much more finely so (Fig. 3C). Hind pretarsal claw with strong inner tooth. Recurrent vein 1 meets submarginal cell 2 more or less near its middle. Nervulus interstitial (Fig. 3A). — ***Metasoma:*** Tergal discs shagreened, with moderately strong, irregular punctation, distance between punctures 1–2 puncture diameters at densest parts, punctation much finer on tergum 4. Tergal marginal zones broad, on tergum 4 covering about ¾ tergum length medially, marginal zones shagreened except near apex, very weakly and finely punctured (Fig. 3D). Pygidial plate simple, central area not elevated. — **MALE.** ***Body length:*** 5.5–6 mm. — ***Integumental colour:*** Body and legs black. Flagellum dark brown to black. Apical tarsomeres brown. Wings hyaline, veins brown, stigma light brown centrally (Fig. 3E). Tergal marginal zones yellowish-brown (Fig. 3H). — ***Pubescence:*** Body hair mostly minutely plumose, brightly coloured (Fig. 3E). Face with medium to long white hair, dense on lower half and on scape, sparser on upper half. Vertex with medium-lengthed erect whitish hair. Genal area with

Figure 3. *Andrena alshaykh* Pisanty **sp. nov. A** Female habitus; **B** female head; **C** female vertex and mesosoma; **D** female metasoma; **E** male habitus; **F** male head; **G** male vertex and mesosoma; **H** male metasoma.

dense white hair, becoming longer ventrally (Fig. 3E–G). Scutum, scutellum and metanotum with sparse, medium to long, whitish to yellowish erect hairs. Mesepisternum with dense, very long white hair. Propodeum with sparse, long white hair (Fig. 3E, G). Legs with short to medium, white to golden hair (Fig. 3E). Tergal discs with minute

inconspicuous white hair. Tergal marginal zones 2–5 with strongly interrupted apicolateral white hair bands. Terminal fringe whitish (Fig. 3E, H). — ***Head:*** Labral process very narrowly trapezoidal, apical half thickened, apical margin strongly concave. Clypeus weakly arched, smooth and shiny except near base, distinctly punctured, distance between punctures about 1 puncture diameter, without impunctate midline, clypeal sculpture hidden by dense pubescence. Flagellomere 1 slightly shorter than 2+3, 2 shorter than 3 (Fig. 3F). Ocelloccipital distance about 1 ocellus diameter (Fig. 3G). Rest of head as in female. — ***Mesosoma:*** Scutum and scutellum very shiny, superficially shagreened, occasionally smooth centrally, distinctly punctured, distance between punctures 1–3 puncture diameters (Fig. 3G). Nervulus interstitial to antefurcal (Fig. 3E). Rest of mesosoma as in female. — ***Metasoma:*** Similar to female, but tergal disc punctation finer and more uniform, distance between punctures about 1.5 puncture diameters. Tergal marginal zones narrower than in female (Fig. 3H). — ***Genitalia and hidden sterna:*** Dorsal gonocoxite lobes developed, converging apically, more or less rounded. Penis valves moderately broad basally, gradually tapering up to mid-length, hereafter uniformly narrow. Gonostyli finger-shaped, with a distinct kink in mid-length, where they are slightly bent inwards. Sternum 8 simple, columnar, slightly broadening apically, apical process undeveloped (Fig. 20L).

Distribution and habitat. Sub-alpine habitats in northern Israel (Mt. Hermon) and Lebanon, likely also Syria, above 1900 m. Previously reported from Israel and Lebanon as *A. lindbergella* (Pisanty et al. 2018; Wood et al. 2020; Boustani et al. 2021).

Flight period. Mid-May to early July.

Flower records. Collected from Brassicaceae (*Alyssum*).

Type material. HOLOTYPE: ISRAEL ● 1♀; Har Hermon [Mount Hermon]; [approx. 33.315° N 35.810° E]; 2200 m a.s.l.; 27 May 1999; A. Freidberg leg.; SMNHTAU. – **PARATYPES: ISRAEL** ● 2♀; 'Emeq Eshhar, Plot E7; 33.304° N 35.790° E; 2048 m a.s.l.; 21 Jun. 2019; A. Dorchin & T. Roth leg.; SMNHTAU 309522, 309523 ● 1♀; Har Hermon; 2200 m a.s.l.; 27 May 1999; A. Freidberg leg.; SMNHTAU ● 1♀; Har Hermon; 33.3027° N 35.7855° E; 2020 m a.s.l.; 15 May 2016; G. Pisanty leg.; SMNHTAU 242148 ● 1♀; ibid.; BOLD accession no. ANDIL247-22; SMNHTAU 242147 ● 1♀; ibid.; 33.304° N 35.7875° E; SMNHTAU 242308 ● 3♀; Har Hermon; 33.309° N 35.792° E; 1950 m a.s.l.; 15 May 2016; G. Pisanty leg.; pan trap; SMNHTAU 242178 to 242180 ● 1♂; ibid.; SMNHTAU 242183 ● 1♂; ibid.; RMNH ● 1♂; ibid.; BOLD accession no. ANDIL432-25; SMNHTAU 242184 ● 1♀; Hermon; 2000 m a.s.l.; 27 Jun. 1973; D. Furth leg.; SMNHTAU ● 1♀; Hermon NR, Sheluhat Duvdevan, Plot E1; 33.315° N 35.797° E; 2124 m a.s.l.; 29 May 2019; A. Dorchin leg.; SMNHTAU 306321 ● 1♀; Hermon NR, Sheluhat Duvdevan, Plot E6; 33.314° N 35.791° E; 2076 m a.s.l.; 29 May 2019; A. Dorchin leg.; SMNHTAU 306277 ● 2♂; Mt. Hermon; 2000 m a.s.l.; 22 May 1973; D. Furth leg.; SMNHTAU ● 1♀; ibid.; 7 Jul. 1987; A. Freidberg leg.; SMNHTAU ● 4♀,2♂; ibid.; 25 May 1988; I. Yarom leg.; SMNHTAU ● 2♀; ibid.; OLML ● 2♀; ibid.; RMNH ● 3♀; Mt. Hermon, Giv'at Tziv'oni; "Isr. Grid: 22413019"; 2200 m a.s.l.; 14 May 1991; C. O'Toole leg.; on *Alyssum baumgartnerianum*; SMNHTAU. – **LEBANON** ● 1♀; Bsharri Distr., El-Arz; 2000 m a.s.l.; 12 May 2023; V. Soon leg.; TUZ 341882 ● 1♀; North Governorate, Bcharre, El-Arz; ibid.; TUZ 341874.

3.1.2.4. *Andrena* (*Micrandrena*) *aphroditae* Pisanty sp. nov.

https://zoobank.org/1A4CBEDF-BEBE-49AF-AB1C-49502B-581F7D

Figures 4, 18B, H, 21I

Etymology. Named after the Greek goddess Aphrodite, who is strongly associated with the island of Cyprus.

Diagnosis. Within the *Andrena minutula* species group, *A. aphroditae* belongs to the species around *A. spreta* Pérez, which are characterized in the female by a clypeus which is non-rugose, weakly domed and partly to fully shagreened, a scutum which is shagreened to partly smooth, with fine, relatively sparse punctures, and terga which are mostly shagreened and impunctate. In the Levant and Cyprus, these include *A. hebraica* Pisanty & Wood **sp. nov.**, *A. minutuloides* Perkins, *A. spreta*, *A. tiaretta* Warncke, and *A. tkalcui* Gusenleitner & Schwarz. Female *Andrena aphroditae* are distinguished from *A. hebraica* and *A. tiaretta* by the scutum and scutellum which are usually somewhat shiny and distinctly punctured (completely dull in *A. hebraica*; dull and weakly punctured in *A. tiaretta*; Figs 17J, 18H), and the terga which are uniformly shagreened (tergum 3 and often also 2 distinctly shinier apically vs. basally in *A. hebraica*). From Cypriot populations of *A. spreta* Pérez, female *A. aphroditae* can be distinguished by the clypeus which is more strongly domed and usually completely dull (Fig. 18B; usually smooth apically in *A. spreta*), dark flagellum (Fig. 4B; often reddish distally in *A. spreta*), usually shiny scutellum (usually dull in *A. spreta*; Figs 17K, 18H), brown stigma (yellowish in *A. spreta*; Figs 4A, 17M), and dark brown terminal fringe (Fig. 4A, D; golden in Cypriot *A. spreta*). Continental populations of *A. spreta* are much more morphologically variable, but on average they differ from *A. aphroditae* by the same characters, most of all in the clypeus and stigma. Compared to *A. minutuloides*, female *A. aphroditae* has weaker and much finer punctation on the clypeus (Fig. 18B, C), as well as somewhat weaker, finer and denser punctation on the scutum (Fig. 18H, I). Separation from female *A. tkalcui* is easily done by the much darker colouration of the flagellum and wing veins (Fig. 17L), as well as the more strongly shagreened scutum (Figs 17H, 18H) and weaker tergal apical hair bands. From the sympatric *A. cervina* Warncke, female *A. aphroditae* can be distinguished by the clypeus which is densely and finely punctured, often with hints of transverse striation on the basal half (more sparsely and coarsely punctured, without any transverse striation in *A. cervina*; Figs 18A, B), and the scutum and scutellum, which are usually somewhat shiny, distinctly and not very

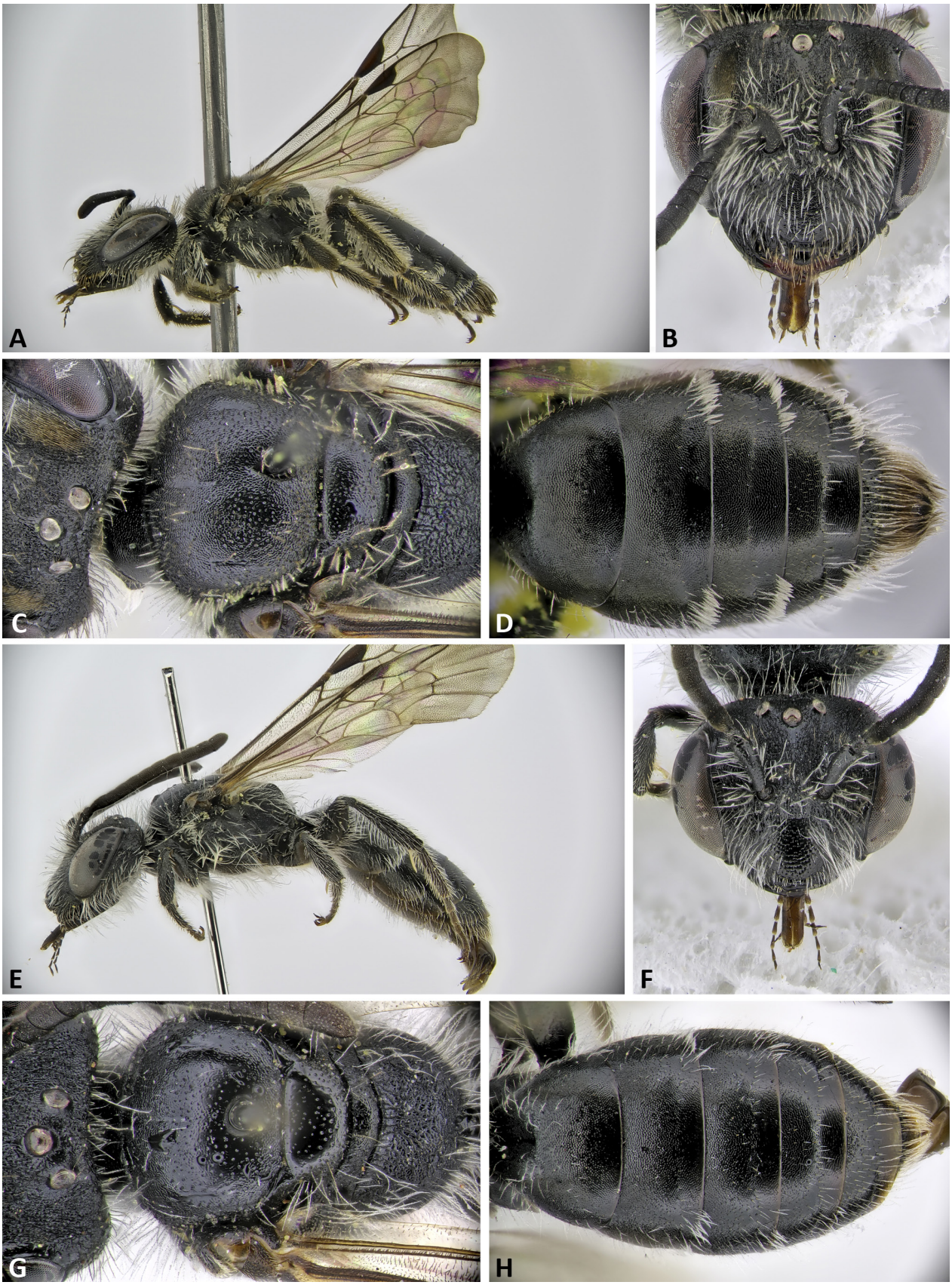

Figure 4. *Andrena aphroditae* Pisanty **sp. nov. A** Female habitus; **B** female head; **C** female vertex and mesosoma; **D** female metasoma; **E** male habitus; **F** male head; **G** male vertex and mesosoma; **H** male metasoma.

densely punctured (completely dull, superficially and very densely punctured in *A. cervina*; Figs 18G–H). The male genitalia (Fig. 21I) provides good separation from all the above related species: the gonocoxites of *A. spreta* and *A. tkalcui* possess a distinct dorsal lobe (Fig. 20F, J), the gonostyli of *A. hebraica* and *A. tiaretta* strongly

converge apically (Fig. 21G, J), the gonostyli of *A. cervina* have a strong inward kink near the apex (Fig. 20O), and the penis valves of *A. minutuloides* and *A. tiaretta* are broader (Fig. 21F, G). The males are further easily differentiated from *A. spreta* by the much smoother scutum and scutellum (Fig. 4G) and the darker flagellum and stigma (Figs 4E, F, 17M).

Description. FEMALE. ***Body length:*** 5–6.5 mm. ***Integumental colour:*** Body and legs black. Flagellum black, distal flagellomeres increasingly covered with minute greyish setae. Distal tarsomeres black to dark brown. Wings weakly infuscate, veins dark brown, stigma centrally dark to light brown (Fig. 4A). Tergal marginal zones black (Fig. 4D). — ***Pubescence:*** Clypeus with moderately dense, semi-erect, short and thin whitish hairs, underlying cuticle visible. Apex of clypeus with two small strands of long brown hair. Supraclypeal area with short, erect whitish hairs. Paraocular area, scape and area around antennal sockets with moderately dense, erect medium-lengthed white hair (Fig. 4B). Facial fovea in dorsal view with light brown hairs on upper part of fovea, white hairs on lower half (Fig. 4C). Frons with sparse, short to medium, erect, mixed black and white hairs. Ocellar triangle with few erect medium-lengthed black hairs. Preoccipital ridge with erect, short to long, whitish to brownish hairs. Genal area with few short black hairs behind upper margin of compound eye, elsewhere with semi-erect to erect whitish hairs, short on dorsal part, medium-lengthed on ventral part (Fig. 4A, C). Discs of scutum and scutellum with sparse, inconspicuous minute to short whitish hairs, with few scattered longer erect hairs. Periphery of scutum with moderately dense, erect short whitish hairs. Posterior margin of scutellum with few erect, medium to long, whitish to brown hairs (Fig. 4C). Mesepisternum with long white hairs. Propodeal corbicula incomplete, posterodorsal fringe composed of long white plumose hairs, corbicular surface with few long, simple white hairs. Leg hair white to light brown, flocculus incomplete, white, tibial scopa composed of simple hairs, brownish posterobasally, elsewhere whitish (Fig. 4A). Tergal discs 1–2 centrally essentially hairless, 3–4 gradually with minute inconspicuous whitish hairs. Lateral parts of tergal discs with sparse short white hair. Tergal marginal zones 2–4 with distinct lateral bands of white hair extending onto following tergal discs, strong and dense on terga 2–3, weaker on tergum 4. Terminal fringe brownish, with few flanking white hairs (Fig. 4D). — ***Head:*** 1.25 times broader than long. Mandibles bidentate, moderately crossed. Galea very finely shagreened (Fig. 4B). Labral process trapezoidal, not much broader than long. Clypeus moderately domed, basal half fully shagreened and matt, often with hints of fine transverse striations, apical half fully shagreened and matt to partly shagreened and weakly shiny. Clypeus punctation moderately strong, distance between punctures 0.5–1.5 puncture diameters, without impunctate midline (Figs 4B, 18B). Frons and upper part of paraocular area densely longitudinally striated, essentially impunctate (Fig. 4B, C). Flagellomere 1 0.9–1.0 times as long as 2+3, 2 almost as long as 3 (Fig. 4B). Facial fovea moderately broad above, here 0.4–0.5 times as broad as antennocular distance, weakly tapering below, extending from level of lower end of lateral ocellus to base of clypeus, lower ⅔ separated from compound eye by narrow smooth cuticular strip (Fig. 4B, C). Distance of fovea from lateral ocellus about 1.5 ocellus diameters. Ocelloccipital distance about ¾ ocellus diameter. Preoccipital ridge weakly to moderately carinate (Fig. 4C). — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Scutum largely shagreened, usually with some shiny, partly smooth areas centrally, punctation fine, distance between punctures 0.5–1.5 puncture diameters. Scutellum similar but usually shinier, often completely smooth (Figs 4C, 18H). Mesepisternum finely alveolate, anterior part overlayed with oblique punctures. Surface of propodeal corbicula reticulated, with sparse, coarse punctures around hair bases. Posterolateral part of propodeum finely rugose-areolate. Propodeal triangle weakly delineated, horizontal part strongly radially rugose near base, elsewhere rugose-areolate, vertical part very finely areolated (Fig. 4C). Hind pretarsal claw with small inner tooth. Recurrent vein 1 meets submarginal cell 2 at its middle or slightly proximal to it. Nervulus interstitial (Fig. 4A). — ***Metasoma:*** Tergal discs impunctate, 1–2 and usually 3 completely shagreened and matt, 4 and occasionally 3 slightly shinier and more weakly shagreened. Tergal marginal zones weakly depressed, 2–3 centrally occupying 0.4–0.5 of tergal length, shagreening as on discs, much weaker on tergum 4 (Fig. 4D). Pygidial plate triangular, completely flat, smooth to superficially shagreened. — **MALE.** ***Body length:*** 5–5.5 mm. — ***Integumental colour:*** As in female, but tergal marginal zones somewhat brownish (Fig. 4E, H). — ***Pubescence:*** Clypeus with moderately dense, semi-erect, short to medium white hair. Paraocular area with short to medium erect hair, black near compound eye, whitish near antennal sockets. Scape with medium-lengthed white hairs (Fig. 4F). Frons with short to medium, erect dark hairs. Preoccipital ridge with short to long erect white hairs. Genal area with erect black hair behind upper margin of compound eye, elsewhere with white hair, short dorsally, gradually long ventrally (Fig. 4E–G). Scutum and scutellum with sparse short whitish hair, some medium to long erect hairs appear mostly on periphery (Fig. 4G). Mesepisternum with very long white hairs (Fig. 4E). Propodeum with long white hairs (Fig. 4E, G). Femora and tibiae with white hair, tarsi with brownish-white hair (Fig. 4E). Base of tergal disc 1 and lateral parts of all tergal discs with sparse, short to medium white hair. Rest of tergal discs with minute inconspicuous whitish hair. Tergal marginal zones 2–4 with small lateral bands of white hair, extending onto following discs, very weak on tergum 4. Terminal fringe brownish-white (Fig. 4H). — ***Head:*** 1.25 times broader than long. Labral process much broader than long, apical margin usually concave. Clypeus moderately domed, very shiny and almost completely smooth, punctation strong and dense, distance between punctures 0.5–1.5 puncture diameters. Flagellomere 1 about as long as 3, much longer than 2 (Fig. 4F). Ocelloccipital distance about 1.1 ocellus diameters. Preoccipital ridge moder-

ately carinate (Fig. 4G). — ***Mesosoma:*** Scutum shiny, superficially shagreened to smooth, punctation fine and sparse, distance between punctures 1–3 puncture diameters. Scutellum similar, but smoother and more sparsely punctured. Propodeal triangle strongly rugose-areolate on horizontal part, very finely so on vertical part, usually becoming radially rugose near base (Fig. 4G). Hind pretarsal claw strongly bifurcated. Rest of mesosoma as in female. — ***Metasoma:*** As in female (Fig. 4H). — ***Genitalia and hidden sterna:*** Gonocoxites without dorsal lobe or with only hint thereof. Gonostyli simple, finger-shaped, uniformly broad, blade flattened, rounded apically. Penis valves moderately narrow basally, basal ⅕ of visible area parallel-sided, the following ⅗ tapering apically, distal ⅖ narrow (Fig. 21I). Sternum 8 columnar, broadening apically, apical margin blunted.

Distribution and habitat. Endemic to Mediterranean shrublands in Cyprus.

Flight period. Mid-February to mid-April.

Flower records. Collected from Asteraceae (*Glebionis*, *Helichrysum*), Brassicaceae (*Sinapis*), Cistaceae (*Cistus*) and Lamiaceae (*Lavandula*).

Type material. HOLOTYPE: CYPRUS ● 1♀; Pano Panagia env.; 34.921–928° N 32.631–640° E; [700–850 m a.s.l.]; 15 Apr. 2025; G. Pisanty leg.; SMNHTAU 467594. – **PARATYPES: CYPRUS** ● 1♀; Agia Erini; 11 Apr. [19]37; Mavromoustakis leg.; SMNHTAU ● 2♀; Akamas Pen.; 35.018–031° N 32.34–36° E; 7 Apr. 2025; G. Pisanty leg.; SMNHTAU 466866, 466867 ● 1♀; Akamas Pen.; 35.019–26° N 32.326–52° E; 8 Apr. 2025; G. Pisanty leg.; SMNHTAU 467010 ● 3♂; Larnaca [District], Larnaca Salt Lake; 1 m a.s.l.; 18 Feb. 2025; R. Santerre leg.; UMONS ● 2♂; Limassol [District], Anogyra; 468 m a.s.l.; 27 Mar. 2025; ibid. ● 4♀,3♂; Limassol, Arakapas, 2 km W from village; 454 m a.s.l.; 8 Mar. 2025; ibid. ● 1♂; Limassol, Palódia, Ayia Irini Monastry; 34.7441° N 32.976° E; 192 m a.s.l.; 7 Mar. 2024; R. Santerre leg.; on *Sinapis alba*; BOLD accession no. RSCMC032-25; UMONS ● 3♂; Limassol, Palodia, SE village; 257 m a.s.l.; 8 Mar. 2025; R. Santerre leg.; UMONS ● 1♀; Limassol, Parekklisia, 5 km N from village; 243 m a.s.l.; 14 Mar. 2025; ibid. ● 1♂; Moniatis; 34.870–82° N 32.877–92° E; 9 Apr. 2023; G. Pisanty leg.; BOLD accession no. ANDCY037-25; SMNHTAU 426933 ● 2♂; Nicosia [District], Agios Epifanios, 2.5 km S from village; 605 m a.s.l.; 9 Mar. 2025; R. Santerre leg.; UMONS ● 1♂; Nicosia, Agios Ioannis, NW village; 319 m a.s.l.; 9 Mar. 2025; ibid. ● 1♂; Nicosia, Athalassa Forest Park; 165 m a.s.l.; 14 Feb. 2025; ibid. ● 7♂; Nicosia, Lympia, 4 km E from village; 225 m a.s.l.; 14 Feb. 2025; ibid. ● 1♀,1♂; Nicosia, Lythrodontas, 1.5 km N from village; 428 m a.s.l.; 14 Mar. 2025; ibid. ● 1♂; Nicosia, Mosfiloti, 2 km N from village; 197 m a.s.l.; ibid. ● 1♀; Pano Panagia; 34.9213° N 32.6310° E; 15 Apr. 2025; G. Pisanty leg.; pan trap; SMNHTAU 467757 ● 2♂; ibid.; SMNHTAU 467675 ● 2♀,1♂; ibid.; OLML ● 2♀; Pano Panagia env.; 34.921–928° N 32.631–640° E; 12 Apr. 2025; G. Pisanty leg.; SMNHTAU 467284, 467322 ● 2♂; ibid.; SMNHTAU 467309, 467323 ● 3♀; ibid.; 15 Apr. 2025; SMNHTAU 467592, 467599, 467600 ● 1♂; Paphos [District], Evretou Dam; 239 m a.s.l.; 2 Mar. 2025; R. Santerre leg.; UMONS ● 1♂; Paphos, Neo Chorio, Botanical Garden; 47 m a.s.l.; ibid. ● 1♀; Pissouri; 34.662–6° N 32.687–98° E; 250 m a.s.l.; 14 Apr. 2023; G. Pisanty leg.; on Brassicaceae; SMNHTAU 427171 ● 2♀; Trimiklini; 34.85–6° N 32.91–3° E; 600–700 m a.s.l.; 11 Apr. 2023; G. Pisanty leg.; SMNHTAU 427055, 427057 ● 1♀; ibid.; BOLD accession no. ANDCY039-25; SMNHTAU 427023 ● 1♀; ibid.; BOLD accession no. ANDCY040-25; SMNHTAU 427056 ● 1♂; Sov.[ereign] Base Area, Dasaki Achnas, S from village; 57 m a.s.l.; 15 Feb. 2025; R. Santerre leg.; UMONS.

3.1.2.5. *Andrena* (*Micrandrena*) *aspera* Pisanty & Wood sp. nov.

https://zoobank.org/3722963C-C980-4AC5-84D1-43C1DC-F0821A

Figures 5, 16D, J, 21E

Etymology. Nominative feminine singular form of the Latin adjective *asper*, meaning rough, uneven, coarse, in reference to the species' integumental sculpturing.

Diagnosis. The female of *Andrena aspera* stands out among Levantine *Micrandrena* species by the combination of a labral process which is often weakly emarginate apically, distinctly domed clypeus with transverse striations and/or oblique punctures (Fig. 16D), dull, strongly roughened scutum with dense crater-like punctures (Figs 5C, 16J), and dull, shagreened terga which are subtly punctate apicolaterally (Fig. 5D). It is closest to species such as *A. simontornyella* Noskiewicz, *A. rugothorace* Warncke and *A. lunaris* Pisanty & Wood, but in all these species the scutum is more finely sculptured, with denser, finer and smoother punctation. Similar differences apply to the clypeus, which is more finely rugose in *A. simontornyella*, very densely, finely rugose in *A. rugothorace*, and non-rugose in *A. lunaris*.

Among Levantine *Micrandrena*, the male of *Andrena aspera* is characterized by the combination of a domed, very densely punctured clypeus covered by dense long white hair (Fig. 5F), scutum with some crater-punctures centrally (Fig. 5G), and penis valves which slightly broaden immediately above the visible base (Fig. 21E). It is very similar to *A. rugothorace*, but in the latter species the clypeus is more strongly transversely striated, and the gonocoxites have distinct dorsal lobes (Fig. 20R).

Description. FEMALE. ***Body length:*** 6.5–7.5 mm. — ***Integumental colour:*** Body and legs black. Distal flagellomeres brown to black (Fig. 5A). Wings weakly infuscate, veins brown, stigma centrally light brown (Fig. 5E). Tergal marginal zones black basally, more brownish apically (Fig. 5D). — ***Pubescence:*** Head and mesosoma with distinctly plumose hair of varying brightness (Fig. 5A–C). Lower half of face, up to level of antennal sockets, with dense, moderately long, semi-erect brownish-white hair (Fig. 5B). Paraocular area usually with erect black hairs near facial fovea, elsewhere with brownish-white hairs (Fig. 5A, B). Scape with brownish-white hairs (Fig. 5B). Hair on upper half of facial fovea distinctly brown, on lower half brown to whitish, depending on angle of view. Frons and ocellar triangle with sparse

golden hairs, often interspersed with black hairs (Fig. 5B, C). Preoccipital ridge with long, erect golden hairs. Genal area behind upper margin of compound eye with few short black hairs, elsewhere with short to medium, golden to whitish hairs (Fig. 5A–C). Scutum, scutellum and metanotum with moderately dense, erect, golden-brown hairs of varying length, their density increasing peripherally, underlying cuticle visible (Fig. 5A, C). Mesepisternum with dense, long whitish hairs, becoming slightly golden dorsally. Propodeal corbicula incomplete, dorsoposterior fringe whitish, corbicular surface with sparse, long simple whitish hairs. Leg hair mostly whitish; flocculus incomplete, white; tibial scopal hairs simple, whitish (Fig. 5A). Terga centrally with inconspicuous minute hair, laterally with sparse medium-lengthed whitish hair, creating weak, broadly interrupted hair bands on marginal zones 2–3, and a very weak and sparse continuous hair band on marginal zone 4. Terminal fringe golden to light brown, flanked by few long white hairs (Fig. 5A, D). — ***Head:*** 1.2 times broader than long. Mandibles bidentate, moderately crossed. Galea finely shagreened (Fig. 5B). Labral process rectangular, moderately broad, apical margin weakly concave. Clypeus distinctly domed, fully shagreened and matt, punctation oblique, distance between punctures 0.5–1 puncture diameter, without impunctate midline, punctures appearing connected by subtle transverse striation (Fig. 16D). Lower part of paraocular area with strongly oblique punctures merging into striation. Supraclypeal area finely striated. Flagellomere 1 1.0–1.1 times as long as 2+3, 2 slightly shorter than 3 (Fig. 5B). Frons and upper part of paraocular area rugose-areolate, sculpturing becoming coarser centrally. Facial foveae of moderate width, upper half slightly broader, here 0.5 times as broad as antennocular distance, fovea extending from level of lower end of lateral ocellus to base of clypeus or slightly below, separated from compound eye by very narrow cuticular strip which slightly broadens on the lower half. Frons with complete, shiny medial carina, lower side of frontal ocellus surrounded by polished cuticular area (Fig. 5B, C). Lateral ocelli connected posteriorly by a transverse furrow. Distance of fovea from lateral ocellus about 2 ocellus diameters (Fig. 5B, C). Ocelloccipital distance about 1 ocellus diameter. Vertex moderately carinate (Fig. 5C). — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Scutum entirely with strong granular shagreening, punctation fine, dense and strong, distance between punctures 0.5–1 puncture diameters, punctation often appearing oblique especially on anterior part, with some punctures displaying raised margins (crater-like punctures). Scutellum similar but with straight punctation, often somewhat shinier and more sparsely punctured (Figs 5C, 16J). Mesepisternum finely alveolate, overlayed by strongly oblique, dense punctation. Surface of propodeal corbicula finely alveolate, with a few large punctures around hair bases. Posterior part of propodeum strongly differentiated into horizontal vs. vertical regions. Posterolateral area of propodeum rugose-areolate. Propodeal triangle weakly demarcated, horizontal part rugose-areolate, often more radially rugose near base, vertical part finely alveolate (Fig. 5C). Hind pretarsal claw with small inner tooth. Recurrent vein 1 meets submarginal cell 2 proximal to its middle. Nervulus antefurcal to interstitial (Fig. 5E). — ***Metasoma:*** Tergal discs finely shagreened, basolaterally with raised oblique punctures, elsewhere more or less impunctate. Tergal marginal zones shagreened and impunctate, moderately arched, 2–3 centrally occupying about half the tergum length, 2 hardly depressed, the following gradually more so (Fig. 5D). Pygidial plate normally developed. — **MALE.** ***Body length:*** 5.5–6.5 mm. — ***Integumental colour:*** As in female (Fig. 5E). — ***Pubescence:*** Clypeus and lower part of paraocular area with dense and long, semi-erect whitish plumose hairs. Supraclypeal area, scape and area around antennal sockets with medium to long erect whitish hairs. Dorsolateral part of paraocular area bordering compound eyes with erect black hairs (Fig. 5E, F). Frons and ocellar triangle with sparse erect hairs of varying brightness. Preoccipital ridge with long, erect whitish to golden hairs (Fig. 5F, G). Dorsal part of genal area with short black hair, central and ventral parts with white hair, becoming longer ventrally (Fig. 5E, F). Scutum, scutellum and metanotum with medium to long erect whitish hair, denser peripherally, underlying cuticle visible (Fig. 5E, G). Mesepisternum with very long, erect plumose white hair (Fig. 5E). Propodeum with long, plumose white hair (Fig. 5E, G). Leg hair mostly white, tarsal hair often with some weak golden reflections (Fig. 5E). Tergal discs laterally with moderately dense, short to medium whitish hair, densest and longest on tergum 2, hair becoming short and inconspicuous towards centre of disc. Tergal marginal zones 2–3 with weak and sparse, broadly interrupted white hair bands; 4–5 with continuous, very weak and sparse whitish hair bands. Terminal fringe whitish (Fig. 5H). — ***Head:*** 1.25 times broader than long. Labral process moderately broad, rectangular, apical margin usually concave. Clypeus domed, entire surface with almost confluent honeycomb-like punctation, distance between punctures less than 0.5 puncture diameter, clypeal sculpture hidden by dense pubescence. Flagellomere 1 longer than 3 but shorter than 2+3, 2 distinctly shorter than 3 (Fig. 5F). Upper part of paraocular area longitudinally striated. Frons finely rugose-areolated. Ocelloccipital distance about 1.4 ocellus diameters. Preoccipital ridge carinate (Fig. 5G). — ***Mesosoma:*** As in female, but scutum usually more sparsely punctured, distance between punctures 0.5–2 puncture diameters (Fig. 5G). Hind pretarsal claw bifurcated. — ***Metasoma:*** Tergal discs with strong granular shagreening, centrally with only hint of minute punctures, laterally slightly more distinctly punctate, though here partly obscured by dense overlying pubescence. Tergal marginal zones moderately depressed, finely reticularly shagreened, impunctate (Fig. 5H). — ***Genitalia and hidden sterna:*** Apical margin of gonocoxite very slightly protruding medially, weakly rounded to almost truncate. Gonostyli broad and elongate, blade flattened, inner margin slightly broadening and curving dorsally at about 0.4 gonostylus length. Penis valves narrow, slightly but distinctly broadening close to visible base (Fig. 21E). Sternum 8 columnar, distinctly broadening apically, apical margin rounded.

Figure 5. *Andrena aspera* Pisanty & Wood **sp. nov. A** Female habitus; **B** female head; **C** female vertex and mesosoma; **D** female metasoma; **E** male habitus; **F** male head; **G** male vertex and mesosoma; **H** male metasoma.

Distribution and habitat. Mediterranean shrublands in Israel, the West Bank and Lebanon. Previously reported from Lebanon as *A. simontornyella* ssp. *corpana* (Wood et al. 2020; Boustani et al. 2021).

Flight period. Mid-February to early April, with rare records until mid-May.

Flower records. Collected on Apiaceae (*Daucus*, *Ferula*, *Scandix*), Asteraceae (*Anthemis*, *Leontodon*) and Brassicaceae (*Diplotaxis*, *Isatis*, *Sinapis*).

Type material. HOLOTYPE: ISRAEL ● 1♀; Har Ahino'am [Mount Gilboa, Har Ahino'am]; 32.502–6° N 35.408–14° E; 440 m a.s.l.; 3 Mar. 2025; G. Pisanty leg.; SMNHTAU 463986. – **PARATYPES: ISRAEL** ● 1♀; Agur; 28 Feb. 2021; A. Eliyahu leg.; SMNHTAU 380374 ● 1♀; Bar'am; 1 Apr. 2016; O. Winberger leg.; SMNHTAU 251858 ● 3♂; Ben Shemen Forest; 31.93° N 34.972° E; 18 Feb. 2017; G. Pisanty leg.; SMNHTAU 268571, 268573, 268574 ● 1♂; ibid.; RMNH ● 1♀; Bet Guvrin; 28 Mar. 2010; G. Pisanty leg.; pan trap; SMNHTAU 60321 ● 3♂; Bet-Oren; 16 Feb. 1990; R. Kasher leg.; SMNHTAU 353489 to 353491 ● 1♂; Buraiqa Nat[ure]Reserve; 32.5413° N 34.979° E; 15 Feb. 2021; G. Pisanty leg.; SMNHTAU 356737 ● 2♀; Carmel, Har Telalim; 32.757° N 35.0245° E; 440 m a.s.l.; 16 Mar. 2025; G. Pisanty leg.; SMNHTAU 464572, 464575 ● 1♂; ELLA JUN. [HaEla Junction]; [?] Feb. 1984; E. Shney Dor leg.; SMNHTAU 353456 ● 1♀; Gal'on; 4 Apr. 2018; T. Roth leg.; on *Sarcopoterium spinosum*; SMNHTAU 290441 ● 1♂; Haifa; 26 Feb. 1977; A. Freidberg leg.; SMNHTAU 353482 ● 5♀; Har Ahino'am; 32.502–6° N 35.408–14° E; 440 m a.s.l.; 3 Mar. 2025; G. Pisanty leg.; SMNHTAU 463976, 463985, 463989, 463991, 463993 ● 4♂; ibid.; SMNHTAU 463938, 464002, 464004, 464008 ● 2♂; ibid.; NHMUK ● 2♂; ibid.; ZMB ● 3♀; ibid.; 32.5035° N 35.413° E; 438 m a.s.l.; pan trap; SMNHTAU 463886, 463889, 463890 ● 5♂; ibid.; SMNHTAU 463875, 463884, 463888, 463893, 463895 ● 2♂; ibid.; OLML ● 2♂; ibid.; RMNH ● 1♂; Har HaRuah; 31.82° N 35.08–10° E; 6 Mar. 2017; G. Pisanty leg.; SMNHTAU 268850 ● 1♀; HAR SHANA (CARMEL) [?Mount Carmel]; 25 Mar. 1989; Kugler leg.; SMNHTAU 353584 ● 1♂; Har Telalim, Horshat Ha'arba'im; 32.755° N 35.03° E; 22 Feb. 2019; G. Pisanty leg.; SMNHTAU 321556 ● 4♀; Hare Gilboa', Har Ahino'am; 32.502° N 35.414° E; 450 m a.s.l.; 23 Feb. 2012; L. Friedman leg.; SMNHTAU 118568, 118573, 118574, 118599 ● 6♂; ibid.; SMNHTAU 118567, 118569, 118571, 118598, 118605, 118607 ● 1♀; Har'el; 21 Feb. 2020; K. Levy leg.; SMNHTAU 338406 ● 1♂; ibid.; T. Roth leg.; on *Leontodon tuberosus*; SMNHTAU 338323 ● 2♀; ibid.; SMNHTAU 338330, 338429 ● 1♀; ibid.; on *Sinapis arvensis*; SMNHTAU 338241 ● 1♀; ibid.; on *Isatis lusitanica*; SMNHTAU 338342 ● 3♀; Horbat Kefar Lakhish; 31.575° N 34.8532° E; 5 Mar. 2021; G. Pisanty leg.; sweep; SMNHTAU 358858 to 358860 ● 1♂; ibid.; SMNHTAU 358856 ● 1♀; Horbat Raqqit; 8 Mar. 2010; G. Pisanty leg.; on *Scandix* sp.; SMNHTAU 31711 ● 1♀; Karmei Yosef; 22 Mar. 2018; T. Roth leg.; on *Anthemis*; SMNHTAU 291755 ● 1♀; Kefar Giladi N; 30 Mar. 1997; R. Kasher leg.; SMNHTAU 353757 ● 3♀; Kefar Giladi S; 25 Mar. 1997; R. Kasher leg.; SMNHTAU 353754, 366411, 402795 ● 2♀; ibid.; RMNH ● 1♂; ibid.; 27 Mar. 1997; SMNHTAU 353554 ● 2♂; ibid.; OLML ● 4♀; ibid.; 30 Mar. 1997 ● 1♂; ibid.; SMNHTAU 353551 ● 4♂; Kefar Uriyya-Tarum; 31.78–80° N 34.95–97° E; 25 Feb. 2017; G. Pisanty leg.; SMNHTAU 268513 to 268516 ● 3♀; Kokhav Ya'ir, Ya'ar Sappir; 32°13.9' N 34°59.5' E; 160 m a.s.l.; 16 Feb. 2010; L. Friedman leg.; SMNHTAU 47493, 47499, 47504 ● 1♀; ibid.; BOLD accession no. ANDIL505-25; SMNHTAU 47494 ● 1♂; ibid.; A. Freidberg leg.; SMNHTAU 47386 ● 1♀; Malkiyya; 10 Apr. 2014; O. Winberger leg.; SMNHTAU 183521 ● 2♀; Me'arat Yishah, 0.5km E; 32.718° N 35.007° E; 22 Feb. 2019; G. Pisanty leg.; SMNHTAU 321571, 321687 ● 10♂; ibid.; SMNHTAU 321566, 321568, 321574, 321582, 321585, 321591, 321593 to 321595, 321685 ● 1♂; ibid.; BOLD accession no. ANDIL465-25; SMNHTAU 321618 ● 2♀; Mt. Carmel 2km SE Haifa Univ.[ersity]; 24 Mar. 1990; A. Dafni leg.; SMNHTAU 353634, 353680 ● 2♀; Nahal Dishon; 1 Apr. 1991; R. Kasher leg.; SMNHTAU 353740, 353743 ● 4♂; Nahal 'Iyyon Reserve, HaTanur; 22 Feb. 2002; A. Freidberg leg; SMNHTAU 353523 to 353525, 353527 ● 5♀; Nahal Maresha; 31.577° N 34.858° E; 220 m a.s.l.; 15 Mar. 2021; G. Pisanty leg.; sweep; SMNHTAU 359320 to 359324 ● 1♀; ibid.; RMNH ● 1♂; ibid.; SMNHTAU 359299 ● 1♂; Nahal Sa'ar, N Golan Height; 30 Mar. 1997; R. Kasher leg.; SMNHTAU 353548 ● 1♀; Nahal Zilzal; 31.7° N 35.03° E; 25 Feb. 2019; G. Pisanty leg.; SMNHTAU 321742 ● 1♂; ibid.; SMNHTAU 321753 ● 1♀; Nahshon junction; 9 Mar. 2017; T. Roth leg.; SMNHTAU 274133 ● 1♀; ibid.; BOLD accession no. ANDIL447-25; SMNHTAU 274084 ● 3♂; ibid.; SMNHTAU 274088, 274098, 274146 ● 1♀; Nahshonim; 4 Apr. 2023; S. Asis leg.; SMNHTAU 414776 ● 2♀; Netiv Halamed Hey; 7 Mar. 2008; U. Roll leg.; on Apiaceae; SMNHTAU 24911, 24913 ● 2♀; ibid.; 8 Mar. 2008; SMNHTAU 24898, 24900 ● 1♀; Newe Shalom; 20 Feb. 2010; G. Pisanty leg.; SMNHTAU 31684; ● 1♀; ibid.; on *Scandix* sp.; SMNHTAU 31673 ● 1♂; ibid.; on *Sinapis* sp.; SMNHTAU 31701 ● 7♀; Revadim; 27 Mar. 2018; T. Roth leg.; on *Ferula communis*; SMNHTAU 290929, 290934, 290938, 290942, 290988, 290992, 290994 ● 1♂; Rosh Ha'Ayin, Forest; 2 Mar. 2017; L. Friedman leg.; SMNHTAU 269532 ● 1♀; Snir, Hermon Field Study Center; 13 Mar. 1997; R. Kasher leg.; SMNHTAU 366410 ● 1♂; ibid.; SMNHTAU 353564 ● 2♂; ibid.; NHMUK ● 2♂; ibid.; RMNH ● 2♂; ibid.; 21 Mar. 1997; SMNHTAU 353561, 353562 ● 1♂; ibid.; RMNH ● 2♀; ibid.; 3 Apr. 1997; SMNHTAU 353783, 353784 ● 1♀; ibid.; RMNH ● 7♀; Snir - Hermon Field Study Center; 27 Mar. 1997; R. Kasher leg.; SMNHTAU 354439, 354443 to 354445, 366414, 366415, 366417 ● 3♀; ibid.; NHMUK ● 3♀; ibid.; ZMB ● 1♂; ibid.; SMNHTAU 353556 ● 2♂; ibid.; ZMB ● 1♀; Tanur [Iyon Stream Nature Reserve]; 6 Mar. 1985; A. Freidberg leg.; SMNHTAU 353709 ● 2♀; Tarum; 18 Mar. 2021; A. Eliyahu leg.; SMNHTAU 380505, 380513 ● 1♀; Tivon; 2 Apr. 197[?]; F. Kaplan leg.; SMNHTAU 353641 ● 1♀; Ya'ar 'Adullam; 8 Apr. 2010; T. Koznichki leg.; pan trap; SMNHTAU 59508 ● 1♂; Ya'ar Kedoshim; 26 Feb. 2017; Y. Farago leg.; BOLD accession no. ANDIL441-25; SMNHTAU 272014 ● 1♀; ibid.; 8 Mar. 2017; BOLD accession no. ANDIL442-25; SMNHTAU 272214 ● 1♀; ibid.; 5 Mar. 2017; on *Daucus bicolor*; BOLD accession no. ANDIL444-25; SMNHTAU 272351 ● 1♀; Ya'ar Yish'i; 26 Apr. 2011; T. Koznichki leg.; pan trap; SMNHTAU 81418 ● 1♀; Ya'ar Yish'i; 26 Feb. 2013; Y. Berner leg.; on *Diplotaxis erucoides*; SMNHTAU 151391 ● 3♂; ibid.; SMNHTAU 151377, 151388, 151394 ● 1♀; Yiftah, E Upper Galilee; 26 Mar. 1994; R. Kasher leg.; SMNHTAU 353693 ● 5♂; ZikhronYaakov; 9 Feb. 1988; I. Yarom leg.; SMNHTAU 353528 to 353530, 353532, 353535 ● 2♀; Zur Natan 500mNE; 32.245° N 35.020° E; 29 Mar. 2020; G. Pisanty leg.; SMNHTAU 333814, 333820. – **LEBANON** ● 6♀; Beqaa, Beqaa valley, Mansourah, Aammiq wetland preserve; 33.7321° N 35.7853° E; 850 m a.s.l.; 3 Apr. 2023; T. Wood leg.; TJWC ● 1♀; ibid.; BOLD accession no. WPATW1056-23 ● 1♂; ibid.; BOLD accession no. WPATW1057-23 ● 3♀; Beqaa, Beqaa valley, Qaraoun, 3.5 km W of Madjal Balhis; 33.5377° N 35.7038° E; 900 m a.s.l.; 4–5 Apr. 2023; T. Wood leg.; TJWC ● 2♀; Mount Lebanon Governorate, Jabal Moussa Biosphere Res.; 1400 m a.s.l.; 14 May 2023; V. Soon leg.; TUZ ● 1♀; Quaraoun (Beka'a); 24 Mar. 2013; M. Kasparek leg.; OLML. – **WEST BANK** ● 1♀; Berakha, 1kmS, 'Amassa Spring; 595 m a.s.l.; 6 Mar. 2015; L. Friedman leg.; BOLD accession no. ANDIL417-25; SMNHTAU 206348 ● 1♀; Qalqilya; 4 Apr. 1981; A. Freidberg leg.; SMNHTAU 353702.

3.1.2.6. *Andrena* (*Micrandrena*) *calandra* Warncke, 1975

Figures 6, 15C, E, 20H

Andrena calandra Warncke, 1975a: 47–48, ♀ [SE Turkey: OLML].

Diagnosis of male. The male of *A. calandra*, similarly to the female, is easily distinguished from other members of the *A. minutula* group by the combination of a small body size, strong orange colouration of the anterior of the flagellum, polished and mirror-smooth scutum (Fig. 6C), and distinctly punctured tergal discs (Fig. 6D). It is most similar to *A. tkalcui* Gusenleitner & Schwarz, but clearly differs in the genitalia which lack a strong dorsal gonocoxite lobe (Fig. 20F, H), the eighth sternum which is apically truncate (strongly emarginate in *A. tkalcui*, Fig. 20W), and the clearly punctate tergal discs. In addition, the scutum of *A. tkalcui* is often partly shagreened centrally, and only occasionally mirror-smooth.

Description of male. ***Body length:*** 4.5–5.5 mm. — ***Integumental colour:*** Head and mesosoma black (Fig. 6A). Flagellum posteriorly black to reddish-brown, anteriorly flagellomere 1 black to reddish-black, the following flagellomeres reddish to orange. Legs black to dark brown, apical tarsomeres golden to light brown. Wings hyaline, vein R of forewing dark brown, internal veins golden to slightly brownish, stigma brownish-golden peripherally, yellow centrally (Fig. 6A). Metasoma usually black, occasionally partly to fully reddish-brown. Tergal marginal zones usually as dark as adjacent tergal discs, occasionally more brownish near apex (Fig. 6D). — ***Pubescence:*** Almost completely white (Fig. 6A). Lower ⅔ of face, including clypeus, supraclypeal and paraocular areas, scape and lower part of frons, with moderately dense, erect to semi-erect, short to medium white hairs (Fig. 6A, B). Upper part of frons and ocellar triangle with sparse, short to medium white hairs. Preoccipital ridge with short to medium erect white hairs. Genal area with moderately dense white hair, short dorsally, medium-lengthed ventrally (Fig. 6A–C). Discs of scutum and scutellum with sparse, short to medium erect white hair. Metanotum and periphery of scutum and scutellum with moderately dense, medium-lengthed erect white hair. Mesepisternum and propodeum with long white hair (Fig. 6A, C). Leg hair almost completely white, foretarsal hair with weak golden reflections (Fig. 6A). Base of tergal disc 1 and lateral parts of all terga with sparse, short to medium white hair, rest of tergal discs with minute inconspicuous white hair (Fig. 6D). Tergal marginal zones 2–5 with weak bands of white hair, strongly interrupted on 2–3, continuous on 4–5. Terminal fringe whitish (Fig. 6A, D). — ***Head:*** 1.3 times broader than long. Mandibles bidentate, moderately crossed. Galea very finely shagreened. Labral process subquadrate to weakly rectangular, apical margin concave (Fig. 6B). Clypeus weakly domed to almost flat, very shiny and more or less completely smooth, occasionally with hints of transverse striation on basal half, punctation strong and dense, distance between punctures 0.5–1 puncture diameters. Flagellomere 0.8–1.0 times as long as broad, 0.9–1.1 times as long as 3, 1.1–1.4 times as long as 2. Frons honeycomb-areolated, with dense punctures embedded within the rugosity. Ocelloccipital distance about 1.2 ocellus diameters (Fig. 6C). Preoccipital ridge weakly carinate. — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Anterior margin of scutum shagreened, rest of scutum and scutellum extremely shiny and polished-smooth, strongly punctured, distance between punctures 0.5–2 puncture diameters (Fig. 6C). Mesepisternum honeycomb-areolated, with dense punctures embedded within the rugosity. Anteroventral corner of propodeum reticulate, rest of propodeum rugose-areolate. Propodeal triangle occasionally delineated by partial carina, basally radially rugose to rugose-areolate, similar to flanking areas, apically very finely areolated (Fig. 6C). Recurrent vein 1 meeting submarginal cell 2 slightly proximal to its middle. Nervulus antefurcal to interstitial (Fig. 6A). — ***Metasoma:*** Sculpturing of tergal discs highly variable, basally more or less shagreened and matt, occasionally with fine transverse striation, apically shagreened and matt to completely smooth and shiny. Tergal discs with distinct, dense fine punctation, distance between punctures about 1 puncture diameter. Tergal marginal zones moderately depressed, superficially shagreened to smooth, impunctate, 2–3 centrally occupying about 0.3 and 0.5 of tergal length, respectively (Fig. 6D). — ***Genitalia and hidden sterna:*** Gonocoxites with small, weakly rounded dorsal lobe. Gonostyli simple, finger-shaped, more or less uniformly broad, rounded apically. Penis valves moderately broad basally, parallel-sided close to visible base, then tapering apically (Fig. 20H). Sternum 8 columnar, apical process broadened, apical margin more or less blunt.

Distribution and habitat. Shrublands and semi-arid habitats in south-central Turkey and the the Levant* (Northern Israel*, Jordan*).

Flight period. Late February to early June.

Flower records. One female collected on Asphodelaceae (*Asphodelus*).

Material examined. HOLOTYPE: TURKEY ● ♀; Antakya; 4 Jun. 1965; M. Schwarz leg.; OLML. – **PARATYPES: TURKEY** ● 2♀; ibid ● 1♀; Anatolia, Antakya; 1–7 Jun. 1985; J. Gusenleitner leg.; OLML. – **non-type material: ISRAEL** ● 1♂; Biriyya Forest; 32.99–33.00° N 35.52–53° E; 19 May 2023; G. Pisanty leg.; SMNHTAU 429801 ● 1♀; Dovrat; 14 May 1974; A. Freidberg leg.; SMNHTAU 366404 ● 1♀; Haifa; 9 Mar. 1981; A. Dafni leg.; on *Asphodelus*; SMNHTAU 353612 ● 1♀; Har Hermon; 33.310° N 35.795° E; 1970 m a.s.l.; 15 May 2016; G. Pisanty leg.; BOLD accession no. ANDIL433-25; SMNHTAU 242238 ● 1♀; Karé Deshe; 27 Feb. 2012; T. Shapira leg.; BOLD accession no. ANDIL403-25; SMNHTAU 132140 ● 2♀; Kefar Barukh; 32.650° N 35.175–180° E; 28 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 463010, 463014 ● 1♀; Kfar Masaryk; 32.87° N 35.13° E; 4 Apr. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462857 ● 10♀; Moradot HaGolan NR, 2.15 km NW 'Aleqa; 33.058° N 35.686° E; 488 m a.s.l.; 19 May 2019; A. Dorchin & A. Sviri leg.; Plot B8; SMNHTAU 309078,

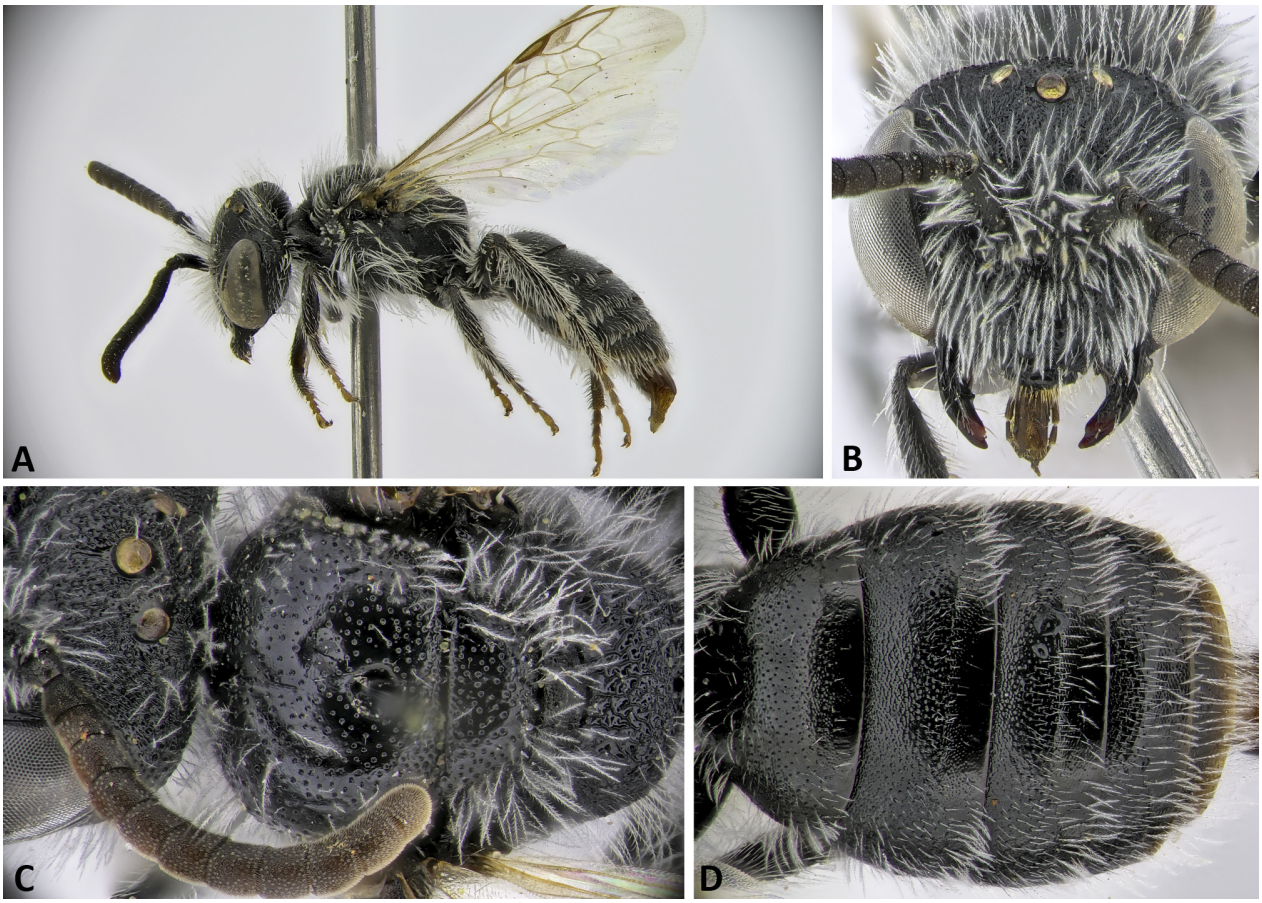

Figure 6. *Andrena calandra* Warncke, 1975, male. **A** Habitus; **B** head; **C** vertex and mesosoma; **D** metasoma.

309083, 309085, 309094, 309098 to 309100, 309104, 309108, 309109 ● 1♀; ibid.; BOLD accession no. ANDIL462-25; SMNHTAU 309084 ● 1♂; Moradot HaGolan NR, 2.65 km NW 'Aleqa, Plot B9; 33.061° N 35.682° E; 492 m a.s.l.; 19 May 2019; A. Dorchin & A. Sviri leg.; SMNHTAU 306627 ● 1♂; ibid.; BOLD accession no. ANDIL454-25; SMNHTAU 306618 ● 1♀; Mt. Carmel, Hay-Bar, 1 km S Univ.; 300 m a.s.l.; 15 Mar. 1990; R. Kasher leg.; SMNHTAU 366405 ● 1♀; Nahal Batra, Plot C12; 32.916° N 35.688° E; 85 m a.s.l.; 23 May 2019; A. Dorchin & T. Roth leg.; SMNHTAU 306751 ● 1♂; Nahal Batra, Plot C15; 32.936° N 35.711° E; 191 m a.s.l.; 23 May 2019; A. Dorchin & T. Roth leg.; SMNHTAU 306487 ● 1♀; Nahal Shuah, Plot A7; 33.068° N 35.677° E; 464 m a.s.l.; 31 May 2019; A. Dorchin & T. Roth leg.; SMNHTAU 306822 ● 1♂; Nahal Yadbir, Plot B1; 33.052° N 35.646° E; 124 m a.s.l.; 19 May 2019; A. Dorchin & A. Sviri leg.; RMNH ● 1♀; Road 91, 1.17km NE Bet HaMekhes Jcn, Site D4; 33.018° N 35.659° E; 316 m a.s.l.; 10 Apr. 2019; A. Dorchin & O. Halbershtat leg.; SMNHTAU 307390 ● 1♂; Ya'ar Yehudiyya NR, Rd. 87, Plot C2; 32.930° N 35.689° E; 125 m a.s.l.; 23 Apr. 2019; A. Dorchin, T. Roth & O. Halbershtat leg.; BOLD accession no. ANDIL453-25; SMNHTAU 306048. – **JORDAN** ● 1♂; Kufur; 4–5 May 2012; M. Kafka leg.; OLML ● 2♂; North Shuna; 29–30 Apr. 1996; Ma. Halada leg.; OLML ● 1♂; ibid.; TJWC.

3.1.2.7. *Andrena* (*Micrandrena*) *cervina* Warncke, 1975

Figures 18A, G, 20O

Andrena cervina Warncke, 1975a: 52, ♀♂ [Cyprus: OLML].

Distribution and habitat. Endemic to Mediterranean shrublands in Cyprus and the Levant (Israel, Lebanon*) (Pisanty et al. 2022b). Previously reported from Lebanon as *A. tiaretta* (Wood et al. 2020; Boustani et al. 2021).

Flight period. Available records range from early March to mid-May, but according to IUCN (2025) the season in Cyprus extends up to mid-June.

Flower records. Females appear to favour *Allium* spp. (Amaryllidaceae). Collected also on Asteraceae and Brassicaceae.

Remarks. Levantine populations of *Andrena cervina* differ from their Cypriot relatives by somewhat weaker and denser scutal punctation, and brighter stigma. We regard these differences as part of the accepted variability within a unified species concept. COI barcodes of the two populations show an average of 2% genetic distance.

Material examined. CYPRUS ● 11♀; Akamas; 35.02–05° N 32.32–36° E; 9 Apr. 2025; G. Pisanty leg.; on *Allium*; SMNHTAU 467044 to 467054 ● 6♀,1♂; Akamas, Neo Chorio, Lakki [Latsi]; 100 m a.s.l.; 10 Apr. 2000; J. Vořišek leg.; OLML ● 3♀; Akamas Pen.; 35.019–26° N 32.326–52° E; 8 Apr. 2025; G. Pisanty leg.; SMNHTAU 466987, 467000, 467011 ● 1♀; ibid.; 35.023–053° N 32.32–36° E; 9 Apr. 2025; SMNHTAU 467019 ● 3♂; NW Androlykou vill.; 312 m a.s.l.; 26 Mar. 2022; T. Ljubomirov leg.; IBER ● 1♂; Axylou, 14kmEPafos; 34°47.6' N 32°32.8' E; 400 m a.s.l.; 9 Apr. 2008; L. Friedman leg.; SMNHTAU

438669 ● 2♂; Famagusta district, Agia Napa, Cape Greco; 8 Mar. 2019; M. Mikát leg.; JS ● 1♀,1♂; Finikária, Kyparissia Trail; 34.7700° N 33.1122° E; 409 m a.s.l.; 22 Mar. 2024; R. Santerre leg.; on *Allium neapolitanum*; UMONS ● 1♀; ibid.; BOLD accession no. RSCMC027-25 ● 1♂; ibid.; BOLD accession no. RSCMC028-25 ● 4♂; Finikária, Lake, Phoinikaria Trail; 34.7560° N 33.0940° E; 87 m a.s.l.; 22 Mar. 2024; R. Santerre leg.; flying; UMONS ● 1♂; ibid.; BOLD accession no. RSCMC026-25 ● 1♀; Kidási, 0.3km N from village; 34.8103° N 32.7122° E; 293 m a.s.l.; 19 Apr. 2024; R. Santerre leg.; flying; UMONS ● 3♀; Kykkos; 800 m a.s.l.; 11 May 2014; M. Kafka leg.; TJWC ● 1♂; Lefkara, Rt. E105; 34°51.6' N 33°18.6' E; 600 m a.s.l.; 7 Apr. 2008; A. Freidberg leg.; BOLD accession no. ANCY036-24; SMNHTAU 438668 ● 7♀,99♂; E of Lemesos, Mary env; 6 Mar. 2014; M. Snižek leg.; OLML ● 3♂; Palódia, Ayia Irini Monastry; 34.7441° N 32.9760° E; 192 m a.s.l.; 7 Mar. 2024; R. Santerre leg.; on *Sinapis alba*; UMONS ● 7♀; ibid.; 4 Apr. 2024; on *Allium* cf. *neapolitanum* ● 6♂; Pano Panagia; 34.9213° N 32.6310° E; 15 Apr. 2025; G. Pisanty leg.; pan trap; SMNHTAU 467673, 467674, 467676, 467678, 467680, 467736 ● 1♀; Pano Panagia env.; 34.921–928° N 32.631–640° E; 12 Apr. 2025; G. Pisanty leg.; SMNHTAU 467307 ● 4♂; ibid.; 15 Apr. 2025; SMNHTAU 467587, 467588, 467590, 467595 ● 1♀; ibid.; 34.921–934° N 32.631–647° E; 14 Apr. 2025; SMNHTAU 467489 ● 4♂; ibid.; SMNHTAU 467398, 467399, 467487, 467492 ● 1♀; Paphos [District], Neo Chorio; 35.021–5° N 32.354–60° E; 11 Apr. 2025; G. Pisanty leg.; on *Sinapis*; SMNHTAU 467244 ● 13♀; ibid.; 35.0246° N 32.3535° E; 8 Apr. 2025; pan trap; SMNHTAU 466894 to 466906 ● 3♀; ibid.; 35.0260° N 32.3522° E; 9 Apr. 2025; SMNHTAU 467151, 467153, 467154 ● 55♂; Paphos district, Lycos [Lysos]; 5 Apr. 2006; J. Simaki leg.; OLML ● 1♀; Pentalia, 21 km NE Pafos; 34°50.9' N 32°36.7' E; 650 m a.s.l.; 8 Apr. 2008; L. Friedman leg.; BOLD accession no. ANCY002-24; SMNHTAU 402793 ● 3♀,1♂; Polemidia National Forest Park; 8 Mar. 2017; Bee course 2017 leg.; AV ● 76♀,21♂; Polis env; 9 Mar. 2014; M. Snižek leg.; OLML ● 5♂; Troodos mountains, Kelefos Bridge; 1–10 Apr. 2000; S. Kadelc leg.; OLML ● 2♀,1♂; Troodos range, Stavros tis Psokas; 35.0232° N 32.6342° E; 945 m a.s.l.; 23 Apr. 2024; R. Santerre leg.; on *Crepis reuteriana*; UMONS. – **ISRAEL** ● 1♀; Alloné Abba; 14 Apr. 1999; A. Freidberg leg.; SMNHTAU 353665 ● 1♀; Allone Abba; 32°43' N 35°09' E; 7 Apr. 2013; W. Kuslitzky leg.; SMNHTAU 144202 ● 1♂; Har Addir; 33.033° N 35.361° E; 5 Apr. 2016; G. Pisanty leg.; pan trap 239469 ● 2♀; ibid.; 22 Apr. 2016; SMNHTAU 240799, 240803 ● 1♀; ibid.; BOLD accession no. ANDIL062-22; SMNHTAU 240802 ● 5♂; Har Hermon; 33.2991° N 35.7667° E; 1644 m a.s.l.; 16 Apr. 2022; G. Pisanty leg.; pan trap; SMNHTAU 390385, 390388, 390391, 390396, 390511 ● 1♂; ibid.; 33.2992° N 35.7670° E; SMNHTAU 390218 ● 1♂; ibid.; 33.2994° N 35.7675° E; 1645 m a.s.l.; 16 Apr. 2021; BOLD accession no. ANDIL124-22; SMNHTAU 361271 ● 2♀; ibid.; 33.2996° N 35.7677° E; 1642 m a.s.l.; 19 May 2022; SMNHTAU 392728, 392729 ● 1♂; ibid.; 16 Apr. 2022; SMNHTAU 390542 ● 1♂; ibid.; 33.300° N 35.767° E; 1600 m a.s.l.; 11 May 2020; SMNHTAU 334856 ● 1♀; ibid.; 33.3015° N 35.7737° E; 1790 m a.s.l.; 15 May 2016; SMNHTAU 242096 ● 1♀; ibid.; BOLD accession no. ANDIL064-22; SMNHTAU 242095 ● 11♀; ibid.; 33.2995° N 35.7683° E; 1654 m a.s.l.; 19 May 2022; on *Allium*; SMNHTAU 392738 to 392748 ● 2♀; Hermon; 33.298–9° N 35.767–70° E; 1640–1675 m a.s.l.; 19 May 2022; G. Pisanty leg.; sweep; SMNHTAU 392808, 392810 ● 1♂; ibid.; 33.2992° N 35.7677° E; 1649 m a.s.l.; 16 Apr. 2022; on *Juniperus drupacea*; SMNHTAU 389906 ● 5♀; Hermon, Har Kahal; 33.2885° N 35.730–737° E; 1210–1320 m a.s.l.; 29 Apr. 2022; G. Pisanty leg.; SMNHTAU 391272, 391282, 391300, 391302, 391305 ● 3♀; Hermon, Har Shezif; 33.286° N 35.7524° E; 1447 m a.s.l.; 16 Apr. 2022; G. Pisanty leg.; pan trap; SMNHTAU 390715, 390719, 390720 ● 1♂; ibid.; SMNHTAU 390711 ● 2♀; Har Meron; 1000 m a.s.l.; 17 Apr. 2012; L. Friedman leg.; SMNHTAU 124536, 124554 ● 3♀; ibid.; 1 May 2022; SMNHTAU 391418 to 391420 ● 1♂; Har Meron; 1100 m a.s.l.; 17 Apr. 2000; A. Freidberg leg.; SMNHTAU 353522 ● 1♀; ibid.; 25 Apr. 2002; L. Friedman leg.; SMNHTAU 353667 ● 1♀; Har Meron; 32.9949° N 35.4166° E; 21 Apr. 2017; G. Pisanty leg.; SMNHTAU 270985 ● 1♀; ibid.; 32.999° N 35.395° E; 5 Apr. 2016; SMNHTAU 239366 ● 1♂; ibid.; 33.300° N 35.3927° E; 4 Apr. 2017; pan trap; BOLD accession no. ANDIL440-25; SMNHTAU 270262 ● 1♂; ibid.; BOLD accession no. ANDIL074-22; SMNHTAU 270268 ● 1♀; Har Meron Reserve, 'En Zeved; 32°59' N 35°26' E; 24 Apr. 2002; L. Friedman leg.; SMNHTAU 354497 ● 1♀; Malkiyya; 27 Apr. 2014; O. Winberger leg.; pan trap; SMNHTAU 183928 ● 1♂; Mount Meron; 900 m a.s.l.; 13 Apr. 1988; C. O'Toole leg.; on *Sinapis alba*; SMNHTAU 353460 ● 1♀; Mt. Meron; 9 Apr. 1977; A. Freidberg leg.; SMNHTAU ● 3♂; Sasa; 31 Mar. 2016; O. Winberger leg.; SMNHTAU 253850, 253853, 253858 ● 3♀; ibid.; 14 Apr. 2016; SMNHTAU 252008, 252027, 252029 ● 7♂; ibid.; SMNHTAU 251976, 251979, 251980, 251984, 252012, 252025, 252028 ● 2♂; ibid.; 20 Apr. 2015; pan trap; SMNHTAU 184770, 184775 ● 1♀; Ya'ar 'Adulam; 20 Apr. 2011; T. Koznichki leg.; SMNHTAU 354454 ● 1♂; Ya'ar Kedoshim; 4 Mar. 2014; N. Shamir leg.; pan trap; SMNHTAU 152613 ● 1♀; Ya'ar Nehusha; 25 Apr. 2011; T. Koznichki leg.; pan trap; SMNHTAU 354433 ● 1♀; Ya'ar Odem NR; 33.205° N 35.736° E; 27 Apr. 2020; G. Pisanty leg.; SMNHTAU 334373 ● 1♀; ibid.; BOLD accession no. ANDIL101-22; SMNHTAU 334561 ● 1♀; Ya'ar Yish'i; 31 Mar. 2016; T. Chaprazaro leg.; SMNHTAU 251635 ● 1♀; ibid.; BOLD accession no. ANDIL066-22; SMNHTAU 251634 ● 2♀; ibid.; 1 Apr. 2016; SMNHTAU 251641, 251646 ● 7♀; Yiftach; 30 Mar. 2016; O. Winberger leg.; SMNHTAU 253749, 253750, 253757, 253761, 253764, 253777, 253784 ● 2♀; ibid.; OLML ● 25♀; ibid.; 12 Apr. 2016; SMNHTAU 251914, 251916 to 251919, 251922 to 251924, 251926, 251930, 251934 to 251936, 251938, 251940, 251941, 251943, 251947 to 251951, 251953 to 251955 ● 2♀; ibid.; OLML ● 1♀; ibid.; 21 Apr. 2015; pan trap; SMNHTAU 184674 ● 1♂; Yir'on; 10 Apr. 2014; O. Winberger leg.; pan trap; SMNHTAU 183232. – **WEST BANK** ● 1♀; Peduel, Deir Qala'; 27 Mar. 2013; L. Friedman leg.; SMNHTAU 138661.

3.1.2.8. *Andrena* (*Micrandrena*) *chananaea* Pisanty & Wood sp. nov.

https://zoobank.org/1D96D7C3-FE20-47A5-9EA2-043F76-9E17F1

Figures 7, 18F, L, 21A

Etymology. Nominative feminine singular form of the Latin adjective *chananaeus* (=Canaanite).

Diagnosis. Within the *Andrena minutula* species group, the female of *A. chananaea* is characterized by the combination of a shagreened, strongly punctate clypeus, often with a strong impunctate midline (Fig. 18F), densely and strongly punctate scutum (Figs 7C, 18L), and shagreened tergal discs with at most obscure punctation (Fig. 7D). These characters apply equally well to *A. minutula* (Kirby) itself, and we could not identify any good morphological character that separates females of the two taxa.

Within the Levantine *Micrandrena* fauna, the female of *A. chananaea* most closely resembles *A. sillata* Warncke and *A. alfkenelloides cardalia* Warncke. Compared to *A. sillata*, *A. chananaea* has stronger and coarser clypeal puncturing (Fig. 18E, F), and slightly sparser and coarser scutal punctation (Fig. 18K, L). Compared to *A. a. cardalia*, it has a more evenly sculptured clypeus (very densely punctate and transversely striated basally, partly smooth medioapically in *A. a. cardalia*; Figs 16A, 18F) and a dull, microreticulate, and very weakly punctate tergal disc 1 (Fig. 7D; usually smoother and more distinctly punctate in *A. a. cardalia*, especially in the second generation).

The male of *A. chananaea* is very hard to diagnose among members of the *A. minutula* group, due to its extreme morphological variability, both among and within the two seasonal generations. The main consistent characters are a short flagellomere 1, clypeus and scutum which are densely punctured and usually at least partly shagreened, terga which are highly variable but at least weakly punctate, and simple genitalia. The male is closest to *A. alfkenella* Perkins and *A. alfkenelloides cardalia*, but exhibits subtle differences in the shape of the genitalia, with the gonostyli only slightly narrowed basally (inner margin of gonostylus more strongly narrowing basally in *A. alfkenella* and *A. a. cardalia*), and the penis valves distinctly broader basally vs. apically (more uniformly narrow in the comparison species) (Fig. 21A–C). In general overview, the genitalia of *A. chananaea* appear somewhat more robust and enlarged. In addition, males of *A. chananaea* usually possess a longer flagellomere 1 when compared to *A. a. cardalia*, and tergal discs that are more strongly shagreened and more weakly and finely punctured when compared to both *A. alfkenella* and *A. a. cardalia*, but all these traits are far too variable among individuals of these species to constitute reliable differentiating characters. The male of *A. chananaea* may also resemble *A. minutuloides*, but its scutal punctation is denser, and its penis valves are narrower basally (Fig. 21A, F).

Description. FIRST GENERATION FEMALE. ***Body length:*** 5.5–6 mm. — ***Integumental colour:*** Body and legs black. Flagellum black, partly covered by greyish scales especially on distal flagellomeres. Tarsi black to brown. Wings weakly infuscate, veins and stigma brown (Fig. 7A). Tergal marginal zones black, apical margin black to brownish (Fig. 7D). — ***Pubescence:*** Face mostly with light brownish to golden, moderately dense hair, on clypeus semi-erect, short and thin, on paraocular area erect and medium-lengthed, on supraclypeal area and scape erect and short, on frons and preoccipital ridge erect, short to long, on genal area semi-erect to erect, short to medium (Fig. 7A–C). Few inconspicuous short dark hairs occur on ocellar triangle and behind upper margin of compound eyes. Hair of facial fovea brownish on upper ⅓ of fovea, more whitish below (Fig. 7B, C). Scutum with brownish hair, centrally short to minute, interspersed with few long erect hairs, underlying cuticle visible, peripherally short to medium and erect. Metanotum and periphery of scutellum with erect, short to long brownish hair (Fig. 7C). Mesepisternum with long whitish hair (Fig. 7A). Propodeal corbicula incomplete, posterodorsal fringe composed of long plumose whitish hair, corbicular surface with few long, simple whitish hairs. Leg hair mostly whitish to golden, flocculus incomplete, white, tibial scopal hair simple, whitish, becoming brown near posterobasal margin of tibia (Fig. 7A). Majority of tergal discs 1–2 essentially hairless, 3–4 with minute inconspicuous bright hair, tergal discs laterally with few sparse short to medium white hairs. Tergal marginal zones 2–4 with prominent, broadly interrupted white hair bands, consisting of very sparse medium-lengthed hairs emerging from the basal rim of the marginal zone, and denser short hairs emerging near its apex. Tergal marginal zone 4 with very weak continuous band of very sparse medium-lengthed whitish hairs emerging from its basal rim. Terminal fringe light brown, flanked by few white hairs (Fig. 7D). — ***Head:*** 1.2 times broader than long. Mandibles bidentate, moderately crossed. Galea finely shagreened (Fig. 7B). Labral process trapezoidal, not much broader than long. Clypeus domed, entirely shagreened and matt except for an occasionally shinier apical margin, punctation strong, distance between punctures 1–2 puncture diameters, an impunctate midline is usually weakly to strongly developed (Figs 7B, 18F). Ventrolateral part of paraocular area very smooth, strongly and densely punctured. Frons and rest of paraocular area strongly longitudinally striated, with coarse punctures embedded between the striations (Fig. 7B, C). Flagellomere 1 0.9–1 times as long as 2+3, 2 slightly shorter than 3 (Fig. 7B). Facial fovea dorsally moderately narrow, here about 0.4 times as broad as antennocular distance, tapering ventrally, extending from level of lower end of lateral ocellus to slightly above base of clypeus, lower ⅔ separated from compound eye by smooth cuticular strip. Frons with distinct medial carina, dorsally usually ending with a smooth broadened flat area under the medial ocellus. Distance of fovea from lateral ocellus about 2 ocellus diameters (Fig. 7B, C). Lateral ocelli not connected posteriorly by trough-like furrow. Ocelloccipital distance roughly 1 ocellus diameter. Preoccipital ridge weakly carinate (Fig. 7C). — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Scutum usually strongly shagreened and matt, rarely weakly to strongly shiny and partly smooth, punctation strong and dense, distance between punctures <0.5 to 1 puncture diameter. Scutellum similar, anterior part often shiny and somewhat smooth (Figs 7C, 18L). Mesepisternum posteriorly finely alveolate, anteriorly gradually strongly and densely, obliquely punctured. Surface of propodeal corbicula reticulated, with few large punctures around hair bases. Posterior part of propodeum strongly differentiated into horizontal vs. vertical parts. Posterolateral area of propodeum rugose-areolate. Propodeal triangle delineated from flanking areas by change in sculpture, not surrounded by carina, horizontal part coarsely radially rugose, vertical part very finely areolated (Fig. 7C). Hind pretarsal claw with small inner tooth. Recurrent vein 1 meeting submarginal cell 2 more or less at its middle. Nervulus distinctly antefurcal to almost interstitial (Fig. 7A). — ***Metasoma:*** Ter-

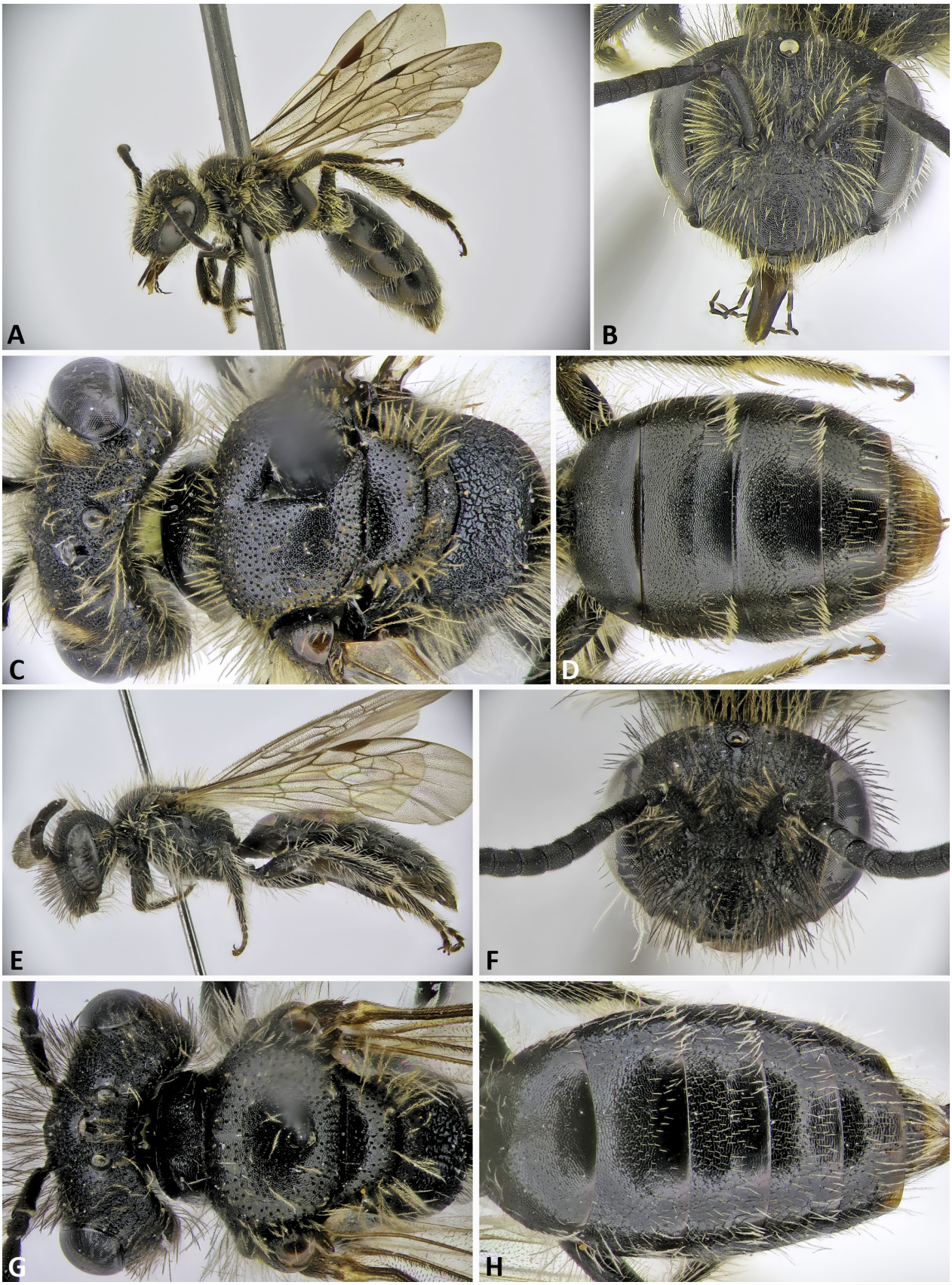

Figure 7. *Andrena chananaea* Pisanty & Wood **sp. nov.**, 1st generation. **A** Female habitus; **B** female head; **C** female vertex and mesosoma; **D** female metasoma; **E** male habitus; **F** male head; **G** male vertex and mesosoma; **H** male metasoma.

gal discs 1–2 strongly shagreened and matt, with hints of fine punctation blended into the shagreening; 3 and especially 4 often more weakly shagreened, 3 with stronger hints of fine, dense punctation. Tergal marginal zones impunctate, weakly depressed, moderately arched, 2–3 centrally occupying 0.4–0.7 of tergal length, 1–2 distinctly

shagreened and matt, the following gradually more weakly shagreened (Fig. 7D). Pygidial plate normally developed. — **SECOND GENERATION FEMALE.** ***Body length:*** 5–6.5 mm. — ***Integumental colour:*** As in first generation, but flagellum often brown to reddish-brown anteriorly. — ***Pubescence:*** Similar to first generation, but overall somewhat sparser, shorter and brighter, without dark hairs on ocellar triangle and upper margin of compound eye. — ***Head:*** Similar to first generation, but impunctate midline of clypeus usually absent or poorly developed. — ***Mesosoma:*** As in first generation, but scutum and scutellum nearly always strongly shiny, partly to fully smooth at least on disc. Sculpturing of horizontal part of propodeal triangle slightly finer, more rugose-areolate. — ***Metasoma:*** As in first generation. — **FIRST GENERATION MALE.** ***Body length:*** 5–6 mm. — ***Integumental colour:*** Body and legs black. Flagellum black, partly covered by greyish scales especially on distal flagellomeres. Tarsi black to brown. Wings weakly infuscate, veins and stigma brown (Fig. 7E). Tergal marginal zones black to golden-brown (Fig. 7H). — ***Pubescence:*** Face, including clypeus, supraclypeal and paraocular areas, scape and frons, with moderately dense, semi-erect to erect, medium to long black hair. A few whitish hairs can often be noted near apex of clypeus and on scape, exact colour dependent on angle of view. Preoccipital ridge with long erect whitish to brownish hairs. Dorsal part of genal area with short to medium erect black hairs, ventral part with long erect whitish hairs (Fig. 7E–G). Scutum, scutellum and metanotum with long erect hairs, mostly whitish to brownish, a few dark, these hairs sparse on scutum, here interspersed with shorter inconspicuous hairs, dense on metanotum and periphery of scutellum. Mesepisternum with very long erect hairs, whitish on ventral part, usually black and rarely whitish on dorsal part (Fig. 7E, G). Propodeum with long hairs, mostly whitish, some dark hairs often occur near base of wing. Leg hair mostly white, some weak golden reflections appear mostly on tarsi (Fig. 7E). Base of tergum 1 and lateral areas of all terga with sparse, short to medium white hair; rest of tergal discs with minute inconspicuous whitish hair. Tergal marginal zones 2–3 with weak, broadly interrupted white hair bands, concentrated mostly near apex of marginal zone. Tergal marginal zone 4 with extremely weak hints of similar hair bands. Terminal fringe whitish (Fig. 7H). — ***Head:*** 1.2 times broader than long (Fig. 7F). Mandibles bidentate, moderately crossed. Galea finely shagreened. Labral process trapezoidal to subquadrate, not much broader than long, apical half usually elevated, apical margin concave. Clypeus domed, centrally often somewhat flattened, basally strongly shagreened and matt with some transverse striations, apically usually shiny and weakly shagreened, rarely strongly shagreened and matt. Clypeus punctation strong and dense, distance between punctures <0.5 to 1 puncture diameter, puncture density decreasing medioapically, often creating a distinct impunctate midline at least on apical half. Lower part of paraocular area shiny and strongly punctured, upper part with narrow strip of fine, dense punctation along inner margin of compound eye, elsewhere strongly longitudinally shagreened to rugose-areolate, some embedded punctures can occasionally be discerned. Flagellomere 1 1.1–1.2 times longer than broad, usually 1.45–1.8 times longer than 2 and 1.05–1.2 times longer than 3, rarely slightly shorter (Fig. 7F). Frons strongly rugose-areolate, with some embedded punctures especially near centre. Ocelloccipital distance 1 ocellus diameter. Preoccipital ridge moderately carinate (Fig. 7G). — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Scutum fully shagreened and matt, strongly punctured, distance between punctures 0.5–1.5 puncture diameters, some punctures with elevated margins, especially on anterior half of scutum. Scutellum similar, often somewhat smoother centrally, punctures without elevated margins (Fig. 7G). Mesepisternum with fine alveolation, overlayed by sparse coarse oblique punctures. Anterolateral part of propodeum ventrally reticulated, dorsally gradually rugose-areolated. Posterolateral part of propodeum strongly, finely rugose-areolate. Horizontal part of propodeal triangle strongly, coarsely radially rugose to rugose-areolate, vertical part very finely areolated (Fig. 7G). Recurrent vein 1 meeting submarginal cell 2 more or less near its middle. Nervulus antefurcal to almost interstitial (Fig. 7E). — ***Metasoma:*** Tergal discs exhibiting high variability in sculpture, usually shagreened basally and weakly shagreened to smooth apically, proximal terga with stronger shagreening. Very fine punctation is discernible especially on the smoother areas, distance between punctures 1–2 puncture diameters. Tergal marginal zones not to weakly depressed, very shiny, smooth to very superficially shagreened, essentially impunctate (Fig. 7H). — ***Genitalia and hidden sterna:*** Gonocoxites apically truncate, without dorsal lobe. Gonostyli simple, finger-shaped, very slightly broadening apically, blade flattened, apical margin rounded. Penis valves moderately narrow, basal ¼ of visible area parallel-sided, the following ¼ strongly tapering apically, distal half very narrow (Fig. 21A). Sternum 8 columnar, apical process somewhat broadened, apical margin rounded to truncate. — **SECOND GENERATION MALE.** ***Body length:*** 5–5.5 mm. — ***Integumental colour:*** As in first generation. ***Pubescence:*** Only a single individual is available to us with intact hair, hence the description in this section should be considered preliminary. Clypeus with sparse short whitish hairs. Paraocular area, scape and area around antennal sockets with short to medium, mixed bright and dark hairs. Preoccipital ridge with medium-lengthed erect whitish hairs. Genal area with whitish hairs, short dorsally, medium-lengthed ventrally. Hairs of scutum, scutellum and metanotum completely whitish. Rest of pubescence as in first generation. — ***Head:*** Clypeus at least on apical ⅔ very shiny, partly to fully smooth. Rest of head as in first generation. — ***Mesosoma:*** Scutum and scutellum shiny, weakly shagreened to completely smooth, very strongly punctured. Mesepisternum with fine alveolation overlayed by coarse regular (not oblique) punctures with raised margins. Rest of mesosoma as in first generation. ***Metasoma:*** Tergal discs strongly shiny, partly shagreened to fully smooth, punctation strong, fine to moderately sized, distance between punctures 1–2 puncture diameters. Tergal marginal

zones as in first generation. — ***Genitalia and hidden sterna:*** As in first generation.

Distribution and habitat. Shrubland and mesic habitats in all countries of the Levant. Previously reported from Lebanon as *A. minutula* (Wood et al. 2020; Boustani et al. 2021).

Flight period. Early February to late June, in two generations (February–mid-April and mid-April–June, depending on elevation).

Flower records. Collected on Apiaceae (*Daucus*), Rosaceae (*Pyrus*) and Sapindaceae (*Acer*).

Type material. HOLOTYPE: ISRAEL ● 1♀; Me'arat Yishah [Mount Carmel, Yishah Cave], 0.5km E; 32.718° N 35.007° E; [310 m a.s.l.]; 22 Feb. 2019; G. Pisanty leg.; BOLD accession no. ANDIL464-25; SMNHTAU 321609. – **PARATYPES: ISRAEL** ● 2♀; Aqua Bella [Ein Hemed]; 14 May 1951; J. Wahrman leg.; SMNHTAU 353594, 353595 ● 1♀; Biriyya Forest; 32.99–33.00° N 35.52–53° E; 19 May 2023; G. Pisanty leg.; SMNHTAU 429802 ● 1♀; Carmel; 14 Feb. 1976; A. Freidberg leg.; SMNHTAU 353621 ● 1♀; ELA JUN.; [?] Feb. 1984; E. Shney-Dor leg.; SMNHTAU ● 5♀; Har Addir; 33.032–7° N 35.361–72° E; 780–1000 m a.s.l.; 21 May 2025; G. Pisanty leg.; SMNHTAU 470540 to 470544 ● 1♀; Har Addir; 33.033° N 35.361° E; 22 Apr. 2016; G. Pisanty leg.; pan trap; SMNHTAU 240804 ● 1♂; Har Ahino'am; 32.502–6° N 35.408–14° E; 440 m a.s.l.; 3 Mar. 2025; G. Pisanty leg.; SMNHTAU 463954 ● 1♂; Har Avital, Golan Heigh[t] N; 15 Mar. 1995; R. Kasher leg.; SMNHTAU 353476 ● 1♀; Har Dov; 1000 m a.s.l.; 21 May 1986; A. Freidberg leg.; SMNHTAU 366406 ● 1♀; Har Hermon; 1600 m a.s.l.; 29 May 2000; I. Yarom leg.; SMNHTAU ● 1♀; ibid.; 1700 m a.s.l.; 26 Jun. 1997; L. Friedman leg.; SMNHTAU 366407 ● 7♀; ibid.; 33.2994° N 35.7675° E; 1645 m a.s.l.; 16 Apr. 2021; G. Pisanty leg.; SMNHTAU 361187, 361188, 361190, 361191, 361193, 361196, 361200 ● 1♀; ibid.; RMNH ● 2♀; ibid.; ZMB ● 1♀; ibid; BOLD accession no. ANDIL495-25; SMNHTAU 361426 ● 1♂; ibid.; SMNHTAU 361316 ● 1♂; ibid; BOLD accession no. ANDIL463-25; SMNHTAU 361401 ● 1♂; ibid.; 33.30° N 35.77° E; 1600–1800 m a.s.l.; 17 Jun. 2020; BOLD accession no. ANDIL483-25; SMNHTAU 336032 ● 1♀; ibid.; 33.302° N 35.773° E; 1820 m a.s.l.; BOLD accession no. ANDIL484-25; SMNHTAU 336103 ● 1♀; ibid.; 33.3015° N 35.7735° E; 1790 m a.s.l.; 18 Jun. 2020; BOLD accession no. ANDIL482-25; SMNHTAU 336000 ● 4♀; ibid.; 33.2855° N 35.763° E; 1420 m a.s.l.; 7 Apr. 2021; pan trap; SMNHTAU 360669, 360671, 360673, 360674 ● 1♀; ibid; BOLD accession no. ANDIL492-25; SMNHTAU 360670 ● 2♀; ibid.; 33.296° N 35.763° E; 1540 m a.s.l.; SMNHTAU 360890, 360891 ● 2♀; ibid.; 33.2991° N 35.7667° E; 1644 m a.s.l.; 16 Apr. 2022; SMNHTAU 390404, 390406 ● 3♀; ibid.; 33.2992° N 35.7670° E; SMNHTAU 390170, 390176, 390188 ● 11♂; ibid.; SMNHTAU 390010, 390130, 390136, 390138, 390149, 390160, 390163, 390165, 390186, 390221, 390235 ● 1♂; ibid.; OLML ● 1♀; ibid.; 33.2996° N 35.7677° E; 1642 m a.s.l.; SMNHTAU 390553 ● 4♀; ibid.; OLML ● 1♂; ibid.; SMNHTAU 390593 ● 1♀; ibid.; 33.300° N 35.767° E; 1600 m a.s.l.; 17 Jun. 2020; SMNHTAU 335935 ● 1♀; ibid; BOLD accession no. ANDIL481-25; SMNHTAU 335936 ● 6♀; ibid.; 1610 m a.s.l.; 7 Apr. 2021; SMNHTAU 360522, 360523, 360526, 360530, 360531, 360550 ● 1♀; ibid.; RMNH ● 5♀; ibid.; 33.299° N 35.769° E; 1650 m a.s.l.; sweep; SMNHTAU 360377 to 360379, 360382, 360384 ● 2♂; ibid.; SMNHTAU 360392, 360393 ● 1♀; ibid.; 33.2992° N 35.7668° E; 1642 m a.s.l.; 16 Apr. 2022; on Rosaceae; SMNHTAU 389944 ● 2♀; ibid.; 33.2993° N 35.7679° E; 1649 m a.s.l.; 7 Apr. 2021; on *Acer monspessulanum*; SMNHTAU 360293, 360301 ● 4♀; ibid.; 16 Apr. 2021; SMNHTAU 361500 to 361502, 361543 ● 1♀; Har Hermon, Nahal 'Ar'ar; 33°18.3' N 35°46.2' E; 1600 m a.s.l.; 24 May 2012; L. Friedman leg.; SMNHTAU 126767 ● 1♀; Har Karmila; 31.78–79° N 35.02–04° E; 5 Mar. 2017; G. Pisanty leg.; BOLD accession no. ANDIL437-25; SMNHTAU 268885 ● 1♂; Har Meron; 800 m a.s.l.; 5 Mar. 2011; A. Freidberg leg.; SMNHTAU 89136 ● 1♀; Har Meron; 1000 m a.s.l.; 17 Apr. 2012; L. Friedman leg.; SMNHTAU 124582 ● 1♀; Har Meron; 33.000° N 35.3925° E; 21 Apr. 2016; G. Pisanty leg.; SMNHTAU 240984 ● 1♀; ibid.; NHMUK ● 1♀; ibid.; RMNH ● 1♀; ibid; BOLD accession no. ANDIL431-25; SMNHTAU 240977 ● 1♂; Harel; 21 Feb. 2020; K. Levy leg.; BOLD accession no. ANDIL486-25; SMNHTAU 338407 ● 1♀; HaTanur [Iyon Stream Nature Reserve]; 24 May 1988; Y. Zvik leg.; SMNHTAU 366408 ● 1♂; ibid.; I. Yarom leg.; SMNHTAU 366430 ● 1♂; Hermon; 33.2992° N 35.7668° E; 1642 m a.s.l.; 16 Apr. 2022; G. Pisanty leg.; on Rosaceae; SMNHTAU 389942 ● 1♂; ibid.; 33.2992° N 35.7677° E; 1649 m a.s.l.; on *Juniperus drupacea*; SMNHTAU 389905 ● 2♀; Hermon Nature Reserve, Busheri curve, Plot F4; 33.301° N 35.773° E; 1791 m a.s.l.; 18 Jun. 2019; A. Dorchin, A. Sviri & Y. Mersman leg.; SMNHTAU 309285, 309286 ● 1♀; Hermon NR, Har Shezif, Plot E4; 33.286° N 35.743° E; 1480 m a.s.l.; 30 May 2019; L. Friedman leg.; BOLD accession no. ANDIL458-25; SMNHTAU 308498 ● 1♂; Jermak [Mt. Meron]; 20 May 1959; Krystal J. leg.; SMNHTAU 366436 ● 1♀; Karei Deshe; 9 Feb. 2013; T. Shapira leg.; SMNHTAU 151025 ● 1♀; Kefar Uriyya-Tarum; 31.78–80° N 34.95–97° E; 25 Feb. 2017; G. Pisanty leg.; SMNHTAU 268527 ● 1♀; ibid; BOLD accession no. ANDIL436-25; SMNHTAU 268528 ● 3♀; Mata; 13 Mar. 2024; A. Lofchick leg.; SMNHTAU 456689, 456729, 456732 ● 1♀; Me'arat Yishah, 0.5km E; 32.718° N 35.007° E; 22 Feb. 2019; G. Pisanty leg.; SMNHTAU 321590 ● 1♂; ibid.; SMNHTAU 321668 ● 1♂; ibid; BOLD accession no. ANDIL467-25; SMNHTAU 321659 ● 1♀; [?Mount] Meiron; 13 May 1973; M. Kaplan leg.; SMNHTAU 353650 ● 1♀; Meron JNC., Upper Gallilee; 20 Mar. 1995; on Pyrus; SMNHTAU 367687 ● 3♀; Nahal 'Iyyon, HaTanur Waterfall; 33°16.1' N 35°34.5' E; 15 Mar. 2011; A. Freidberg leg.; SMNHTAU 89755, 89757, 89761 ● 1♂; ibid.; SMNHTAU 89750 ● 1♀; ibid.; E. Morgulis leg.; SMNHTAU 90690 ● 1♀; Netiv Halamed He; 26 Feb. 2009; G. Pisanty leg.; SMNHTAU 27619 ● 1♂; Newe Shalom; 6 May 2011; G. Pisanty leg.; on *Daucus aureus*; SMNHTAU 80807 ● 1♂; Nimrod Fortress; 24 Feb. 2012; G. Pisanty leg.; SMNHTAU 107040 ● 1♀; Pa'ar Cave, nearSasa; 33°02' N 35°23' E; 800 m a.s.l.; 26 May 2009; A. Freidberg leg.; SMNHTAU 34309 ● 1♀; Snir, Hermon Field Study Center; 21 Mar. 1997; R. Kasher leg.; SMNHTAU 354452 ● 1♀; Tanur; 15 Mar. 1975; F. Kaplan leg.; SMNHTAU 353646 ● 2♀; Tanur; 6 Mar. 1985; A. Freidberg leg.; SMNHTAU 353708, 353710 ● 2♀; Tur'an Peak; 32°47.8' N 35°22.5' E; 555 m a.s.l.; 18 Apr. 2010; A. Freidberg leg.; SMNHTAU 50634, 50640 ● 1♀; Ya'ar Kedoshim; 26 Feb. 2017; Y. Farago leg.; SMNHTAU 272182 ● 1♀; ibid.; 5 Mar. 2017; RMNH ● 1♀; ibid; BOLD accession no. ANDIL443-25; SMNHTAU 272287 ● 1♀; ibid.; 8 Mar. 2017; SMNHTAU 272049 ● 1♂; Ya'ar Nehusha; 15 Feb. 2011; T. Koznichki leg.; pan trap; BOLD accession no. ANDIL510-25; SMNHTAU 81357 ● 2♀; ibid.; 25 Apr. 2011; SMNHTAU 354437, 354438 ● 1♀; ibid; BOLD accession no. ANDIL488-25; SMNHTAU 354434 ● 1♀; Ya'ar Odem N.R.; 1 Mar. 2018; G. Pisanty leg.; SMNHTAU 286475 ● 5♀; Ya'ar Odem NR; 33.186° N 35.7356° E; 27 Feb. 2020; G. Pisanty leg.; pan trap; SMNHTAU 332294, 332296, 332297, 332301, 332303 ● 3♂; ibid.; SMNHTAU 332288, 332292, 332298 ● 1♀,1♂; ibid.; RMNH ●

1♂; ibid; BOLD accession no. ANDIL473-25; SMNHTAU 332287 ● 2♀; ibid.; 33.206° N 35.736° E; NHMUK ● 1♀; ibid; BOLD accession no. ANDIL471-25; SMNHTAU 332083 ● 4♂; ibid.; SMNHTAU 332073, 332074, 332076, 332077 ● 1♂; ibid; BOLD accession no. ANDIL470-25; SMNHTAU 332081 ● 1♀; Ya'ar Yish'i; 21 Apr. 2010; T. Koznichki leg.; SMNHTAU 59547 ● 1♂; ibid.; 18 Feb. 2011; BOLD accession no. ANDIL509-25; SMNHTAU 81168 ● 1♀; ibid.; 26 Apr. 2011; SMNHTAU 81415 ● 3♀; ZikhronYaakov; 9 Feb. 1988; I. Yarom leg.; SMNHTAU 353723 to 353725 ● 1♂; ibid.; SMNHTAU 353533 ● 1♀; Ziv'on, 1km SW; 33.019° N 35.407° E; 15 May 2015; G. Pisanty leg.; SMNHTAU 213926 ● 1♀; ibid.; OLML ● 1♀; ibid; BOLD accession no. ANDIL421-25; SMNHTAU 213927 ● 1♀; ibid.; 33.02° N 35.41° E; 22 Apr. 2016; RMNH ● 1♀; Zomet Shiryon, 5kmW, Rt.91; 33°02.9' N 35°42.3' E; 530 m a.s.l.; 22 May 2011; A. Freidberg leg.; SMNHTAU 94226. – **JORDAN** ● 1♀; 10 km N Jerash; 20 Apr. 2002; M. Snižek leg.; OLML ● 2♀; 20 km N Amman; 620 m a.s.l.; 23 Apr. 2006; K. Deneš leg.; OLML ● 22♀; 30 km NW Ajlun; 600 m a.s.l.; 29 Apr. 2006; ibid. ● 2♀; Ajloun; 6–7 May 2012; M. Kafka leg.; OLML ● 1♀; Kufur; 4–5 May 2012; ibid. ● 2♀; North Shuna; 20–22 Apr. 1996; Ma. & Mi. Halada leg.; OLML. – **SYRIA** ● 1♀; Jisr ash Shugur; 26 May 1996; Mi. Halada leg.; OLML. – **WEST BANK** ● 1♀; Har 'Eval, Yehoshua binNun Althar; 780–856 m a.s.l.; 25 Apr. 2016; L. Friedman leg.; SMNHTAU 243681 ● 1♀; Har Kabbir; 750 m a.s.l.; 5 Feb. 2015; L. Friedman leg.; BOLD accession no. ANDIL411-25; SMNHTAU 202863 ● 1♀; Ma'ale Shomeron; 6 May 2015; L. Friedman leg.; SMNHTAU 244190 ● 1♂; Qedumim, Karme Qedem; 435 m a.s.l.; 2 Feb. 2018; L. Friedman leg.; SMNHTAU 284512.

3.1.2.9. *Andrena* (*Micrandrena*) *convexifrons* Wood, 2021

Figures 15F, 20I

Andrena convexifrons Wood, 2021: 26, ♀♂ [Jordan: OLML]

Distribution and habitat. Endemic to the southern Levant, in scrublands and semi-arid habitats (northern Israel, Jordan; Pisanty et al. 2022b).

Flight period. Mid-March to early June.

Flower records. One female collected from Apiaceae (*Ferula*).

Material examined. HOLOTYPE: JORDAN ● ♀; NW, 16 km WWN of Ajlun; 600 m a.s.l.; 21 May 2007; Z. Kejval leg.; OLML. – **PARATYPES: JORDAN** ● 38♀,2♂; ibid. ● 2♀; ibid.; SMNHTAU 354502, 354503 ● 1♀; Ajlun, 30 km W Jarash; 2 Jun. 2006; Z. Kejval leg.; OLML ● 1♂; Ajloun; 7 May 2012; M. Kafka leg.; OLML ● 3♂; Kufur; 4–5 May 2012; ibid. ● 6♀; 20 km SW Madaba; 31 May 2006; F. Kantner leg.; OLML ● 4♂; North Shuna; 29–30 Apr. 1996; Ma. Halada leg.; OLML ● 3♀,86♂; Zadba/Zadaba [?]; 6 May 2012; M. Kafka leg.; OLML. – **non-type material: ISRAEL** ● 1♀; 10 km S Haifa, Har Karmel/Bet Oren; 14 May 1996; C. Schmid-Egger leg.; CSE ● 1♀; Har Dov, Karst; 33°18.6' N 35°43.2' E; 1380 m a.s.l.; 25 May 2010; A. Freidberg leg.; SMNHTAU 63665 ● 2♀; Jordan Valley, Maale Gilboa, 7 km W Bet Shean; 17 May 1996; C. Schmid-Egger leg.; CSE ● 1♀; Karé Deshe; 19 Mar. 2012; T. Shapira leg.; BOLD accession no. ANDIL027-22; SMNHTAU 132159 ● 3♀; Nahal Batra, Plot C11; 32.913° N 35.681° E; 43 m a.s.l.; 23 May 2019; A. Dorchin & T. Roth leg.; SMNHTAU 306699, 306715, 306723 ● 2♀; Nahal Batra, Plot C12; 32.916° N 35.688° E; 85 m a.s.l.; 23 May 2019; A. Dorchin & T. Roth leg.; SMNHTAU 306787, 306820 ● 1♀; ibid.; BOLD accession no. ANDIL090-22; SMNHTAU 306809 ● 1♀; Nahal Meshushim; 32.939° N 35.662° E; 1 May 2015; G. Pisanty leg.; BOLD accession no. ANDIL051-22; SMNHTAU 213934 ● 1♂; Nahal Oren; 24 May 1995; A. Freidberg leg.; SMNHTAU 353485 ● 2♀; Park haYarden; 32°54.7' N 35°37.6' E; –190 m a.s.l.; 22 May 2011; M. Guershon leg.; SMNHTAU 94355, 94362 ● 1♀; Qazrin; 32°59.2' N 35°41.8' E; 335 m a.s.l.; 22 May 2011; A. Freidberg leg.; SMNHTAU 94277 ● 1♀; Ravid; 17 May 2009; L. Friedman leg.; SMNHTAU 34368 ● 1♂; Ravid; 32.847° N 35.468° E; 29 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462763 ● 1♂; Sea of Galilee, 9 km E Tiberias/En Gev; 17 May 1996; C. Schmid-Egger leg.; CSE ● 1♀; Ya'ar Kedoshim; 30 Mar. 2014; N. Shamir leg.; on *Ferula communis*; BOLD accession no. ANDIL034-22; SMNHTAU 152547 ● 1♀; Zomet Ha'Amaqim (Jalame) [HaAmakim Junction]; 18–22 May 1993; A. Freidberg leg.; SMNHTAU 354465 ● 2♀; ibid.; 26–30 May 1993; SMNHTAU 354466, 354467 ● 1♀; ibid.; TJWC.

3.1.2.10. *Andrena* (*Micrandrena*) *enslinella* Stöckhert, 1924

Figures 15I, 20U

Andrena enslinella Stöckhert, 1924: 169–171, ♀ [S Germany: ZSMC].
Andrena chimaera Blüthgen, 1949: 81 [N Germany: ZMB].
Andrena enslinella Stöckhert: Stöckhert 1942: 573 (first description of ♂).

Distribution and habitat. Broadly west and central Palaearctic (Gusenleitner & Schwarz 2002). Newly reported from the Levant* (Jordan*, Lebanon*).

Flight period. Late April to mid-May, in Europe until June.

Flower preferences. Presumably broadly oligolectic on Brassicaceae (*Brassica*, *Capsella*, *Cardaria*, *Crambe*, *Erucastrum*, *Isatis*, *Sinapis*, *Sisymbrium*). Also visits Asteraceae, Euphorbiaceae, Fabaceae, Plantaginaceae and Rosaceae (Westrich 1989; IUCN 2024).

Remarks. The two Lebanese specimens show a 2.5% difference in COI barcodes compared to Central European populations. Morphologically, there are some slight differences. In the female sex, the Lebanese specimens show the scutum between the punctures with fine granular microreticulation, the surface dull, whereas European specimens (e.g. from Bulgaria) have the scutum polished and shining between the punctures. Specimens from Turkey are intermediate, with the scutum broadly shining but with fine shagreen. The tergal discs of Lebanese females are also slightly more finely punctate (Fig. 15I). In the male sex, this same structural difference can be seen, but the genital capsule displays the same truncate gonocoxites, enlarged gonostyli, and narrow penis valves which are produced into extremely acute points (Fig. 20U). Given the only small genetic distance and the overall very similar morphology (particularly in the genital capsule),

we prefer to treat Levantine specimens as a slightly isolated and slightly diverging population of a widely distributed *Andrena enslinella*.

Material examined. JORDAN ● 1♀; west, Jordan Valley, Dayr Alla [Dayr ʻAllah]; 27 Apr. 1996; Ma. Halada leg.; OLML. – **LEBANON** ● 1♂; Mount Lebanon Governorate, Jabal Moussa Biosphere Res.; 1400 m a.s.l.; 14 May 2023; V. Soon leg.; BOLD accession no. NATBE234-25; TUZ 341644 ● 1♀; Mount Lebanon Governorate, Kesrouane, Jabal Moussa Biosphere Res., Mchati; 1100 m a.s.l.; 16 May 2023; V. Soon leg.; BOLD accession no. NATBE233-25; TUZ 347651. – **TURKEY** ● 1♀; Pozantı, Tekir; 7 Jun. 2006; M. Kafka leg.; BOLD accession no. ANDGP013-25; OLML.

3.1.2.11. *Andrena* (*Micrandrena*) *friedmani* Pisanty sp. nov.

https://zoobank.org/DB7930F8-C908-434F-BAC5-C2D4ACD4D198

Figures 8, 16B, H, L, 20K

Etymology. Named after the Israeli coleopterist Ariel Leib Leonid (a.k.a. Laibale) Friedman, who collected most of the type series, as well as many other rare and unusual Hymenoptera.

Diagnosis. *Andrena friedmani* is distinguished from other Levantine *Micrandrena* by the combination of small body size, finely transversely striated clypeus in the female (Figs 8B, 16B), dark flagellum (Fig. 8A, B), polished-smooth scutum (Figs 8C, 16H), and partly smooth, finely punctate tergum 1 (Figs 8D, 16L). *Andrena tkalcui* Gusenleitner & Schwarz and *A. calandra* Warncke are also small-sized with a shiny scutum, but easily differ by the flagellum which is anteriorly orange. In addition, in *A. tkalcui*, the female clypeus is not striated (Fig. 17C), the scutum is often partly shagreened centrally (Fig. 17H), tergum 1 is shagreened and impunctate, the dorsal gonocoxite lobe is rounded apically (Fig. 20F), and sternum 8 is apically emarginate (Fig. 20W). In the female of *A. calandra*, tergum 1 is shagreened and impunctate, whereas in the male, all terga are more strongly punctured (Fig. 6D), and the genitalia lacks a strong dorsal gonocoxite lobe (Fig. 20H).

Description. FEMALE. ***Body length:*** 5.5–6 mm. — ***Integumental colour:*** Body black. Flagellum dark brown, slightly tinted reddish. Legs brown to black. Wings slightly infuscate, veins golden to brown, stigma golden centrally (Fig. 8A). Tergal marginal zones black basally, more brownish apically (Fig. 8D). — ***Pubescence:*** Clypeus with rather sparse, medium-lengthed, semi-erect white hair. Supraclypeal area with short erect white hair. Paraocular area and scape with dense, medium-lengthed erect white hair (Fig. 8A, B). Frons and ocellar triangle with sparse, medium-lengthed white hair. Preoccipital ridge with long, erect whitish hair (Fig. 8A–C). Lower of half of facial fovea with whitish hair, upper half with brownish to whitish hair, depending on angle of view (Fig. 8C). Scutum, scutellum and metanotum with erect whitish hair of varying length, longer and thicker peripherally, mostly minute and inconspicuous centrally, underlying cuticle visible (Fig. 8A, C). Mesepisternum with very long white hair (Fig. 8A). Propodeal corbicula incomplete, dorsoposterior fringe with long white hair, corbicular surface with sparse and long, simple white hairs. Leg hair mostly whitish; flocculus incomplete, white; tibial scopa composed of white simple hairs (Fig. 8A). Tergal discs centrally with minute inconspicuous hair, laterally with small patches of sparse, short white hair. Tergal marginal zones 2–3 with broadly interrupted, weak bands of white hair; 4 with very weak, almost continuous band of extremely sparse whitish hair. Terminal fringe yellowish- to brownish-white (Fig. 8A, D). — ***Head:*** 1.2 times broader than long. Galea very finely shagreened (Fig. 8B). Labral process trapezoidal, apical margin blunt (Fig. 16B). Clypeus moderately domed, basal half matt and finely transversely striated, apical half gradually more finely shagreened, becoming partly shiny near apex. Clypeus punctation of moderate strength and size, distance between punctures 1–2 puncture diameters (Figs 8B, 16B). Upper part of paraocular area longitudinally striated. Flagellomere 1 about 1.2 times longer than 2+3, 2 slightly shorter than 3 (Fig. 8A, B). Frons finely, strongly rugose-areolate, with complete medial carina, flanked by very fine areolation almost resembling dense punctures (Fig. 8B). Facial fovea moderately broad and very shallow above, 0.4 times as broad as antennocular distance, deeper and somewhat narrower below, extending from level of lower end of lateral ocellus to slightly above base of clypeus, fovea almost adjacent to compound eye, lower half occasionally separated by very narrow, shiny cuticular strip. Distance of fovea from lateral ocellus about 2 ocellus diameters (Fig. 8B, C). Ocelloccipital distance about 0.8 ocellus diameter. Preoccipital ridge moderately carinate (Fig. 8C). — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Scutum and scutellum very shiny, almost completely smooth, strongly and densely punctured, distance between punctures 0.5–1 puncture diameter (Figs 8C, 16H). Posterior part of mesepisternum finely alveolate, anterior part strongly and densely, obliquely punctured. Surface of propodeal corbicula finely alveolate, with large punctures around hair bases, surrounded by weak star-shaped wrinkles. Posterior part of propodeum strongly differentiated into horizontal vs. vertical regions, strongly rugose-areolated. Propodeal triangle poorly differentiated from flanking regions, basal half very coarsely rugose-areolated, becoming more radially rugose near basal margin, apical half gradually very finely sculptured (Fig. 8C). Hind pretarsal claw with distinct inner tooth. Recurrent vein 1 meeting submarginal cell 2 close to its middle. Nervulus more or less interstitial (Fig. 8A). — ***Metasoma:*** Tergal disc 1 shiny and more or less smooth, with fine, irregular punctation becoming dense apically (Figs 8D, 16L). Tergal discs 2–4 strongly shagreened and matt, essentially impunctate. Tergal marginal zones weakly depressed, weakly arched, 2–3 cen-

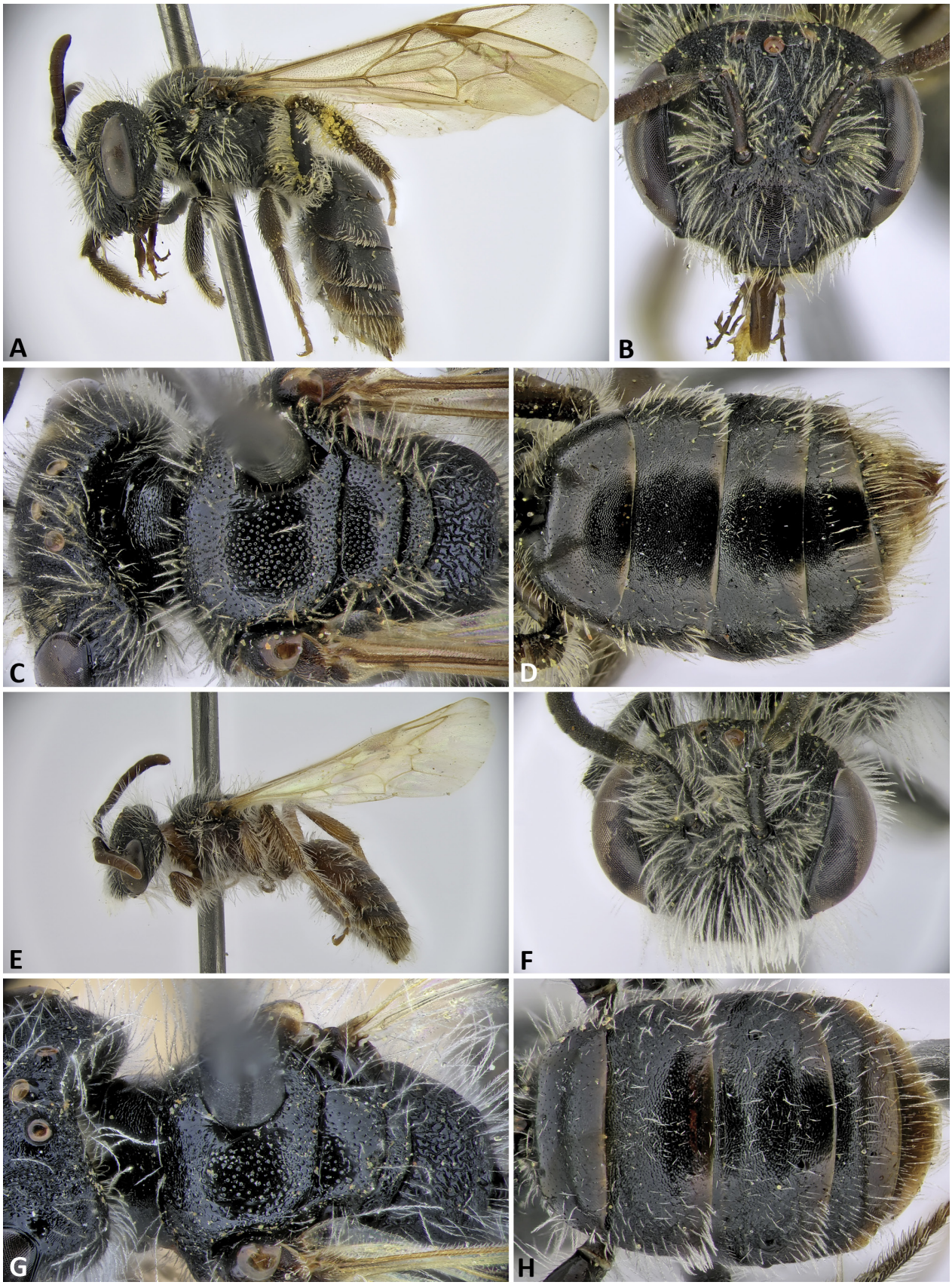

Figure 8. *Andrena friedmani* Pisanty **sp. nov. A** Female habitus; **B** female head; **C** female vertex and mesosoma; **D** female metasoma; **E** male habitus; **F** male head; **G** male vertex and mesosoma; **H** male metasoma.

trally occupying 0.4–0.5 of tergal length, cuticle shiny, mostly shagreened, apically often partly smooth, punctation absent (Fig. 8D). Pygidial plate normally developed.

— **MALE.** ***Body length:*** 5–5.5 mm. — ***Integumental colour:*** Body and legs black. Flagellum black to brown. Apical tarsomeres black to brown. Wings almost hya-

line, veins golden to light brown, stigma golden centrally (Fig. 8E). Tergal marginal zones black basally, dark brown to reddish-brown apically (Fig. 8H). — ***Pubescence:*** Completely white. Clypeus with dense long hair, underlying cuticle partly concealed. Paraocular area with moderately dense, medium-lengthed hair. Scape and area around antennal sockets with dense long hair (Fig. 8E, F). Frons and ocellar triangle with moderately dense, medium-lengthed erect hairs. Preoccipital ridge with long erect hairs. Genal area with medium-lengthed hair dorsally, long hair ventrally (Fig. 8E–G). Scutum, scutellum and metanotum with sparse, short to long erect hair, longest and most prominent peripherally, underlying cuticle visible (Fig. 8G). Mesepisternum with very long hair (Fig. 8E). Propodeum with long hair. Terga centrally with inconspicuous short thin hair, laterally with moderately dense medium-lengthed hair, on marginal zones 2–4 creating distinct, broadly interrupted hair bands (Fig. 8E, H). — ***Head:*** 1.25 times broader than long (Fig. 8F). Labral process broad trapezoidal, apical margin concave. Clypeus domed, very shiny, strongly and very densely punctured, distance between punctures 0–1 puncture diameters, without impunctate midline. Lower part of paraocular area smooth and densely punctate, upper part with a narrow, finely punctured strip near inner margin of compound eye, elsewhere strongly longitudinally striated. Flagellomere 1 0.9 times shorter than 2+3, 2 distinctly shorter than 3 (Fig. 8F). Frons strongly rugose-areolate, punctures blended within the rugosity can occasionally be discerned. Ocelloccipital distance about 1 ocellus diameter. Preoccipital ridge moderately carinate (Fig. 8G). — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Scutum very shiny, partly shagreened on anterior margin, elsewhere weakly roughened to almost completely polished, punctation dense and strong, distance between punctures 0.5–1.5 puncture diameters. Scutellum completely polished, similarly punctured (Fig. 8G). Mesepisternum finely alveolate, overlayed by dense, shallow oblique punctures creating an almost honeycomb-like shallow rugosity. Anteroventral edge of propodeum reticularly shagreened, rest of propodeum coarsely areolated. Propodeal triangle strongly and coarsely sculptured, basal part radially rugose, apical part rugose-areolate (Fig. 8G). Recurrent vein 1 meets submarginal cell 2 close to its middle or proximal to it. Nervulus interstitial to very slightly postfurcal. — ***Metasoma:*** Tergal disc 1 shiny and more or less smooth basally, weakly to strongly shagreened apically, punctation fine, distance between punctures 0.5–2 puncture diameters. Tergal discs 2–4 matt, strongly granularly shagreened, apically occasionally partly smooth, punctation dense, usually hardly discernible from underlying shagreening, distance between punctures about 1 puncture diameter. Tergal marginal zones weakly to strongly shagreened basally, gradually smooth apically, impunctate, 2–4 distinctly depressed (Fig. 8H). — ***Genitalia and hidden sterna:*** Gonocoxites with strong, elongate and pointed, parallel-sided dorsal lobes. Gonostyli simply built, elongate, finger-shaped, blade flattened. Penis valves narrow and elongate, very slightly broadening close to visible base, hereafter gradually tapering apically (Fig. 20K). Sternum 8 columnar, broadening apically, apical margin blunt-ended.

Distribution and habitat. Endemic to scrublands in the southwestern Levant (northern Israel, West Bank).

Flight period. February to early March.

Flower records. None.

Type material. HOLOTYPE: ISRAEL ● 1♀; Hare Gilboa' [Mount Gilboa], Har Ahino'am; 32.502° N 35.414° E; 450 m a.s.l.; 23 Feb. 2012; L. Friedman leg.; SMNHTAU 118591. – **PARATYPES: ISRAEL** ● 1♀; Har Ahino'am; 32.502–6° N 35.408–14° E; 440 m a.s.l.; 3 Mar. 2025; G. Pisanty leg.; SMNHTAU 463992 ● 1♂; ibid.; 32.5035° N 35.413° E; 438 m a.s.l.; pan trap; SMNHTAU 463903 ● 1♀; Hare Gilboa', Har Ahino'am; 32.502° N 35.414° E; 450 m a.s.l.; 23 Feb. 2012; L. Friedman leg.; SMNHTAU 118600 ● 2♂; ibid.; SMNHTAU 118594, 118606. – **WEST BANK:** ● 1♂; Har Kabbir; 750 m a.s.l.; 5 Feb. 2015; L. Friedman leg.; RMNH ● 1♂; ibid.; BOLD accession no. ANDIL410-25; SMNHTAU 202856 ● 1♀; Zomet Gittay Avisar [Gitai Avisar Junction], 3 km W Ariel, Rt. 5; 19 Feb. 2016; L. Friedman leg.; BOLD accession no. ANDIL424-25; SMNHTAU 234151.

3.1.2.12. *Andrena* (*Micrandrena*) *hebraica* Pisanty & Wood sp. nov.

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Figures 9, 17E, J, 21J

Etymology. Nominative feminine singular form of the Latin adjective "hebraicus" (= Hebrew).

Diagnosis. Within the *Andrena minutula* species group, *A. hebraica* belongs to the species around *A. spreta* Pérez, which are characterized in the female by a clypeus which is non-rugose, weakly domed and partly to fully shagreened, a scutum which is shagreened to partly smooth, with fine, relatively sparse punctures, and terga which are mostly shagreened and impunctate. In the Levant and Cyprus, these include *A. aphroditae* **sp. nov.**, *A. minutuloides*, *A. spreta*, *A. tiaretta* and *A. tkalcui*. *Andrena hebraica* differs from all the above species by the sculpturing of tergal disc 3 and to a lesser extent 2, which are apically shiny, instead of completely shagreened and matt. This difference is difficult to illustrate by photographs, but is clearly visible to the eye under magnification. In addition, the clypeus is more clearly domed and more strongly and extensively shagreened compared to *A. spreta* and *A. tiaretta* (Figs 8B, 17E), the clypeus is more finely punctured and the scutum more densely punctured compared to *A. minutuloides*, and the flagella and wing veins are darker compared to *A. tkalcui*.

Within the Levantine and Cypriot members of the *A. minutula* species group, the male of *A. hebraica* is characterized by a flagellomere 1 which is subequal to slightly longer than 3, clypeus and scutum which are partly to ful-

ly shagreened and densely punctured, tergal discs 2 and 3 which are more strongly shagreened basally vs. apically, and characteristic genitalia lacking dorsal gonoxocite lobes and with gonostyli that converge apically. The genitalia are almost identical to those of *A. povolnyi* Warncke **stat. nov.** from Afghanistan, but they clearly differ from other similar species in the region of study as follows: lack of dorsal gonocoxite lobes (present in *A. cervina* and *A. spreta*), gonostyli more strongly converging apically compared to *A. spreta* and *A. aphroditae*, gonostyli slenderer compared to *A. aphroditae*, gonostyli shorter and penis valves shorter and narrower compared to *A. tiaretta* (Figs 20J, 21G, I, J).

Description. FEMALE. ***Body length:*** 5.5–6.5 mm. — ***Integumental colour:*** Body and legs predominantly black. Flagellum black, partly covered by grayish setae, distal flagellomeres occasionally brownish. Apical tarsomeres brown to black. Wings weakly infuscate, veins brown, stigma brownish centrally (Fig. 9A). Tergal marginal zones black, apical margins black to brown (Fig. 9D). — ***Pubescence:*** Body and leg hair mostly brightly coloured. Clypeus with sparse, short and thin, semi-erect white hairs. Supraclypeal area with short whitish hairs. Paraocular area and scape with dense, medium-lengthed whitish hairs (Fig. 9A–C). Frons with sparse, medium-lengthed whitish hairs. Facial fovea in dorsal view with brownish hair on upper ⅓ of fovea, white hair on lower ⅔ (Fig. 9B, C). Preoccipital ridge with long erect whitish hair. Genal area with whitish hair, short on dorsal part, medium to long on ventral part (Fig. 9A–C). Scutum, scutellum and metanotum with moderately dense, erect whitish to yellowish hair, centrally minute to short, with some scattered longer hairs, underlying cuticle visible, peripherally short to medium-lengthed (Fig. 9A, C). Mesepisternum with long whitish hair (Fig. 9A). Propodeal corbicula incomplete, posterodorsal fringe with long whitish plumose hairs, corbicular surface with sparse, long simple whitish hairs. Leg hair mostly whitish, some golden reflections appear especially on tarsi. Flocculus incomplete, white. Tibial scopal hairs simple, whitish, becoming brownish near posterobasal edge of tibia (Fig. 9A). Tergal discs centrally with sparse, inconspicuous minute thin hair, laterally with sparse short to medium white hair. Tergal marginal zones 2–4 with distinct bands of white hair, moderately dense and broadly interrupted on 2–3, sparser but almost continuous on 4. Terminal fringe golden to brownish, flanked by some long white hairs (Fig. 9A, D). — ***Head:*** 1.2 times broader than long. Mandibles bidentate, moderately crossed. Galea finely shagreened (Fig. 9B). Labral process fairly large, trapezoidal, not much broader than long. Clypeus weakly domed, surface entirely finely shagreened and matt, except for an occasional shinier apical margin, punctation moderately strong, distance between punctures 1–2 puncture diameters, an impunctate midline is not clearly discernible (Figs 9B, 17E). Supraclypeal area finely longitudinally striated. Lowermost part of paraocular area smooth and shiny, densely and finely punctured. Frons and rest of paraocular area strongly longitudinally striated, some interspersed punctures can occasionally be discerned on frons. Flagellomere 1 as long as 2+3, 2 about as long as 3 (Fig. 9B). Facial foveae narrow and elongate, extending from level of lower end of lateral ocellus to slightly above base of clypeus, upper part 0.4–0.5 times as broad as antennocular distance, lower ⅔ distinctly narrowed, here separated from compound eye by distinct strip of smooth cuticle. Distance of fovea from lateral ocellus about 2 ocellus diameters (Fig. 9B, C). Lateral ocelli connected posteriorly by trough-shaped horizontal furrow. Ocelloccipital distance about 0.9 ocellus diameter. Preoccipital ridge weakly to distinctly carinate (Fig. 9C). — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Entire scutum strongly shagreened and matt, densely punctured, distance between punctures 0.5–1.5 puncture diameters, puncture strength varying among individuals. Scutellum similar, occasionally somewhat shinier (Figs 9C, 17J). Mesepisternum strongly, finely reticulated, anterior part overlayed with dense, strong oblique punctures. Surface of propodeal corbicula finely reticulated, with few large punctures around hair bases. Posterior part of propodeum strongly differentiated into horizonal vs. vertical regions. Propodeal triangle delineated by lateral carinae, horizontal part strongly and coarsely rugose, radially rugose near base, rugose-areolate further down, vertical part very finely areolated (Fig. 9C). Posterolateral part of propodeum strongly, finely rugose-areolate. Hind pretarsal claw with inner tooth. Recurrent vein 1 meets submarginal cell 2 at its middle or slightly proximal to it. Nervulus interstitial to weakly antefurcal (Fig. 9A). — ***Metasoma:*** Tergal disc 1, basal part of disc 2 and occasionally of 3 strongly shagreened and matt, impunctate. Tergal disc 4, apical part of tergal disc 2 and at least apical part of disc 3 shiny, partly to fully smooth, the tight shagreening of basal areas here gradually disintegrating into irregular, dense fine punctation, distance between punctures up to 1 puncture diameter. Tergal marginal zones weakly depressed, impunctate, 2–3 centrally occupying 0.4–0.5 of tergum length, 1–2 distinctly shagreened, the following gradually more weakly so (Fig. 9D). Pygidial plate normally developed. — **MALE.** ***Body length:*** 5–6 mm. — ***Integumental colour:*** As in female (Fig. 9E, H). — ***Pubescence:*** Clypeus with moderately dense, medium-lengthed, semi-erect white hairs, underlying cuticle visible (Fig. 9E, F). Supraclypeal area with short erect whitish hair. Paraocular area with moderately dense, medium-lengthed erect hair, whitish to black on outer part bordering compound eye, whitish on inner part. Frons and paraocular area with sparse, erect short to medium hair of varying brightness, usually with predominantly dark hairs on dorsal parts (Fig. 9F, G). Preoccipital ridge with long erect whitish hairs. Genal area often with few short to medium erect dark hairs around upper margin of compound eye, elsewhere with whitish hairs, short dorsally, gradually long ventrally (Fig. 9E–G). Scutum, scutellum and metanotum with moderately dense erect whitish hair, centrally with mixed short and long hairs, underlying cuticle visible, peripherally medium to long. Mesepisternum and propodeum with very long white hairs (Fig. 9E, G). Leg hair mostly

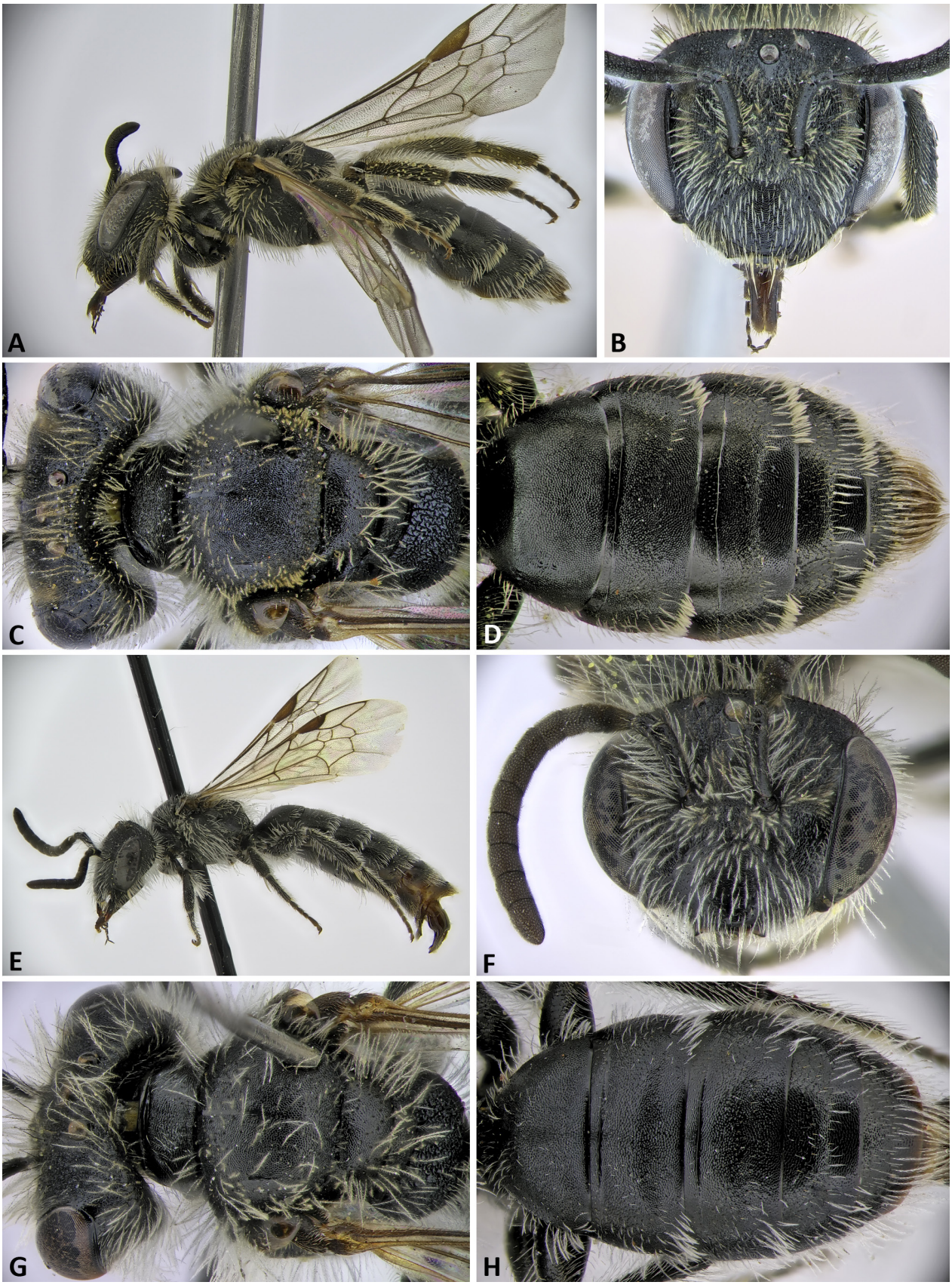

Figure 9. *Andrena hebraica* Pisanty & Wood **sp. nov. A** Female habitus; **B** female head; **C** female vertex and mesosoma; **D** female metasoma; **E** male habitus; **F** male head; **G** male vertex and mesosoma; **H** male metasoma.

white, with some subtle golden reflections mostly on tarsi (Fig. 9E). Tergal discs centrally with minute inconspicuous bright hair, laterally and on base of disc 1 with moderately dense, medium-lengthed white hair. Tergal marginal zones 2–4 with strong, broadly interrupted bands of white hair, slightly extending onto following discs. Tergal

marginal zone 5 with very sparse, continuous band of long whitish hair. Terminal fringe whitish (Fig. 9E, H). — ***Head:*** About 1.2 times broader than long (Fig. 9F). Mandibles bidentate, moderately crossed. Galea finely shagreened. Labral process trapezoidal to almost rectangular, apical margin concave. Clypeus moderately domed, strongly shagreened and matt basally, shiny and weakly shagreened apically, extent of shagreening highly variable among individuals, punctation moderately dense, distance between punctures 0.5–1.5 puncture diameters, without impunctate midline. Outer part of paraocular area bordering compound eye smooth and finely punctured. Supraclypeal area, frons and inner part of paraocular area longitudinally striated, occasionally with hints of punctures blended into the rugosity. Flagellomere 1 1.1–1.3 times longer than 3, distinctly shorter than 2+3, 2 distinctly shorter than 3 (Fig. 9F). Ocelloccipital distance about 1 ocellus diameter. Preoccipital ridge moderately carinate (Fig. 9G). — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Scutum and scutellum usually strongly shagreened and matt, rarely weakly shagreened and shiny, punctation distinct, distance between punctures 0.5–1.5 puncture diameters (Fig. 9G). Mesepisternum finely alveolated, overlayed by weak oblique punctures. Anterolateral part of propodeum ventrally reticulated, dorsally gradually rugose-areolate. Posterior part of propodeum rugose-areolate, triangle weakly delineated, radially rugose near base, coarsely rugose-areolate further down, very finely so on vertical part (Fig. 9G). Recurrent vein 1 meets submarginal cell 2 at its middle or slightly proximal to it. Nervulus interstitial to weakly antefurcal (Fig. 9E). — ***Metasoma:*** As in female (Fig. 9H). — ***Genitalia and hidden sterna:*** Gonocoxites apically truncate, without dorsal lobe. Gonostyli more or less finger-shaped, inner and outer margins with slight kink at mid-length, distal part more strongly converging apically. Penis valves moderately narrow basally, gradually tapering apically (Fig. 21J). Sternum 8 columnar, broadening apically, apical margin blunt to slightly rounded.

Distribution and habitat. Mediterranean shrublands in Israel, the West Bank, Jordan and Lebanon. Mostly absent from the coastal plain, where it is replaced by *A. tiaretta*.

Flight period. Late January to mid-May.

Flower records. Collected mostly on Brassicaceae (*Hirschfeldia*, *Isatis*, *Ochtodium*, *Rapistrum*, *Sinapis*), also on Apiaceae (*Ferula*), Asteraceae (*Anthemis*, *Leontodon*), Campanulaceae (*Campanula*), Fabaceae (*Trifolium*) and Lamiaceae (*Nepeta*, *Salvia*).

Type material. HOLOTYPE: ISRAEL ● 1♀; Nahal Keziv [Nahal Kziv]; 33.0465° N 35.226° E; [197 m a.s.l.]; 26 Feb. 2021; G. Pisanty leg.; BOLD accession no. ANDIL490-25; SMNHTAU 357574. – **PARATYPES: ISRAEL** ● 2♂; Ahu Binyamina Nature Reserve; 32°30' N 34°56' E; 8 Mar. 2017; A. Freidberg leg.; SMNHTAU 269485, 269486 ● 1♀; Avivim; 25 Apr. 1983; A. Hefetz leg.; SMNHTAU 353608 ● 3♀; Banias; 18 Apr. 1992; R. Kasher leg.; SMNHTAU 353683 to 353685 ● 1♀; Bar'am; 4 Apr. 2014; O. Winberger leg.; SMNHTAU 183658 ● 1♀; Basmat Tab'un; 14 Apr. 1999; L. Friedman leg.; SMNHTAU 367678 ● 1♀; Beit Govrin; 15 Apr. 2017; T. Roth leg.; SMNHTAU 272634 ● 1♀; ibid.; 20 Apr. 2017; SMNHTAU 272874 ● 1♂; Beit Nir; 11 Mar. 2018; T. Roth leg.; SMNHTAU 290320 ● 1♀; ibid.; on Apiaceae; RMNH ● 1♀; ibid.; on *Anthemis*; SMNHTAU 290302 ● 3♀; Bene Yehuda – Golan; 31 Mar. 1991; R. Kasher leg.; on *Trifolium purpureum*; SMNHTAU 353736 to 353738 ● 1♂; ibid.; SMNHTAU 353509 ● 1♂; Bet Guvrin; 10 Mar. 2004; A. Freidberg leg.; SMNHTAU 353483 ● 1♀; Biriyya Forest; 32.99–33.00° N 35.52–53° E; 19 May 2023; G. Pisanty leg.; SMNHTAU 429812 ● 1♀; Carmel; 12 Mar. 1940; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; Deganya A, Bet Gordon; 3 Mar. 1942; Y. Palmoni leg.; on *Diplotaxis* & *Sinapis alba*; SMNHTAU 180731 ● 3♀; 'En Tina NR; 33.08417° N 35.642° E; 70–80 m a.s.l.; 24 Mar. 2019; A. Dorchin, T. Roth & A. Sviri leg.; SMNHTAU 310136, 310227, 310279 ● 1♂; 'En Ziwan, camping cite [site]; 955 m a.s.l.; 16 Mar. 2020; L. Friedman leg.; SMNHTAU 332994 ● 1♀; Gal'on; 4 Apr. 2018; T. Roth leg.; on *Isatis lusitanica*; SMNHTAU 290448 ● 1♀; ibid.; on *Hirschfeldia incana*; SMNHTAU 290473 ● 1♀; Gal'on, 2kmNW; 31.649° N 34.837° E; 5 Apr. 2015; G. Pisanty leg.; SMNHTAU 209389 ● 1♀; Gamla; 29 Apr. 1988; I. Yarom leg.; SMNHTAU 353715 ● 3♀; Gilat Forest; 31.341° N 34.654° E; 1 Mar. 2023; G. Pisanty leg.; sweep; SMNHTAU 422802 to 422804 ● 1♀; Gilat Forest; 31.35° N 34.66° E; 2 Mar. 2022; G. Pisanty leg.; p.trap; SMNHTAU 386118 ● 1♂; Gilat Research Center, 500m NNE; 31.341° N 34.6693° E; 2 Mar. 2022; G. Pisanty leg.; pan trap; SMNHTAU 386292 ● 1♂; Gilat Research Center, 500m NNE, fallow field; 31.3405° N 34.670° E; 2 Mar. 2022; G. Pisanty leg.; sweep; SMNHTAU 385044 ● 1♂; ibid.; NHMUK ● 1♂; Gonen, 21km NW Zefat; 10 Mar. 1990; R. Kasher leg.; on *Sinapis alba*; SMNHTAU 353508 ● 1♀; HaGolan, N Nahal Yadbir; 33.052° N 35.646° E; 120–130 m a.s.l.; 24 Mar. 2019; A. Dorchin, T. Roth & A. Sviri leg.; SMNHTAU 310202 ● 1♀; HaGolan, S Nahal Neshef; 33.092° N 35.644° E; 100 m a.s.l.; 24 Mar. 2019; Dorchin, T. Roth & A. Sviri leg.; SMNHTAU 310151 ● 1♀; Haifa Univ.; 10 Apr. 1988; I. Yarom leg.; SMNHTAU 353713 ● 1♂; Hanita; 27 Mar. 1976; D. Gerling leg.; SMNHTAU 353469 ● 3♀; Har Ahino'am; 32.502–6° N 35.408–14° E; 440 m a.s.l.; 3 Mar. 2025; G. Pisanty leg.; SMNHTAU 463990, 463994, 464001 ● 4♂; ibid.; SMNHTAU 463946, 463947, 463951, 463952 ● 2♂; ibid.; OLML ● 1♂; ibid.; ZMB ● 1♀; ibid.; on yellow Asteraceae; SMNHTAU 463935 ● 3♀; Har Karmila; 31.78–79° N 35.02–04° E; 5 Mar. 2017; G. Pisanty leg.; SMNHTAU 268883, 268884, 268886 ● 1♂; ibid.; SMNHTAU 268882 ● 1♀; Har Meron; 32.9949° N 35.4166° E; 21 Apr. 2017; G. Pisanty leg.; SMNHTAU 270981 ● 1♀; Har Tuv; 3 Mar. [19]54; Kadman leg.; SMNHTAU 353581 ● 1♂; Hare Gilboa', Har Ahino'am; 32.502° N 35.414° E; 450 m a.s.l.; 23 Feb. 2012; L. Friedman leg.; SMNHTAU 118603 ● 1♀; HareGilboa', Merav, HarAvinadav; 32°27.7' N 35°26' E; 420 m a.s.l.; 11 Apr. 2011; A. Freidberg leg.; SMNHTAU 91746 ● 1♂; ibid.; BOLD accession no. ANDIL512-25; SMNHTAU 91745 ● 2♀; Harel; 10 Mar. 2020; T. Roth leg.; SMNHTAU 346514, 346557 ● 1♀; ibid.; 21 Feb. 2020; on *Isatis lusitanica*; SMNHTAU 338454 ● 1♂; Hof Rosh Haniqra N.R.; 33.076–85° N 35.105–9° E; 18 Mar. 2025; G. Pisanty leg.; SMNHTAU 464967 ● 1♀; Horbat Kefar Lakhish; 31.575° N 34.853° E; 15 Mar. 2021; G. Pisanty leg.; pan trap; SMNHTAU 358991 ● 2♀; ibid.; 31.575° N 34.8532° E; 5 Mar. 2021; sweep; SMNHTAU 358851, 358861 ● 1♂; ibid.; SMNHTAU 358864 ● 1♀; Hulda; 23 Mar. 2017; T. Roth leg.; SMNHTAU 272678 ● 2♂; Jer[usalem?]; 27 Feb. 1940; SMNHTAU ● 1♀; ibid.; 10 Apr. 1940 ● 1♀; Jerusalem; 28 Jan. 1940; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; ibid.; 10 Feb. 1940 ● 1♀; ibid.; 7 Mar. 1940 ● 1♀; ibid.; 24 [or 29?] Mar. 1940 ● 1♀; ibid.; 18 Apr. 1940 ● 1♀; Jerusalem, Mt. Scopus; 19 Apr. 1945; SMNHTAU ●

1♀; Jerusalem, Mt.Scopus – U.[niversity?]; 15 Mar. 1946; SMNHTAU ● 1♀; Jish; 29 Mar. 2014; O. Winberger leg.; SMNHTAU 183606 ● 1♂; Kabri; 17 Mar. 1973; M. Kaplan leg.; SMNHTAU 353463 ● 1♀; Kefar Giladi S; 1 Apr. 1997; R. Kasher leg.; SMNHTAU 353756 ● 1♂; ibid.; SMNHTAU 353550 ● 2♀; ibid.; 12 Apr. 1997; SMNHTAU 353767, 353768 ● 1♂; ibid.; SMNHTAU 353549 ● 1♀; Kfar Masaryk; 32.87° N 35.13° E; 4 Apr. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462866 ● 1♀; Kfar Menahem; 1 Mar. 2008; G. Pisanty leg.; SMNHTAU 31528 ● 2♀; Kfar Menahem; 18 Mar. 2018; T. Roth leg.; on *Sinapis alba*; SMNHTAU 276683, 276686 ● 1♀; ibid.; RMNH ● 1♂; ibid.; on *Ferula communis*; SMNHTAU 290271 ● 1♂; ibid.; on *Campanula rapunculus*; SMNHTAU 276679 ● 2♀; Kfar Shammay; 13 Apr. 1988; I. Yarom leg.; SMNHTAU 353717, 353718 ● 1♀; Kiryat Gat; 19 Apr. 1977; A. Freidberg leg.; SMNHTAU 353617 ● 2♀; Kokhav HaYarden, moat of castle; 26 Mar. 2001; L. Friedman leg.; SMNHTAU ● 1♀; Lahav; 27 Feb. 1974; A. Freidberg leg.; SMNHTAU ● 2♀; Lakhish; 18 Feb. 2013; T. Shapira leg.; SMNHTAU 133191, 133245 ● 1♂; ibid.; SMNHTAU 133247 ● 1♀; ibid.; 19 Mar. 2013; SMNHTAU 150243 ● 1♀; Lakhish, 3km NE; 31.575° N 34.870° E; 11 Mar. 2016; G. Pisanty leg.; SMNHTAU 236050 ● 1♀; ibid.; 31.578° N 34.870° E; 19 Feb. 2016; SMNHTAU 234220 ● 1♂; ibid.; SMNHTAU 234219 ● 2♀; ibid.; 26 Feb. 2016; SMNHTAU 234630, 234640 ● 1♂; ibid.; 4 Mar. 2016; BOLD accession no. ANDIL426-25; SMNHTAU 235274 ● 1♀; ibid.; 31.579° N 34.871° E; on *Sinapis*; SMNHTAU 235195 ● 1♀; Lehavim, 400m SE; 31.368° N 34.829° E; 27 Jan. 2021; G. Pisanty leg.; SMNHTAU 354989 ● 1♂; Ma'ale Gamla; 32.885–92° N 35.681–4° E; 28 Feb. 2022; G. Pisanty leg.; SMNHTAU 385113 ● 2♀; Majdal Shams; 33.262° N 35.755° E; 1100 m a.s.l.; 27 Apr. 2020; G. Pisanty leg.; SMNHTAU 334295, 334296 ● 1♀; Malkiyya; 27 Apr. 2014; N. Atkin leg.; SMNHTAU 182993 ● 6♀; Ma'yan Barukh; 33.232° N 35.611° E; 29 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462796, 462799, 462808, 462809, 462815, 462816 ● 1♂; Me'arat Yishah, 0.5km E; 32.718° N 35.007° E; 22 Feb. 2019; G. Pisanty leg.; BOLD accession no. ANDIL466-25; SMNHTAU 321645 ● 2♀; Merom-Golan, N Golan Height; 30 Mar. 1997; R. Kasher leg.; ZMB ● 1♀; ibid.; 3 Apr. 1997; SMNHTAU 353752 ● 1♀; ibid.; 1000 m a.s.l.; 23 Apr. 1997; SMNHTAU 353751 ● 1♂; Monfort; 33°02.635' N 35°13.271' E; 4 Mar. 2010; A. Freidberg leg.; SMNHTAU 47055 ● 1♂; Montfort, Nahal Keziv; 28 Feb. 2018; G. Pisanty leg.; BOLD accession no. ANDIL451-25; SMNHTAU 286331 ● 1♂; Moradot HaGolan NR, Nahal Neshef, Site B3; 33.094° N 35.650° E; 184 m a.s.l.; 24 Apr. 2019; A. Dorchin, T. Roth & O. Halbershtat leg.; BOLD accession no. ANDIL461-25; SMNHTAU 308947 ● 1♂; Moradot HaGolan NR, Tel 'Arfiyya, Plot A2; 33.105° N 35.657° E; 264 m a.s.l.; 7 Apr. 2019; A. Dorchin, A. Sviri & O. Halbershtat leg.; BOLD accession no. ANDIL460-25; SMNHTAU 308860 ● 1♀; Mt. Carmel, En Hod; 4 Apr. 1999; S.P.M. Roberts leg.; TJWC ● 1♀; Mt. Meron; 900 m a.s.l.; 14–15 Apr. 1999; S.P.M. Roberts leg.; TJWC ● 1♀; MtMeron; 1000 m a.s.l.; 13 Apr. 1988; I. Yarom leg.; SMNHTAU 353720 ● 2♂; Nachshon; 20 Feb. 2020; T. Roth leg.; on *Leontodon tuberosus*; SMNHTAU 338538, 338539 ● 1♀; Nachson; 20 Feb. 2020; T. Roth leg.; SMNHTAU 346691 ● 1♂; ibid.; SMNHTAU 346688 ● 8♀; Nahal Dishon; 1 Apr. 1991; R. Kasher leg.; SMNHTAU 353741, 353742, 353744 to 353748, 353750 ● 1♂; ibid.; SMNHTAU 353749 ● 1♀; ibid.; on *Ochtodium aegyptiacum*; SMNHTAU 353739 ● 1♂; Nahal Hazav, BitronotRuhama; 31°32' N 34°42' E; 5 Apr. 2005; A. Freidberg leg.; SMNHTAU 353496 ● 5♀; Nahal Maresha; 31.577° N 34.858° E; 220 m a.s.l.; 15 Mar. 2021; G. Pisanty leg.; sweep; SMNHTAU 359305, 359306, 359315, 359316, 359319 ● 2♂; Nahal Mezar; 32.75–7° N 35.69° E; 1 Mar. 2022; G. Pisanty leg.; sweeping; SMNHTAU 385149, 385168 ● 2♂; ibid.; RMNH ● 1♀; Nahal Shemarya; 31.341° N 34.6567° E; 2 Mar. 2022; G. Pisanty leg.; pan trap; SMNHTAU 386162 ● 1♀; ibid.; OLML ● 3♀; ibid.; 31.341° N 34.6568° E; sweeping; OLML ● 1♀; ibid.; 31.3412° N 34.657° E; M. Ben-Yosef leg.; SMNHTAU 386227 ● 1♀; Nahal Zilzal; 31.7° N 35.03° E; 25 Feb. 2019; G. Pisanty leg.; SMNHTAU 321739 ● 1♂; ibid.; SMNHTAU 321751 ● 1♂; Nahshon; 25 Mar. 2010; G. Pisanty leg.; pan trap; BOLD accession no. ANDIL507-25; SMNHTAU 60450 ● 1♀; Nahshon; 26 Mar. 2018; T. Roth leg.; on *Sinapis alba*; SMNHTAU 290562 ● 1♀; Nahshon junction; 9 Mar. 2017; T. Roth leg.; SMNHTAU 276554 ● 1♀; ibid.; BOLD accession no. ANDIL448-25; SMNHTAU 274104 ● 2♂; ibid.; SMNHTAU 274072, 274119 ● 1♀; Nahshonim; 25 Apr. 2023; S. Asis leg.; SMNHTAU 414794 ● 1♂; Netanya, Irus Ha'Argaman NR; 24 Feb. 2021; ITI Bee Course leg.; SMNHTAU 366434 ● 1♀; Netiv Halamed He; 26 Feb. 2009; G. Pisanty leg.; SMNHTAU 27558 ● 1♀; Netiv Halamed Heh; 27 Mar. 2017; T. Roth leg.; SMNHTAU 272976 ● 1♀; Park Britannia; 24 Apr. 2011; T. Koznichki leg.; pan trap; SMNHTAU 354431 ● 1♀; ibid.; 24 Mar. 2016; T. Chaprazaro leg.; SMNHTAU 251264 ● 1♀; Park Britanya; 7 Apr. 2010; T. Koznichki leg.; pan trap; SMNHTAU 59443 ● 1♀; Pura Nature Reserve; 31°29.7' N 34°46.8' E; 200 m a.s.l.; 18 Mar. 2010; A. Freidberg leg.; SMNHTAU 48496 ● 1♂; Pura Nature Reserve; 31.496° N 34.778° E; 27 Mar. 2015; G. Pisanty leg.; BOLD accession no. ANDIL419-25; SMNHTAU 208231 ● 1♂; Qedma; 17 Feb. 2010; G. Pisanty leg.; pan trap; SMNHTAU 31849 ● 1♀; R.[amat] Hanadiv; 4 Mar. 1990; R. Kasher leg.; SMNHTAU 353631 ● 1♂; Ramat HaNadiv; 32.54–6° N 34.94–6° E; 16 Mar. 2023; G. Pisanty leg.; SMNHTAU 425831 ● 1♀; Ravid; 32.847° N 35.468° E; 29 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462768 ● 1♀; Rd. 918, Nahal Gonen; 33.111° N 35.645° E; 76 m a.s.l.; 24 Mar. 2019; A. Dorchin, T. Roth & A. Sviri leg.; SMNHTAU 310180 ● 8♀; Rekhes HaSullam; 33.091° N 35.112° E; 80 m a.s.l.; 18 Mar. 2025; G. Pisanty leg.; SMNHTAU 464898 to 464900, 465057 to 465061 ● 3♀; ibid.; L. Friedman leg.; SMNHTAU 464905 to 464907 ● 2♀; Revadim; 15 Mar. 2018; T. Roth leg.; on *Sinapis alba*; NHMUK ● 2♀; ibid.; 27 Mar. 2018; SMNHTAU 290959, 290960 ● 3♀; ibid.; RMNH ● 7♀; ibid.; on *Ferula communis*; SMNHTAU 290935, 290936, 290945 to 290947, 290990, 290993 ● 1♀; ibid.; RMNH ● 1♀; Road 869, 2.12Km NE Ma'ale Gamla Jcn, Plot D8; 32.895° N 35.676° E; –51 m a.s.l.; 11 Apr. 2019; A. Dorchin, Y. Mersman & O. Halbershtat leg.; SMNHTAU 307424 ● 1♀; Road 87, 260m E Yehudiyya Jcn, Plot D6; 32.902° N 35.650° E; –160 m a.s.l.; 11 Apr. 2019; A. Dorchin, Y. Mersman & O. Halbershtat leg.; SMNHTAU 307447 ● 2♀; Rosh Ha'ayin Forest; 32.1013° N 34.9695° E; 28 Mar. 2022; G. Pisanty leg.; sweeping; SMNHTAU 388615, 388616 ● 1♀; Sasa; 11 Apr. 2014; O. Winberger leg.; SMNHTAU 183027 ● 3♀; Sha'alvim; 16 Mar. 2017; T. Roth leg.; SMNHTAU 272535, 276419, 276430 ● 2♂; ibid.; SMNHTAU 272532, 272534 ● 1♀; Shoham; 26 Mar. 2014; E. Morgulis & A. Freidberg leg.; SMNHTAU 179267 ● 1♀; Shoham Forest Park; 32.00° N 34.963° E; 28 Mar. 2022; G. Pisanty leg.; sweeping; SMNHTAU 388587 ● 1♂; Snir - Hermon Field Study Center; 27 Mar. 1997; R. Kasher leg.; SMNHTAU 353558 ● 1♀; Snir, Hermon Field Study Center; 13 Mar. 1997; R. Kasher leg.; SMNHTAU 354450 ● 1♂; ibid.; 1 Apr. 1997; SMNHTAU 353560 ● 1♀; ibid.; 3 Apr. 1997; SMNHTAU 353788 ● 1♀; ibid.; 18 Apr. 1997; SMNHTAU 353781 ● 1♀; ibid.; 21 Apr. 1997; SMNHTAU 353782 ● 1♂; Tal Shachar; 20 Mar. 2017; T. Roth leg.; BOLD accession no. ANDIL445-25; SMNHTAU 273153 ● 1♂; Tanur; 15 Mar. 1975; F. Kaplan leg.; SMNHTAU 354489 ● 1♀; Tel Aviv; 32.0990° N 34.8042° E; 10–24 Apr. 2024; E.L.A.E. leg.; Malaise trap; SMNHTAU 462740 ● 2♀; Tel 'Eton; 31.492° N 34.925° E; 3 Apr. 2022; G. Pisanty leg.; sweeping; SMNHTAU 388491, 388493 ● 1♀; Tel Sokho; 31°41' N 34°58' E; 290 m

a.s.l.; 10 Apr. 2016; L. Friedman leg.; SMNHTAU 239592 ● 1♀; Tel Zafit; 31 Mar. 2018; T. Roth leg.; on *Rapistrum rugosum*; SMNHTAU 290882 ● 7♀; Tiberias; 32.765° N 35.523° E; 27 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462969, 462971, 462973, 462977, 462978, 462983, 462990 ● 1♀; W.Habiz [Nahal Kziv], Mt. Meron; 8 Apr. 1972; Zultan leg.; SMNHTAU 353615 ● 2♀; Ya'ar Adulam; 2013; Y. Berner leg.; on *Nepeta curviflora*; SMNHTAU 151548, 151555 ● 2♀; Ya'ar 'Adullam; 20 Apr. 2011; T. Koznichki leg.; pan trap; SMNHTAU 354424, 354425 ● 1♀; Ya'ar Kedoshim; 23 Mar. 2014; N. Shamir leg.; SMNHTAU 152640 ● 1♀; ibid.; 13 Apr. 2014; SMNHTAU 152648 ● 1♀; ibid.; 2 Mar. 2014; on *Sinapis alba*; SMNHTAU 152576 ● 1♀; ibid.; 21 Mar. 2014; SMNHTAU 152566 ● 1♀; ibid.; 30 Mar. 2014; SMNHTAU 152545 ● 1♀; ibid.; 6 Mar. 2014; on *Sarcopoterium spinosum*; SMNHTAU 152571 ● 1♀; Ya'ar Kedoshim; 7 Mar. 2017; Y. Farago leg.; SMNHTAU 272264 ● 1♂; Ya'ar Nehosha; 18 Mar. 2015; T. Chaprazaro leg.; SMNHTAU 184896 ● 1♀; Ya'ar Nehusha; 25 Apr. 2011; T. Koznichki leg.; pan trap; SMNHTAU 354436 ● 1♀; Ya'ar Odem NR; 33.205° N 35.736° E; 27 Apr. 2020; G. Pisanty leg.; pan trap; BOLD accession no. ANDIL479-25; SMNHTAU 334583 ● 1♂; ibid.; BOLD accession no. ANDIL478-25; SMNHTAU 334551 ● 1♀; Ya'ar Yish'i; 26 Apr. 2011; T. Koznichki leg.; pan trap; SMNHTAU 81398 ● 1♀; Yarkon; 27 Mar. 1996; T. Kimchi leg.; SMNHTAU ● 1♀; Yerushalayim [Jerusalem]; 13 Apr. 2014; I. Arar; on *Anthemis*; SMNHTAU 184498 ● 1♀; ibid.; on *Sinapis arvensis*; SMNHTAU 184551 ● 1♀; Yiftach; 5 Apr. 2014; O. Winberger leg.; SMNHTAU 183181 ● 1♀; ibid.; 17 Apr. 2014; N. Atkin leg.; on *Sinapis*; SMNHTAU 183159 ● 1♀; Zekharya; 3 Apr. 1988; I. Yarom leg.; SMNHTAU 353712 ● 1♀; Ziv'on; 17 Apr. 2012; L. Friedman leg.; SMNHTAU 124704 ● 1♀; Ziv'on, 1kmSW; 33.019° N 35.407° E; 5 Apr. 2016; G. Pisanty leg.; BOLD accession no. ANDIL427-25; SMNHTAU 239289 ● 1♂; Zomet Haela; 4 Apr. 1999; O. Greif leg.; SMNHTAU 353481 ● 1♂; Zomet Oren; 8 Apr. 1988; I. Yarom leg.; SMNHTAU 353506 ● 1♂; Zomet Oren, 10 km S Haifa; 8 Apr. 1988; C. O'Toole leg.; "*Andrena petraensis* War." paratype label; OUMNH ● 1♀; כרמל [Carmel]; 1 May [19]72; Kuty Yefenof leg.; SMNHTAU 353593. – **JORDAN** ● 2♀; S of At Tafila; 27–30 Mar. 2013; M. Snižek leg.; OUMNH. – **LEBANON** ● 1♀; Beqaa, Anjar, 1 km E, reforestation area; 33.7311° N 35.9478° E; 1000 m a.s.l.; 7 Apr. 2023; T. Wood leg.; TJWC ● 1♀; Beqaa, Beqaa valley, Qaraoun, 3.5 km W of Madjal Balhis; 33.5377° N 35.7038° E; 900 m a.s.l.; 5 Apr. 2023; T. Wood leg.; BOLD accession no. WPATW1108-23; TJWC ● 1♂; Beqaa, Beqaa valley, Qob Elias, valley 500 m NW; 33.7989° N 35.8192° E; 900 m a.s.l.; 3 Apr. 2023; T. Wood leg.; TJWC. – **WEST BANK** ● 2♀; Berakha, 1kmS, 'Amassa Spring; 595 m a.s.l.; 6 Mar. 2015; L. Friedman leg.; SMNHTAU 206346, 206406 ● 1♂; ibid.; BOLD accession no. ANDIL416-25; SMNHTAU 206347 ● 2♀; Deir Nidham Nat.Res.; 32.00° N 35.07° E; 420–530 m a.s.l.; 30 Mar. 2014; L. Friedman leg.; SMNHTAU 176991, 176994 ● 3♀; Har-Gilo; 14 Apr. 1991; R. Kasher leg.; 10min sweeping; SMNHTAU 353688 to 353690 ● 1♀; ibid.; 17 Apr. 1991; SMNHTAU 353691 ● 1♂; ibid.; 14 Apr. 1991; on *Salvia fructosa* [*fruticosa*]; SMNHTAU 353507 ● 1♀; Har Gilo, 5 km SW Jerusalem; 850 m a.s.l.; 30 Mar. 1989; C. O'Toole leg.; "*Andrena petraensis* War." paratype label; OUMNH ● 1♀; Herodyon; 31°40' N 35°14' E; 31 Mar. 2009; M. Guershon leg.; SMNHTAU 354461 ● 2♀; Itamar, 5kmE, ThreeSeas' Lookout; 860 m a.s.l.; 5 Mar. 2021; L. Friedman leg.; SMNHTAU 357727, 357733 ● 1♀; Jeriho; 20–28 Apr. [19]27; Dr. Enslin leg.; SMNHTAU ● 2♀; Nahal Teqoa'; 31°38' N 35°14' E; 650 m a.s.l.; 31 Mar. 2009; L. Friedman leg.; SMNHTAU 353699, 353701 ● 1♀; ibid.; M. Guershon leg.; SMNHTAU 353700 ● 2♀; Qedumim, 1kmSW, Mizpe 'Ami; 390 m a.s.l.; 13 Mar. 2015; L. Friedman leg.; SMNHTAU 206944, 206947 ● 1♂; Shechem [Nablus]; 1 Mar. 1973; M. Kaplan leg.; SMNHTAU 353648 ● 1♀; Shilo, Nahal Shilo; 10 Apr. 2012; L. Friedman leg.; SMNHTAU 125335 ● 3♀; W. Faria [Nahal Tirza]; 1 Mar. 1973; M. Kaplan leg.; SMNHTAU 353626, 353628, 354462 ● 2♂; ibid; SMNHTAU 353570, 353574 ● 1♀; Wadi Faria; 8 Mar. 1973; A. Freidberg leg.; SMNHTAU ● 1♀; Zur Natan 800mNE; 32.247° N 35.023° E; 23 Mar. 2020; G. Pisanty leg.; BOLD accession no. ANDIL477-25; SMNHTAU 333737.

3.1.2.13. *Andrena* (*Micrandrena*) *libanica* Wood sp. nov.

https://zoobank.org/D77902F6-6683-4A41-80ED-198A335-DF170

Figures 10, 15J, 20A, M

Etymology. From the Latin name for Mount Lebanon, "Libanus", with the feminine suffix -ica, thus "libanica" meaning "of Mount Lebanon", given the observed geographic distribution of the species.

Diagnosis. *Andrena libanica* is a typical member of the *A. minutula* species group with the propodeal triangle entirely rugose (Fig. 10C, G). Within this group, it belongs to the species with more or less the apical half of the clypeus polished and shining (Fig. 10B, F), the facial foveae relatively narrow along their entire length (equaling the diameter of a flagellum, Fig. 10B), the head overall relatively elongate, around 1.1 times wider than long (Fig. 10B, F), and the terga distinctly punctate. These are the species around *A. rugulosa* Stöckhert, which in the Levant and Cyprus are found in mountainous regions usually above 1200 m and include *A. libanica*, *A. alshaykh* Pisanty **sp. nov.** and *A. lindbergella* Pittioni. The female of *Andrena libanica* can be separated from all three comparison species due to the punctation of the terga, which have the punctures of the tergal discs separated by <0.5–0.5 puncture diameters, these punctures clearly defined against the underlying sculpture (Figs 10D, 15J). In *A. rugulosa*, the tergal punctures are slightly sparser, separated by 0.5–1 puncture diameters, but obscure and difficult to see, disappearing into the underlying sculpture. In *A. alshaykh* and *A. lindbergella*, the tergal punctation is sporadic, with punctures separated by 0.5–3 puncture diameters (Fig. 15K, L).

As in the females, the males can be recognised as close to *A. alshaykh* and *A. lindbergella* due to the clearly punctate terga combined with the clypeus smooth and strongly punctured in the apical ½ (Figs 10F, H, 20A). Males of *A. rugulosa* are very similar, but in this species the terga are slightly more obscurely punctate, with punctures separated by 0.5–1 puncture diameters and not so strongly differentiated from the underlying shagreen (in *A. libanica* with punctures clearly distinct against the shagreened and weakly shining terga, punctures separated by <0.5–0.5 puncture diameters, Figs 10H, 20A), and the scutal punctation slightly disappears into the strongly microreticulate and dull scutum (in *A. libanica* with the scutum more finely microreticulate, weakly shining, punctures

Figure 10. *Andrena libanica* Wood **sp. nov. A** Female habitus; **B** female head; **C** female head and mesosoma; **D** female metasoma; **E** male habitus; **F** male head; **G** male head and mesosoma; **H** male metasoma.

remaining distinct across the entire disc, Fig. 10G). Male *A. libanica* can be separated from *A. alshaykh* and *A. lindbergella* due to the tergal punctation and genital capsule. The genital capsule has the outer margin of the gonostyli straight, without a kink in the inner or outer margins (in *A. alshaykh* with a noticeable kink in the inner and outer

margins of the gonostyli; Fig. 20L, M), and the terga are strongly and densely punctate, with punctures separated by <0.5–0.5 puncture diameters (in *A. lindbergella* with the tergal punctures slightly but noticeably sparser, separated by 0.5–1 puncture diameters; Fig. 20A, B).

Description. FEMALE. ***Body length:*** 6–7 mm. — ***Integumental colour:*** Body black. Flagellomeres 3–10 ventrally slightly lightened by presence of greyish scales. Legs black, apical tarsomeres slightly lightened orange-brown. Wings hyaline, stigma dark brown, venation dark orange (Fig. 10A). Terga including marginal areas uniformly dark (Fig. 10D). — ***Pubescence:*** Body hair relatively sparse. Face and gena with short whitish hairs, becoming light brown on vertex. Facial foveae filled with light brown hairs (Fig. 10A–C). Dorsal mesosomal surfaces with short chestnut to dark brown hairs, these densely plumose, almost subsquamous (Fig. 10A, C). Mesepisternum with longer white plumose hairs (Fig. 10A). Propodeal corbicula incomplete, dorsoposterior fringe composed of moderately long plumose brownish hairs. Corbicular surface with abundant long light brown hairs. Leg hair whitish to light brown. Flocculus incomplete. Femoral and tibial scopae well-developed, femoral scopa composed of simple white hairs, tibial scopa composed of simple hairs, white ventrally, brown dorsally, tibial scopa thus bicoloured (Fig. 10A). Tergal discs with very short pale hairs, visible only in profile. Marginal areas of terga 2–4 with apical hair fringes laterally, hairs emerging from base of marginal area and apical rim, thus apical fringes are formed from two rows of hairs; apical fringes widely interrupted, not forming complete bands. Terminal fringe dark brown (Fig. 10A, D). — ***Head:*** 1.1 times broader than long (Fig. 10B). Mandibles bidentate, moderately crossing apically. Labral process small, narrowly trapezoidal, slightly longer than wide to as long as wide. Clypeus weakly domed, smooth to polished in apical ¼ to ½, finely shagreened in basal ½, punctation distinct, punctures separated by 0.5–3 puncture diameters, densest basally (Fig. 10B). Facial foveae narrow, occupying ¼ space between compound eye and lateral ocellus, uniformly narrow, equaling width of flagellum, ventrally extending to just below lower margin of antennal insertions, very slightly separated from inner margin of compound eye. Flagellomere 1 slightly exceeding 2+3, shorter than 2+3+4. Distance of fovea from lateral ocellus 2.2 ocellus diameters (Fig. 10B, C). Ocelloccipital distance equals 0.6 ocellus diameter. Vertex distinctly angulate but not carinate (Fig. 10C). — ***Mesosoma:*** Dorsolateral angle of pronotum rounded. Scutum and scutellum finely shagreened and shining, scutum densely and deeply punctate, punctures separated by 0.5–1 puncture diameters (Fig. 10C). Mesepisternum finely reticulate. Propodeum with dense network of raised reticulation, propodeal triangle lacking lateral carinae, internally with dense network of strongly raised rugae with shining interspaces (Fig. 10C). Hind pretarsal claw with small inner tooth. Recurrent vein 1 meeting submarginal cell 2 near its middle. Nervulus interstitial (Fig. 10A). — ***Metasoma:*** Tergal discs finely shagreened, weakly shining, densely and deeply punctate, punctures separated by <0.5–0.5 puncture diameters. Punctures on disc of tergum 1 most coarse, almost confluent, becoming slightly finer on subsequent terga, punctures not extending onto marginal areas. Tergal margins slightly depressed (Fig. 10D). Pygidial plate rounded, surface flat, with granular shagreen. — **MALE.** ***Body length:*** 5–6 mm. — ***Integumental colour:*** As in female (Fig. 10E, H). — ***Pubescence:*** Body hair longer and denser than in female, but more finely and less densely plumose, all pubescence white. Face, gena, and vertex with long white hairs, longest equaling length of scape (Fig. 10E–G). Dorsal mesosomal surfaces with long erect white hair, long hairs present also on mesepisternum and propodeum (Fig. 10E, G). Leg hair white (Fig. 10E). Tergal discs with very short pale hairs, visible only in profile. Marginal areas of terga 2–4 with apical hair fringes laterally, hairs emerging from base of marginal area and apical rim, thus apical fringes are formed from two rows of hairs; apical fringes widely interrupted, not forming complete bands. Terminal fringe whitish-brown (Fig. 10H). — ***Head:*** Clypeus structurally as in female, with clypeal shagreen uniformly weak, clypeus weakly shining over entire surface. Process of labrum very small, trapezoidal, slightly broader than long. Flagellomere 1 exceeding length of 2, shorter than 2+3; flagellomere 2 short, subsquare (Fig. 10F). Ocelloccipital distance subequal to diameter of lateral ocellus (Fig. 10G). — ***Mesosoma:*** As in female, with exception of slightly stronger scutal sculpture, becoming dull (Fig. 10G). — ***Metasoma:*** As in female (Fig. 10H). — ***Genitalia and hidden sterna:*** Dorsal gonocoxal lobes weakly but distinctly developed, forming short points. Gonostyli in dorsal view depressed below level of gonocoxites, dorsal surface subtly concave basally, apically becoming flattened and spatulate, inner margin slightly raised. Penis valves moderately broad basally, occupying ½ space between gonostyli, narrowing subapically to narrow point (Fig. 20M). Sternum 8 simple, columnar, apex rounded to truncate, ventral surface covered with spreading fan of pale golden hairs.

Distribution. *Andrena libanica* is known from remnant cedar forest habitats in the central part of the Mount Lebanon mountain chain. It has been collected between 1726–1885 m above sea level, making it a high altitude species. Previously reported from Lebanon as *A. rugulosa* (Boustani et al. 2021)

Flight period. Collected in mid-May; presumably extending also into June.

Flower records. Collected from Brassicaceae (*Alyssum*, *Thlaspi*).

Type material. HOLOTYPE: LEBANON ● 1♀; Mount Lebanon, Chouf Biosphere Reserve, Barouk trails; 33.6858° N 35.6986° E; 1772 m a.s.l.; 16 May 2019; Sample 1579; BOLD accession number WPATW973-22; RMNH RMNH.INS.1714343. – **PARATYPES: LEBANON** ● 1♂; Mount Lebanon, Chouf Biosphere Reserve, Barouk trails; 1885 m a.s.l.; 16 May 2019; RMNH RMNH.INS.1714344 ● 1♂; Chouf Biosphere Reserve, Barouk trails; 1772 m a.s.l.; 16 May 2019;

TJWC ● 1♀,1♂; Mount Lebanon, Chouf Biosphere Reserve, Maaser Gate; 1726 m a.s.l.; 16 May 2019; RMNH RMNH.INS.1714345 to RMNH.INS.1714346 ● 1♀; ibid.; TJWC.

3.1.2.14. *Andrena* (*Micrandrena*) *lindbergella* Pittioni, 1950

Figures 11, 15L, 20B, N

Andrena lindbergella Pittioni, 1950: 42, ♀ [Cyprus: MZHF]

Diagnosis of male. Within the *Andrena minutula* species group, *A. lindbergella* belongs to the species around *A. rugulosa* Stöckhert, characterized by a smooth clypeus and punctate terga, which include also *A. alshaykh* Pisanty **sp. nov.** and *A. libanica* Wood **sp. nov.** The male is easily differentiated from *A. alshaykh* by the genital capsule, in which the gonostyli are uniformly curving (suddenly converging medially, producing distinct kinks in the inner and outer margins in *A. alshaykh*), and the penis valves are narrower (Fig. 20L, N). In addition, the scutum is more densely punctured, and the body size is larger. Both *A. alshaykh* and *A. lindbergella* are closely related to *A. rugulosa* Stöckhert (absent from the Levant) and *A. libanica* Wood **sp. nov.**, but differ in the smoother scutum and more weakly punctured terga (Fig. 15J–L). In addition, the male of *A. rugulosa* does not have dorsal gonocoxite lobes.

Description of male. ***Body length:*** 6.5 mm. — ***Integumental colour:*** Body and legs black. Flagellum fully black, overlayed with minute grey setae. Wings weakly infuscate, veins and stigma dark brown (Fig. 11A). Tergal marginal zones black, occasionally brownish apically (Fig. 11D). — ***Pubescence:*** Clypeus with dense and long semi-erect white hairs, underlying cuticle partly obscured. Paraocular area ventrally with dense and long, semi-erect to erect whitish hairs, dorsally with short to medium, mostly black hairs. Supraclypeal area with medium-lengthed erect hairs, mostly whitish, a few black. Scape with dense medium to long hairs, mostly white, a few black. Frons with sparse, semi-erect medium-lengthed black hairs (Fig. 11A, B). Preoccipital ridge with short to long erect whitish hairs. Upper margin of compound eye with sparse short black hair. Genal area with dense whitish hair, medium-lengthed dorsally, long ventrally (Fig. 11A–C). Scutum, scutellum and metanotum with long erect hair, mostly yellowish-whitish, sparse centrally, denser peripherally, scutellum with few short erect black hairs. Mesepisternum and propodeum with very long white hairs (Fig. 11A, C). Leg hair mostly whitish, partly brownish on tarsi (Fig. 11A). Base of tergal disc 1 and lateral parts of all tergal discs with sparse, short to medium white hair, rest of tergal discs with minute inconspicuous whitish hair. Tergal marginal zones 2–4 with distinct, lateral white hair bands, 5 with very weak and sparse, continuous whitish hair band. Terminal fringe brownish, flanked by whitish hairs (Fig. 11A,

Figure 11. *Andrena lindbergella* Pittioni, 1950, male. **A** Habitus; **B** head; **C** vertex and mesosoma; **D** metasoma.

D). — ***Head:*** 1.2 times broader than long (Fig. 11B). Mandibles bidentate, moderately crossed. Galea very finely shagreened. Labral process trapezoidal, apical part slightly elevated, apical margin concave. Clypeus domed, very shiny, basally very superficially shagreened, apically smooth, punctation strong and dense, density decreasing medioapically, distance between punctures <0.5–1 puncture diameter, without impunctate midline. Flagellomere 1 1.3 times longer than 3, 1.8 times longer than 2 (Fig. 11B). Frons rugose-areolate, with clearly discernible embedded fine punctures. Ocelloccipital distance 1 ocellus diameter. Preoccipital ridge weakly carinate (Fig. 11C). — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Scutum and scutellum fully shagreened, slightly shiny, punctation fine, strong and dense, distance between punctures 0.5–1 puncture diameters on scutum, slightly sparser on scutellum (Fig. 11C). Mesepisternum finely alveolate, overlayed by shallow oblique punctures. Anteroventral corner of propodeum reticulated, rest of propodeum rugose-areolate, propodeal triangle basally slightly more coarsely sculptured compared to flanking areas, apically very finely areolated (Fig. 11C). Recurrent vein 1 meets submarginal cell 2 near its middle. Nervulus slightly antefurcal (Fig. 11A). — ***Metasoma:*** Tergal discs 1–3 shagreened, distinctly finely punctured, distance between punctures 1 puncture diameter. Tergal discs 4–6 with similar, weaker sculpturing. Tergal marginal zones shiny, very superficially shagreened, with occasional extremely fine, inconspicuous punctures (Figs 11D, 20B). — ***Genitalia and hidden sterna:*** Gonocoxites with small, partly rounded dorsal lobes. Gonostyli simple, finger-shaped, slightly broadening apically, blade flattened, apical margin rounded. Penis valves moderately broad basally, parallel-sided close to visible base, then tapering apically (Fig. 20N). Sternum 8 columnar, apical process as broad as stem, apical margin rounded.

Distribution and habitat. Endemic to shrubland and sub-alpine habitats of the Troodos range in Cyprus, usually above 1200 m. Previous reports from the Levant (Pisanty et al. 2018; Wood et al. 2020) are reinterpreted as *Andrena alshaykh* **sp. nov.**

Flight period. Late March to mid-June.

Flower records. Collected from Brassicaceae (*Alyssum*) and Caryophyllaceae (*Arenaria*).

Material examined. HOLOTYPE: CYPRUS ● ♀; Troodos, Chionistra [Mount Olympus]; 17 Jun. 1939; H. Lindberg leg.; MZHF. – **PARATYPE: CYPRUS** ● 1♀; ibid.; NHMUK. – **non-type material: CYPRUS:** ● 1♂; Finikária, Kyparissia Trail; 34.7775° N 33.1176° E; 530 m a.s.l.; 22 Mar. 2024; R. Santerre leg.; BOLD accession no. RSCMC029-25; UMONS ● 1♀; Olympus Mount, S slope; 34.9265° N 32.8668° E; 1821 m a.s.l.; 3 May 2024; R. Santerre leg.; on *Alyssum*; UMONS ● 1♀; Olympus Mount, SE slope; 34.9332° N 32.8723° E; 1842 m a.s.l.; 3 May 2024; E. Ruelle leg.; on *Alyssum*; UMONS ● 1♂; Platres; 34.892–7° N 32.861–8° E; 10 Apr. 2023; G. Pisanty leg.; sweep; BOLD accession no. ANDCY038-25; SMNHTAU 426966 ● 1♀; Troodos range, 0.7km N Olympus Mt.; 34.9429° N 32.8653° E; 1828 m a.s.l.; 24 Apr. 2024; R. Santerre leg.; on *Arenaria*; ● 1♂; ibid.; BOLD accession no. RSCMC030-25; UMONS ● 1♂; ibid.; BOLD accession no. RSCMC031-25 ● 1♀; ibid.; TJWC ● 1♂; ibid.; flying.

3.1.2.15. *Andrena* (*Micrandrena*) *lunaris* Pisanty & Wood, 2022

Figures 17G, N, 20S

Andrena lunaris Pisanty & Wood, 2022: Pisanty et al. 2022b: 53–56, ♀♂ [Israel: SMNHTAU]

Distribution and habitat. Endemic to Mediterranean shrublands throughout the Levant (Israel, West Bank, Jordan, Lebanon*, Syria).

Flight period. Early February to mid-April.

Flower records. Collected on Amaryllidaceae (*Allium*), Asparagaceae (*Ornithogalum*), Asteraceae (*Glebionis*), Brassicaceae (*Diplotaxis*, *Sinapis*) and Orchidaceae (*Cephalanthera*).

Material examined. HOLOTYPE: ISRAEL ● ♀; Montfort, Nahal Keziv [Montfort Castle, Nahal Kziv]; 28 Feb. 2018; G. Pisanty leg.; SMNHTAU 286280. – **PARATYPES: ISRAEL** ● 1♀; Bar'am; 4 Apr. 2014; N. Atkin leg.; on *Sinapis*; SMNHTAU ● 1♀; ibid.; O. Winberger leg.; on *Glebionis* ● 1♀; ibid.; pan trap ● 4♀,2♂; Bené Deror; 7 Mar. 2012; O. Afik leg.; SMNHTAU ● 1♂; Bet-Oren; 16 Feb. 1990; R. Kasher leg.; SMNHTAU ● 3♂; Bet Qeshet, 1.5 km NW; 32.74° N 35.38° E; 20 Feb. 2019; G. Pisanty leg.; SMNHTAU ● 1♂; Buraiqa NatReserve; 32.5413° N 34.979° E; 15 Feb. 2021; G. Pisanty leg.; SMNHTAU ● 1♀; Dishon; 7 Apr. 2016; O. Winberger leg.; pan trap; SMNHTAU ● 1♀; Goren; 33°02'47.7" N 35°13'19.8" E; 25 Mar. 2021; T. Novoselsky leg.; SMNHTAU ● 1♀; Haifa; 26 Feb. 1977; A. Freidberg leg.; SMNHTAU ● 1♂; Haifa; 20 Mar. 1979; A. Dafni leg.; on *Cephalanthera* [*longifolia*]; SMNHTAU ● 1♀; Hanita; 27 Mar. 1976; D. Gerling leg.; SMNHTAU ● 1♂; Har Karmila; 31°47.7' N 35°00.9' E; 340 m a.s.l.; 27 Mar. 2011; A. Freidberg leg.; SMNHTAU ● 1♂; Har Meron; 1000 m a.s.l.; 1 Apr. 2012; A. Freidberg leg.; SMNHTAU ● 1♀; ibid.; 1100 m a.s.l.; 17 Apr. 2000 ● 1♀; Har Meron; 32.9945° N 35.415° E; 5 Apr. 2016; G. Pisanty leg.; SMNHTAU ● 1♀,2♂; ibid.; 33.000° N 35.3927° E; 4 Apr. 2017; pan trap ● 1♀; Har Tayyasim; 31°46.3' N 35°05.1' E; 740 m a.s.l.; 27 Mar. 2011; A. Freidberg leg.; SMNHTAU ● 1♀,1♂; Harutsim; 26 Feb. 2009; A. Dorchin leg.; SMNHTAU ● 2♀; Hasharon, Zikhron Ya'aqov, Ramas [Ramat] Hanadiv; 12 Mar. 1990; R. Leys leg.; RMNH ● 5♀,1♂; Hirbet Samara; 2 Mar. 2009; A. Dorchin leg.; SMNHTAU ● 1♀; Horbat Sheqofa; 31.5775° N 34.8709° E; 252 m a.s.l.; 15 Mar. 2021; G. Pisanty leg.; pan trap; SMNHTAU ● 1♀; Humra Hill; 12 Mar. 2009; A. Dorchin leg.; SMNHTAU ● 1♀; Lahavot HaBashan; 1 Mar. 2018; G. Pisanty leg.; SMNHTAU ● 8♂; Lakhish; 23 Feb. 2012; T. Shapira leg.; pan trap; SMNHTAU ● 1♂; ibid.; OLML ● 1♂; ibid.; RMNH ● 1♂; ibid.; ZMB ● 3♂; ibid.; 18 Feb. 2013; SMNHTAU ● 2♀; ibid.; 6 Mar. 2013; ● 1♂; ibid.; 15 Mar. 2013; ● 1♀; ibid.; 18 Mar. 2013; ● 6♀; ibid.; 19 Mar. 2013; SMNHTAU ● 1♀; ibid.; ES ● 1♀; ibid.; ZMB ● 1♂; Lakhish, 2 km E; 31.556° N 34.87° E; 5 Feb. 2016; G. Pisanty leg.; pan trap; BOLD accession no. ANDIL054-22; SMNHTAU 233260 ● 1♀; ibid.; 31.5562° N 34.869° E; 4 Mar. 2016; ● 2♀; ibid.; 31.557° N 34.870° E ● 1♂; Lakhish, 3 km NE; 31.578° N 34.870° E; 19

Feb. 2016; G. Pisanty leg.; SMNHTAU ● 1♀, 4♂; ibid.; 26 Feb. 2016 ● 1♂; ibid.; TJWC ● 1♀; ibid.; 31.575° N 34.870° E; 11 Mar. 2016; pan trap; TJWC ● 1♀; ibid.; 31.579° N 34.871° E; 4 Mar. 2016; SMNHTAU ● 2♀; Malkiyya; 10 Apr. 2014; O. Winberger leg.; pan trap; SMNHTAU ● 1♀; ibid.; NHMUK ● 9♀; ibid.; 19 Apr. 2016; SMNHTAU ● 1♀; ibid.; ES ● 1♀; ibid.; OLML ● 1♀; ibid.; RMNH ● 1♀; ibid.; ZMB ● 2♂; Me'arat Yishah, 0.5 km E; 32.718° N 35.007° E; 22 Feb. 2019; G. Pisanty leg.; SMNHTAU ● 1♂; Meiliya Mt.Fort Rd. [Mi'ilya–Montfort Road]; 5 Apr. 1972; D. Gerling leg.; SMNHTAU ● 1♀; Meron NR, 1.2 km SSW Meron Field School; 32°59'55" N 35°23'31" E; 998 m a.s.l.; 3 Apr. 2016; A. Dorchin leg.; SMNHTAU ● 1♀,2♂; Monfort; 4 Mar. 1976; A. Freidberg leg.; SMNHTAU ● 3♂; ibid.; 10 Mar. 1981; F. Kaplan leg. ● 1♂; ibid.; T. Furman leg. ● 1♂; Montfort; 17 Mar. 1983; A. Freidberg leg.; SMNHTAU ● 1♀,1♂; Montfort; 33.045° N 35.225° E; 26 Feb. 2021; G. Pisanty leg.; SMNHTAU ● 2♀,7♂; Montfort, Nahal Keziv; 28 Feb. 2018; G. Pisanty leg.; SMNHTAU ● 1♂; ibid.; NHMUK ● 1♂; ibid.; OLML ● 1♂; ibid.; RMNH ● 2♀; Mount Carmel, Hay-Bar, 1 km S University; 25 Mar. 1990; R. Kasher leg.; SMNHTAU ● 1♂; Mount Meron; 900 m a.s.l.; 13 Apr. 1988; I. Yarom leg.; SMNHTAU ● 1♀; Nahal Alexander; 4 Mar. 2017; K. Levy leg.; pan trap; SMNHTAU ● 2♂; Nahal Dishon; 1 Apr. 1991; R. Kasher leg.; SMNHTAU ● 1♂; Nahal Keziv; 33°02.7' N 35°13.6' E; 5 Mar. 2008; A. Freidberg leg.; SMNHTAU ● 3♀,14♂; Nahal Keziv; 33.0465° N 35.226° E; 26 Feb. 2021; G. Pisanty leg.; SMNHTAU ● 1♂; ibid.; BOLD accession no. ANDIL111-22; SMNHTAU 357632 ● 1♂; ibid.; ES ● 1♀,2♂; ibid.; NHMUK ● 1♀,2♂; ibid.; OLML ● 1♀,2♂; ibid.; RMNH ● 1♂; ibid.; ZMB ● 1♀; Nes Ziyyona; 31.928° N 34.78° E; 13 Mar. 2015; G. Pisanty leg.; BOLD accession no. ANDIL046-22; SMNHTAU 207060 ● 2♂; Netanya, Irus Ha'Argaman NR; 32.287° N 34.842° E; 24 Feb. 2021; G. Pisanty leg.; SMNHTAU ● 4♂; Netiv Halamed He; 24 Feb. 2009; G. Pisanty leg.; pan trap; SMNHTAU ● 1♂; ibid.; 26 Feb. 2009 ● 1♀; Qadima; 5 Mar. 1990; R. Kasher leg.; SMNHTAU ● 1♂; R. Hanadiv; 4 Mar. 1990; R. Kasher leg.; SMNHTAU ● 1♀; Ramat HaNadiv; 22 Mar. 2012; T. Shapira leg.; pan trap; SMNHTAU ● 2♀; ibid.; 11 Apr. 2012; ● 2♀; ibid.; 12 Apr. 2012; ● 1♀; ibid.; 2 Apr. 2013 ● 1♂; Sasa; 1 Apr. 2014; O. Winberger leg.; pan trap; SMNHTAU ● 1♀; ibid.; 29 Apr. 2014; ● 1♂; ibid.; 3 Apr. 2016 ● 2♀; Sheikh Ali, 20 km E Qiryat Gat; 17 Mar. 1990; R. Kasher leg.; SMNHTAU ● 1♀; Shoham; 17 Mar. 2010; L. Friedman leg.; SMNHTAU ● 2♀; ibid.; 22 Mar. 2012 ● 2♀; Snir, Hermon Field Study Center; 13 Mar. 1997; R. Kasher leg.; SMNHTAU ● 2♀,1♂; ibid.; 27 Mar. 1997; ● 1♀; ibid.; 30 Mar. 1997; OLML ● 1♂; Tiv'on; 6 Feb. 1975; H. Bytinski-Salz leg.; SMNHTAU ● 2♀,1♂; W. Habiz, Upper Galilee; 3 Apr. 1972; D. Gerling leg.; SMNHTAU ● 1♂; W.Habiz, Mt. Meron; 8 Apr. 1972; A. Kesar leg.; SMNHTAU ● 2♂; Ya'ar Adulam; 20 Feb. 2013; Y. Berner; on *Diplotaxis erucoides*; SMNHTAU ● 1♂; ibid.; OLML ● 1♂; ibid.; RMNH ● 1♀; Ya'ar Adullam; 20 Apr. 2011; T. Koznichki leg.; pan trap; SMNHTAU ● 1♂; Ya'ar Kedoshim; 2 Mar. 2014; N. Shamir leg.; pan trap; SMNHTAU ● 1♂; ibid.; 4 Mar. 2014; ● 1♀; ibid.; 6 Mar. 2014; ● 1♂; ibid.; 7 Mar. 2014; ● 3♀; ibid.; 23 Mar. 2014; on *Allium trifoliatum* ● 1♀; ibid.; on *Sinapis alba* ● 1♂; ibid.; 24 Mar. 2014; pan trap ● 2♀; ibid.; 26 Mar. 2014; ● 1♀; ibid.; 30 Mar. 2014 ● 1♀; ibid.; 7 Mar. 2017; Y. Farago leg.; ES ● 3♀,1♂; ibid.; 18 Mar. 2017; SMNHTAU ● 1♀; ibid.; NHMUK ● 1♀; ibid.; RMNH ● 1♀; ibid.; 3 Apr. 2017; OLML ● 1♀; ibid.; 16 Apr. 2017; SMNHTAU ● 1♀; ibid.; BOLD accession no. ANDIL079-22; SMNHTAU 272348 ● 1♀; Ya'ar Nehosha; 22 Mar. 2016; T. Chaprazaro leg.; on *Ornithogalum narbonense*; SMNHTAU ● 1♀; Yiftach; 30 Mar. 2016; O. Winberger leg.; pan trap; SMNHTAU ● 1♀; Zur Natan, 500 m NE; 32.245° N 35.021° E; 6 Apr. 2020; G. Pisanty leg.; SMNHTAU. – **JORDAN** ● 1♀; 10 km N Jerash; 20 Apr. 2002; M. Snižek leg.; OLML. – **SYRIA** ● 36♀,1♂; Burg Marqab, 7 km SE Banyas; 16 Apr. 1992; K. Warncke leg.; OLML. – **WEST BANK** ● 1♂; Har Kabbir; 700 m a.s.l.; 17 Mar. 2015; L. Friedman leg.; SMNHTAU ● 1♂; Qedumim; 20 Feb. 2006; L. Friedman leg.; SMNHTAU ● 1♀; Maskiyyot, Rt. 578, Wadi Halat Mahmud el-'Ali; 32°19'18" N 35°29'52" E; –75 m a.s.l.; 27 Feb. 2020; L. Friedman leg.; SMNHTAU ● 1♀; Nahal Teqoa; 31°38' N 35°14' E; 31 Mar. 2009; A. Freidberg leg.; SMNHTAU. – **non-type material: ISRAEL** ● 1♀; Allone Abba; 32°43' N 35°09' E; 5–31 Mar. 2013; W. Kuslitzky leg.; Malaise trap; SMNHTAU 144171 ● 1♂; Bet Guvrin; 31.611° N 34.890° E; 17 Feb. 2023; G. Pisanty leg.; pan trap; SMNHTAU 420826 ● 2♀; Carmel, Har Telalim; 32.757° N 35.0245° E; 440 m a.s.l.; 16 Mar. 2025; G. Pisanty leg.; SMNHTAU 464565, 464570 ● 3♂; ibid.; SMNHTAU 464561, 464566, 464577 ● 3♂; Gvar'am NR; 31.58° N 34.59° E; 1 Mar. 2023; G. Pisanty; sweep, on Brassicaceae; SMNHTAU 422725, 422733, 422745 ● 1♀; Haifa, Shiqmona; 32.812–25° N 34.954–6° E; 8 Mar. 2025; G. Pisanty leg.; SMNHTAU 464490 ● 1♀; Hanita, 250m WSW; 33.0865° N 35.168° E; 256 m a.s.l.; 18 Mar. 2025; G. Pisanty leg.; SMNHTAU 465002 ● 3♂; Har Ahino'am; 32.502–6° N 35.408–14° E; 440 m a.s.l.; 3 Mar. 2025; G. Pisanty leg.; SMNHTAU 464000, 464006, 464007 ● 2♀; Hasharon, Zikhron Ya'aqov, Ramas Hanadiv; 25 Mar. 1990; R. Leys leg.; RMNH ● 1♀; Hof Dor–HaBonim N.R.; 32.630–44° N 34.922–8° E; 2 Mar. 2025; G. Pisanty leg.; SMNHTAU 464055 ● 1♀; ibid.; 32.638–43° N 34.922–8° E; L. Friedman leg.; SMNHTAU 464074 ● 2♂; ibid.; SMNHTAU 464071, 464072 ● 1♀; Ma'ale Gamla, Sea of Galilee; 4 Mar. 2016; J. Pražak leg.; JS ● 1♀; Mata; 4 Apr. 2024; A. Lofchick leg.; SMNHTAU 456669 ● 1♀; Ramat HaNadiv; 32.54–6° N 34.94–6° E; 16 Mar. 2023; G. Pisanty leg.; SMNHTAU 425838 ● 1♂; ibid.; SMNHTAU 425830 ● 1♀; 1.3 km N Tiv'on; 163 m a.s.l.; 23 Mar. 2012; A. Dorchin leg.; TJWC. – **LEBANON** ● 3♂; Beqaa, Beqaa valley, Mansourah, Kafraiya village; 33.6744° N 35.738° E; 1000 m a.s.l.; 2 Apr. 2023; T. Wood leg.; BOLD accession nos. WPATW1044-23 to WPATW1046-23; TJWC.

3.1.2.16. *Andrena* (*Micrandrena*) *luscinia* Warncke, 1975

Figures 15H, 20V

Andrena luscinia Warncke, 1975a: 46–47, ♀♂ [Central Turkey: OLML].

Distribution and habitat. High elevations throughout the northern Middle East. In the Levant, occurring in northern Israel, Lebanon and Syria (Pisanty et al. 2018; Wood & Monfared 2022; Wood et al. 2024b).

Flight period. Early April to mid-June.

Flower records. Collected from Rosaceae (*Prunus*) and Sapindaceae (*Acer*).

Material examined. IRAN ● 1♀; Ilam province, Abda Man, Dinar Gaouh [Abdanan, Dinar Kuh Protected Area]; 1830 m a.s.l.; 12 May 2016; M. Kafka leg.; BOLD accession no. ANDGP019-25; OLML. – **ISRAEL** ● 1♂; Har Hermon; 33°18' N 35°46 E; 1500–1600 m a.s.l.; 6 Jun. 2002; A. Freidberg leg.; SMNHTAU 367680 ● 1♂; ibid.; 1700 m a.s.l.; 6 Jun. 2013; L. Friedman leg.; SMNHTAU 142434 ● 4♀; ibid.; 33.2994° N 35.7675° E; 1645 m a.s.l.; 16 Apr. 2021; G. Pisanty leg.; SMNHTAU 361185, 361186, 361194, 361197 ● 2♂; ibid.; SMN-

HTAU 361219, 361220 ● 1♀; ibid.; 33.30° N 35.77° E; 1600–1800 m a.s.l.; 17 Jun. 2020; SMNHTAU 336029 ● 2♂; ibid.; SMNHTAU 336033, 336034 ● 1♀; ibid.; 33.302° N 35.773° E; 1820 m a.s.l.; SMNHTAU 336102 ● 3♀; ibid.; 33.299° N 35.769° E; 1650 m a.s.l.; 7 Apr. 2021; sweep; SMNHTAU 360376, 360381, 360383 ● 3♂; ibid.; SMNHTAU 360391, 360399, 360402 ● 1♂; ibid.; BOLD accession no. ANDIL360-22; SMNHTAU 360403 ● 4♀; ibid.; 33.2991° N 35.7667° E; 1644 m a.s.l.; 16 Apr. 2022; pan trap; SMNHTAU 390400 to 390402, 390407 ● 2♀; ibid.; 33.2992° N 35.7670° E; SMNHTAU 390127, 390183 ● 4♂; ibid.; SMNHTAU 390129, 390131, 390133, 390222 ● 3♀; ibid.; 33.2996° N 35.7677° E; 1642 m a.s.l.; SMNHTAU 390545, 390547, 390555 ● 1♂; ibid.; SMNHTAU 390576 ● 2♀; ibid.; 33.300° N 35.767° E; 1610 m a.s.l.; 7 Apr. 2021; SMNHTAU 360527, 360529 ● 1♀; ibid.; BOLD accession no. ANDIL362-22; SMNHTAU 360525 ● 1♀; ibid.; 33.2993° N 35.7670° E; 1641 m a.s.l.; 16 Apr. 2022; on *Prunus dulcis*; SMNHTAU 389937 ● 1♂; ibid.; SMNHTAU 389939 ● 1♀; ibid.; 33.2993° N 35.7679° E; 1649 m a.s.l.; 7 Apr. 2021; on *Acer monspessulanum*; SMNHTAU 360302 ● 1♀; Har Hermon, green trail; 1500–1750 m a.s.l.; 17 Jun. 2020; L. Friedman leg.; SMNHTAU 336593 ● 1♂; Hermon Nature Reserve, Har 'Ar'ar, Plot E6; 33.308° N 35.752° E; 1639 m a.s.l.; 18 Jun. 2019; A. Dorchin, A. Sviri & Y. Mersman leg.; SMNHTAU 309229. – **LEBANON** ● 2♀; Beqaa, Rachaiya, 5 km S, Mount Hermon nature reserve; 33.4586° N 35.8395° E; 1500 m a.s.l.; 8 Apr. 2023; T. Wood leg.; BOLD accession nos. WPATW1149-23, WPATW1150-23; TJWC. – **SYRIA** ● 2♀; Burg Baniyas/Mt. Hermon; 1500 m a.s.l.; 13 Apr. 1992; K. Warncke leg.; OLML ● 12♂; Maalula [Maaloula], 60 km NE Damaskus; 1400 m a.s.l.; 14 Apr. 1992; ibid.

3.1.2.17. *Andrena* (*Micrandrena*) *magunta* Warncke, 1965

Figures 15G, 20C, T

Andrena magunta Warncke, 1965: 67–68, ♀ [Greece: OLML].
Andrena (*Micrandrena*) *magunta* Warncke: Gusenleitner & Schwarz 2002: 453 (first description of ♂).

Distribution and habitat. Grasslands and shrublands in south-eastern Europe, Turkey and the Levant (northern Israel, Jordan*, Lebanon, Syria*; Pisanty et al. 2018; Wood et al. 2020; IUCN 2024).

Flight period. Mid-February to late May.

Flower records. Collected from Asteraceae, Brassicaceae and Rosaceae (IUCN 2024).

Material examined. ISRAEL ● 1♀; Biriyya Forest; 32.99–33.00° N 35.52–53° E; 19 May 2023; G. Pisanty leg.; SMNHTAU 429811 ● 1♀; Kefar Giladi S; 25 Mar. 1997; R. Kasher leg.; SMNHTAU ● 1♀; Tivon; 2 Apr. 1975; F. Kaplan leg.; SMNHTAU ● 1♂; Yehi'am; 16 Feb. 2014; L. Friedman leg.; BOLD accession no. ANDIL405-25; SMNHTAU 173841. – **JORDAN** ● 1♂; 20 km NW of Amman; 420 m a.s.l.; 5 May 2006; K. Deneš leg.; OLML ● 1♂; Jarash env; 1 May 1996; Ma. Halada leg.; OLML ● 2♂; North Shuna; 20–22 Apr. 1996; ibid. ● 1♂; ibid.; TJWC ● 5♂; ibid.; 29–30 Apr. 1996; OLML. – **LEBANON** ● 1♀; Beqaa, Beqaa valley, Qob Elias, valley 500 m NW; 33.7989° N 35.8192° E; 900 m a.s.l.; 5 Apr. 2023; T. Wood leg.; TJWC ● 1♀; ibid.; BOLD accession no. WPATW1114-23 ● 1♀; Ota a Sha'eb [Ayta ash Shab]; 3 Apr. 1978; D. Gerling leg.; SMNHTAU. – **SYRIA** ● 1♂; 50 km W Homs; 12 May 1996; Ma. Halada leg.; OLML ● 33♂; Jisr al-Shughur, Syria; 26 May 1996; ibid. ● 2♀,1♂; ibid.; TJWC ● 1♂; Ras al Basit; 19 May 1995; K. Deneš leg.; TJWC ● 4♂; Tartus; 25 May 1996; Ma. Halada leg.; OLML.

3.1.2.18. *Andrena* (*Micrandrena*) *minutuloides* Perkins, 1914

Figures 18C, I, 21F

Andrena minutuloides Perkins, 1914: 114, ♀♂ [England: NHMUK or OUMNH].
Andrena parvuloides Perkins, 1914: 114, ♀ [England: NHMUK or OUMNH].
Andrena sparsiciliata Alfken, 1925: 165 [Germany: ZMB].

Distribution and habitat. Broadly West and Central Palaearctic, in diverse habitats. In the Levant, A single female was recorded from northern Lebanon, at 1600 m (Wood et al. 2020).

Flight period. In Europe, the species flies in two generations between April–September.

Flower preferences. Broadly polylectic. Pollen hosts include Apiaceae, Asteraceae, Brassicaceae, Lamiaceae, Rosaceae and Scrophulariaceae (Westrich 1989; IUCN 2024). The second generation shows a strong preference for Apiaceae (TJW, unpublished data).

Material examined. BELGIUM ● 1♀; Liège, Pont-de-Seraing, Rue des Conquerais; 50.6214° N 5.5127° E; 27 Apr. 2021; T. Wood leg.; BOLD accession no. WPATW095-21; TJWC. – **LEBANON:** See Wood et al. 2020. – **MOROCCO** ● 1♀; Fès-Meknès, Boulemane, 5 km SE, junction of R503 and N4; 33.3288° N –4.6962° W; 1900 m a.s.l.; 19 May 2022; T. Wood leg.; BOLD accession no. WPATW456-22; TJWC. – **ROMANIA** ● 1♀; Iași, Grădina Botanică "Anastasie Fătu"; 47.1865° N 27.5497° E; 27 Jul. 2023; T. Wood leg.; BOLD accession no. ORBIT214-23; TJWC. – **SPAIN** ● 1♀; Bernuy de Porreros, Fuente de los Caños; 41.006° N –4.1102° W; 20 Jul. 2021; T. Wood leg.; BOLD accession no. WPATW342-21; TJWC.

3.1.2.19. *Andrena* (*Micrandrena*) *paganettina* Warncke, 1965

Figures 16F, K, 21K

Andrena paganettina Warncke, 1965: 64, ♀ [Greece: OLML].
Andrena (*Micrandrena*) *paganettina* Warncke: Gusenleitner & Schwarz 2002: 568–569 (first description of ♂).

Distribution and habitat. Mediterranean shrublands in Greece, Turkey and all countries of the Levant (Israel, West Bank, Jordan*, Lebanon*, Syria*; Pisanty et al. 2018; IUCN 2024).

Flight period. Early February to early June.

Flower records. Collected from Apiaceae (*Daucus*), Asteraceae (*Glebionis*), Brassicaceae (*Diplotaxis*), Euphorbiaceae (*Euphorbia*) and Rosaceae (*Malus*).

Material examined. ISRAEL ● 3♀; Banias; 18 Apr. 1992; R. Kasher leg.; SMNHTAU 353681, 353686, 353687 ● 2♀; Banyas; 26 May 1991; K. Warncke leg.; OLML ● 2♀; ibid.; TJWC ● 1♀,1♂; Banyas O; 27 May 1991; K. Warncke leg.; OLML ● 1♀; Beit Govrin; 20 Apr. 2017; T. Roth leg.; SMNHTAU 272816 ● 1♀; ibid.; BOLD accession no. ANDIL270-22; SMNHTAU 272802 ● 2♂; ibid.; SMNHTAU 272789, 272815 ● 1♂; ibid.; BOLD accession no. ANDIL269-22; SMNHTAU 272782 ● 1♂; BEN SHEMEN; 8 Mar. 1986; E. Shney-Dor leg.; SMNHTAU 354483 ● 1♀; Benjamina; 15 May 1940; H. Bytinski-Salz leg.; SMNHTAU 353606 ● 1♂; Bet Ha'Emeq; 6 Feb. 2000; L. Friedman leg.; SMNHTAU ● 1♀; Bet Oren; 5 May 2005; A. Freidberg leg.; SMNHTAU ● 1♀; Buraiqa NatReserve; 32.5413° N 34.979° E; 15 Feb. 2021; G. Pisanty leg.; SMNHTAU 356744 ● 1♀; ibid.; BOLD accession no. ANDIL347-22; SMNHTAU 356741 ● 1♂; ibid.; SMNHTAU 356746 ● 1♀; CANADA PARK; 10 May 1986; E. Shney-Dor leg.; SMNHTAU 353609 ● 3♀; Dafna; 27 May 1991; K. Warncke leg.; OLML ● 1♀; Dishon; 15 May 1973; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; Ein Avazim, S Qiryat-Shmona; 6 Mar. 1995; R. Kasher leg.; SMNHTAU 354463 ● 1♂; 'En Zetim; 750 m a.s.l.; 2 May 2016; A. Kazachenko leg.; SMNHTAU 243306 ● 1♀; Ginosar; 6 Mar. 1965; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; HaGolan, S Nahal Neshef; 33.092° N 35.644° E; 100 m a.s.l.; 24 Mar. 2019; A. Dorchin, T. Roth & A. Sviri leg.; SMNHTAU 310152 ● 1♀; Hagoshrim; 28 Feb. 1977; A. Freidberg leg.; SMNHTAU ● 1♀; Haifa; 26 Feb. 1977; A. Freidberg leg.; SMNHTAU 353613 ● 1♂; Hamat Gader; 7 May 1997; A. Freidberg leg; SMNHTAU 353493 ● 5♂; Har Ahino'am; 32.5035° N 35.413° E; 438 m a.s.l.; 3 Mar. 2025; G. Pisanty leg.; pan trap; SMNHTAU 463809, 463811, 463815 to 463817 ● 1♀; Har'el; 29 May 2009; G. Pisanty leg.; on *Daucus aureus*; SMNHTAU 28770 ● 3♀; Harel; 10 Mar. 2020; T. Roth leg.; 346512, 346558, 346563 ● 1♂; Harel; 8 Mar. 2020; K. Levy leg.; SMNHTAU 338246 ● 1♀; HaTanur; 24 May 1988; I. Yarom leg.; SMNHTAU 353707 ● 1♂; ibid.; SMNHTAU 353501 ● 1♂; Ha'Tanur; 15 Mar. 1975; M. Kaplan leg.; SMNHTAU 353462 ● 1♂; Hurshat Tal; 13 Mar. 1996; R. Kasher leg.; SMNHTAU 353547 ● 1♂; Jerusalem env; 20 Mar. 1993; D. Ábel leg.; OLML ● 1♂; Kare Deshe; 10 May 2012; L. Friedman leg.; SMNHTAU 125816 ● 1♀; Karé Deshe; 11 May 2012; T. Shapira leg.; SMNHTAU 132845 ● 1♀; Kefar Giladi N; 25 Mar. 1997; R. Kasher leg.; SMNHTAU 353759 ● 1♀; Kefar Giladi S; 25 Mar. 1997; R. Kasher leg.; SMNHTAU 353755; ● 1♀; ibid.; 27 Mar. 1997; SMNHTAU 353766 ● 1♀; ibid.; 30 Mar. 1997; SMNHTAU 353764 ● 3♀; ibid.; 12 Apr. 1997; SMNHTAU 353769, 353771, 353772 ● 1♀; Kefar Uriyya-Tarum; 31.78–80° N 34.95–97° E; 25 Feb. 2017; G. Pisanty leg.; SMNHTAU 268517 ● 1♂; ibid.; SMNHTAU 268525 ● 1♀; Kineret; 4 Mar. 1968; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; Lahav; 23 Apr. 1970; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; Latrun; 260 m a.s.l.; 8 Apr. 2016; L. Friedman leg.; SMNHTAU 242943 ● 11♂; Ma'ale Gamla; 32.885–92° N 35.681–4° E; 28 Feb. 2022; G. Pisanty leg.; SMNHTAU 385117, 385122, 385126 to 385128, 385131 to 385133, 385135 to 385137 ● 1♀; Mahseya, S, Deir Aban ruins; 265–300 m a.s.l.; 9 Mar. 2016; L. Friedman leg.; SMNHTAU 235831 ● 1♂; ibid.; SMNHTAU 235829 ● 3♀; Malkiyya; 27 Apr. 2014; O. Winberger leg.; SMNHTAU 183927, 183975, 184091 ● 1♀; ibid.; on *Malus domestica*; SMNHTAU 182999 ● 1♀; ibid.; on Apiaceae; SMNHTAU 183007 ● 2♀; Ma'yan Barukh; 33.232° N 35.611° E; 29 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462797, 462802 ● 1♀; Me'arat Yishah, 0.5km E; 32.718° N 35.007° E; 22 Feb. 2019; G. Pisanty leg.; BOLD accession no. ANDIL314-22; SMNHTAU 321631 ● 2♂; ibid.; SMNHTAU 321635, 321646 ● 1♂; Megido; 20 Feb. 1984; E. Shney-Dor leg.; SMNHTAU 353455 ● 1♀; Moradot HaGolan NR, 960m SE Gonen; 33.111° N 35.651° E; 190 m a.s.l.; 7 Apr. 2019; A. Dorchin, A. Sviri & O. Halbershtat leg.; SMNHTAU 308888 ● 1♀; ibid.; BOLD accession no. ANDIL308-22; SMNHTAU 308875 ● 1♂; Nahal 'Iyyon; 473–497 m a.s.l.; 20 Feb. 2018; L. Friedman leg.; SMNHTAU 285869 ● 1♂; Nahal 'Iyyon Reserve, HaTanur; 20 Feb. 2002; L. Friedman leg.; SMNHTAU 353526 ● 1♀; Nahal 'Iyyon, HaTanur Waterfall; 33°16.1' N 35°34.5' E; 430 m a.s.l.; 15 Mar. 2011; A. Freidberg leg.; BOLD accession no. ANDIL394-22; SMNHTAU 89752 ● 1♀; Nahal Batra, Plot C11; 32.913° N 35.681° E; 43 m a.s.l.; 23 May 2019; A. Dorchin & T. Roth leg.; SMNHTAU 306721 ● 1♀; Nahal Batra, Plot C13; 32.920° N 35.697° E; 107 m a.s.l.; 23 May 2019; A. Dorchin & T. Roth leg.; SMNHTAU 306526 ● 1♂; Nahal Keziv; 33.0465° N 35.226° E; 26 Feb. 2021; G. Pisanty leg.; SMNHTAU 357657 ● 2♂; Nahal Keziv, Montfort; 33°02' N 35°14' E; 400 m a.s.l.; 24 Feb. 2011; A. Freidberg leg.; SMNHTAU 90981, 90983 ● 2♂; Nahal Mezar; 32.75–7° N 35.69° E; 1 Mar. 2022; G. Pisanty leg.; sweeping; SMNHTAU 385162, 385167 ● 2♀; Nahshon junction; 9 Mar. 2017; T. Roth leg.; SMNHTAU 274131, 274151 ● 1♀; ibid.; BOLD accession no. ANDIL274-22; SMNHTAU 274150 ● 1♂; ibid.; BOLD accession no. ANDIL273-22; SMNHTAU 274132 ● 1♀; Nahshonim; 2 Apr. 2023; S. Asis leg.; SMNHTAU 414779 ● 1♂; Negba; 27 Apr. 2021; Y. Halevi leg.; on *Glebionis coronaria*; SMNHTAU 379253 ● 1♀; Netiv Halamed Hey; 8 Mar. 2008; U. Roll leg.; SMNHTAU 24972 e● 1♀; Newe Shalom; 14 May 2009; G. Pisanty leg.; SMNHTAU 31153 ● 1♀; ibid.; 6 May 2011; on *Daucus aureus*; SMNHTAU 80803 ● 1♂; ibid.; 12 Feb. 2010; pan trap; SMNHTAU 31899 ● 1♀; Park Britannia; 6 May 2015; T. Chaprazaro leg.; SMNHTAU 185556 ● 1♂; ibid.; 13 Mar. 2016; SMNHTAU 251124 ● 2♀; ibid.; 2 May 2016; SMNHTAU 251741, 251744 ● 1♀; ibid.; 3 May 2016; SMNHTAU 251750 ● 1♂; Ramat HaNadiv; 32.551° N 34.945° E; 15 Feb. 2021; G. Pisanty leg.; on *Euphorbia hierosolymitana*; BOLD accession no. ANDIL346-22; SMNHTAU 356724 ● 1♀; Ramot Naftali; 24 Apr. 2014; O. Winberger leg.; SMNHTAU 183294 ● 1♀; Ramot Naftali; 33°05' N 35°29'E; 8 May 2013; L. Friedman leg.; SMNHTAU 141551 ● 1♀; Ramot Naftali; 33°05' N 35°33'E; 11 May 2015; A. Freidberg leg.; SMNHTAU 223910 ● 3♀; Ravid; 32.847° N 35.468° E; 29 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462766, 462767, 462769 ● 1♂; Rekhes HaSullam; 33.091° N 35.112° E; 80 m a.s.l.; 18 Mar. 2025; L. Friedman leg.; SMNHTAU 464925 ● 1♀; Rosh Ha'Ayin, East, Hirbet Umm el-Bureid; 32.090° N 34.985° E; 77–117 m a.s.l.; 7 Mar. 2022; L. Friedman leg.; SMNHTAU 386789 ● 1♀; Sha'alvim; 16 Mar. 2017; T. Roth leg.; SMNHTAU 276406 ● 1♂; Sha'alvim; 7 Feb. 2010; G. Pisanty leg.; pan trap; SMNHTAU 31876 ● 1♀; Snir, Hermon Field Study Center; 13 Mar. 1997; R. Kasher leg.; SMNHTAU 354451 ● 1♂; ibid.; SMNHTAU 353569 ● 1♀; ibid.; 3 Apr. 1997; SMNHTAU 353785 ● 1♂; Tel Aviv BG; 8 Mar. [19]74; H. Bytinski-Salz leg.; SMNHTAU 354486 ● 1♀; Tel Bar'on, Rt.98; 33°09.6' N 35°46.8' E; 1000 m a.s.l.; 22 May 2011; M. Guershon leg.; SMNHTAU 94493 ● 2♀; Tel Dan; 27 May 1991; K. Warncke leg.; OLML ● 1♀; Tel Hadid; 100 m a.s.l.; 28 Feb. 2021; L. Friedman leg.; SMNHTAU 357270 ● 1♀; Tel Kazir; 5 Mar. 1968; H. Bytinski-Salz leg.; head missing; SMNHTAU ● 1♀; Tel Zafit; 27 May 2009; G. Pisanty leg.; SMNHTAU 31369 ● 1♀; Tiberias; 32.765° N 35.523° E; 27 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462981 ● 1♂; Tivon; 6 Feb. 1975; H. Bytinski-Salz leg.; SMNHTAU 353467 ● 1♀; Ya'ar Kedoshim; 5 Mar. 2017; Y. Farago leg.; SMNHTAU 271989 ● 1♀; Ya'ar Nehosha; 5 May 2016; T. Chaprazaro leg.; SMNHTAU 251790 ● 1♀; Ya'ar Yish'i; 21 Apr. 2010;

T. Koznichki leg.; pan trap; SMNHTAU 59543 ● 1♂; Ya'ar Yish'i; 26 Feb. 2013; Y. Berner leg.; on *Diplotaxis erucoides*; SMNHTAU 151310 ● 1♂; ibid.; BOLD accession no. ANDIL160-22; SMNHTAU 151309 ● 1♀; Zomet Ha'Amaqim (Jalame); 26–30 May 1993; A. Freidberg leg.; SMNHTAU 353694 ● 1♀; Zomet haEla; 4 Apr. 1999; A. Freidberg leg.; SMNHTAU 353666 ● 1♂; Zomet Nappah [Nafah Junction]; 3 Mar. 2016; L. Friedman leg.; SMNHTAU 235063 ● 1♂; ibid.; BOLD accession no. ANDIL221-22; SMNHTAU 235075. – **JORDAN** ● 22♂; Kufur; 4–5 May 2012; M. Kafka leg.; OLML ● 1♀; North Shuna; 20–22 Apr. 1996; Ma. Halada leg.; OLML ● 5♀,54♂; ibid.; 29–30 Apr. 1996 ● 22♂; ibid.; TJWC ● 35♂; Zadaba [?]; 32°34.17' N 35°38.79' E; 6 May 2012; M. Kafka leg.; OLML ● 12♂; ibid.; TJWC. – **LEBANON** ● 1♀; Hrar-Akkar [Hrar]; 900 m a.s.l.; 17 Apr. 2021; A. Saab leg.; TJWC. – **SYRIA** ● 1♀; Burg Marqab, 7 km SE Banyas; 16 Apr. 1992; K. Warncke leg.; OLML ● 4♂; Jisr-esh-Shughur, Syria; 18 Apr. 1992; ibid. ● 2♂; ibid.; TJWC ● 1♀; Ras al Basit; 19 May 1995; K. Deneš leg.; OLML ● 20♀; Tartus; 25 May 1996; Ma. Halada leg.; OLML ● 4♀; ibid.; TJWC ● 1♀,1♂; Tartus, Oal at al-Hisn; 8 Jun. 2000; K. Deneš leg.; OLML. – **WEST BANK** ● 1♂; Avenat, Rt. 90; 31°41' N 35°26' E; 17 Mar. 2004; A. Freidberg leg.; SMNHTAU 354490 ● 1♀; Berakha, 1kmS, 'Amassa Spring; 595 m a.s.l.; 6 Mar. 2015; L. Friedman leg.; BOLD accession no. ANDIL192-22; SMNHTAU 206380 ● 1♀; Jordan V.[alley]; 13 May 1965; J. Kugler leg.; SMNHTAU 353586 ● 1♂; Qarne Shomeron; 18 Mar. 2016; L. Friedman leg.; SMNHTAU 238129 ● 1♂; Qedumim, cemetry; 373 m a.s.l.; 4 Mar. 2020; L. Friedman leg.; BOLD accession no. ANDIL319-22; SMNHTAU 332779 ● 1♂; W. Faria; 3 Mar. 1973; D. Furth leg.; SMNHTAU 353579.

3.1.2.20. *Andrena* (*Micrandrena*) *phoenicia* Pisanty sp. nov.

https://zoobank.org/E299444C-83DC-45DC-9C88-CFC1F-8E20569

Figures 12, 17D, I, 20P

Etymology. Nominative feminine singular form of the Latin adjective *phoenicius* (=Phoenician).

Diagnosis. Within the *Andrena minutula* species group, the female of *A. phoenicia* is characterized by the combination of a labral process which is large and trapezoidal, a clypeus which is apically protuberant and strongly domed, strongly shagreened throughout and finely, sparsely punctured, a scutum which is shagreened, finely and densely punctured, and terga which are shagreened and impunctate. The male is characterized most clearly by the genitalia which possess large rounded dorsal gonocoxite lobes and gonostyli with a strong inward king near the apex. The species is most closely related to *A. stolida* Warncke and *A. simontornyella* Noskiewicz, which share similar genitalia. The female differs in the larger labral process (Figs 17D, 18D), the clypeus which is transversely arched and apically protuberant (domed and not apically protuberant in *A. stolida* and *A. simontornyella*), and the moderately dull scutum (centrally shiny in *A. stolida*, completely dull and more weakly punctured in *A. simontornyella*; Figs 12C, 17I, 18J). The male differs in the larger dorsal gonocoxite lobes which, when viewed together, are broader than the width of the visible base of the penis valves (slightly narrower than this width in the comparison species; Fig. 20P, Q).

Description. FEMALE. ***Body length:*** 6–6.5 mm. — ***Integumental colour:*** Body and legs black. Flagellum dark, distal flagellomeres often with weak reddish hue anteriorly. Apical tarsomeres brown. Wings weakly infuscate, veins and stigma brown (Fig. 12A). Tergal marginal zones black almost to apex (Fig. 12D). — ***Pubescence:*** Body hair relatively sparse, mostly short to medium-lengthed, brightly coloured. Clypeus with sparse, short and thin, whitish plumose hairs. Paraocular area and frons with moderately dense, medium-lengthed plumose whitish hairs (Fig. 12A, B). Facial foveae with dense, minute whitish to brownish hairs, colour changing with angle of view (Fig. 12B, C). Vertex with sparse, erect brownish hairs of varying length. Genal area with sparse short whitish hair (Fig. 12A–C). Discs of scutum and scutellum with moderately dense, inconspicuous thin brownish-golden hairs, the majority very short, with few medium-lengthed scattered in between. Periphery of scutum and scutellum with narrow band of short and thick, golden plumose hairs (Fig. 12A, C). Mesepisternum with moderately dense, long whitish plumose hairs. Propodeal corbicula incomplete, dorsoposterior fringe composed of long whitish plumose hairs, corbicular surface with few, long whitish simple hairs. Leg hair whitish to brownish. Flocculus incomplete, white. Femoral and tibial scopae well-developed, whitish, tibial scopal hairs simple (Fig. 12A). Metasomal surface almost hairless, tergal discs centrally with sparse, minute inconspicuous whitish hairs, laterally with few short whitish hairs. Tergal marginal zones with few medium-lengthed white hairs basolaterally, tergal hair bands absent. Terminal fringe golden to light brown centrally, laterally flanked by few white hairs (Fig. 12A, D). — ***Head:*** 1.15 times broader than long. Mandibles bidentate, moderately crossed. Galea finely shagreened. Labral process broad and large, shiny, trapezoidal. Clypeus transversely arched, fully shagreened and matt, non-rugose or at most with hint of very weak, fine transverse striation on basal half, punctation fine and shallow, distance between punctures 1–2 puncture diameters, an impunctate midline is weakly indicated on basal ¾ (Figs 12B, 17D). Malar area undeveloped. Supraclypeal area longitudinally striated. Paraocular area strongly longitudinally striated, becoming punctate near apex. Flagellomere 1 slightly longer than 2+3, 3 slightly longer than 2 (Fig. 12B). Facial fovea about half as broad as antennocular distance above, weakly tapering below, extending from level of lower end of lateral ocellus to base of clypeus or slightly above, separated from compound eye by narrow strip of smooth cuticle. Distance of fovea from lateral ocellus 1.7 ocellus diameters. Frons coarsely, obliquely striated to rugose-areolate below, more finely and longitudinally so above, medial carina almost reaching frontal ocellus (Fig. 12B, C). Vertex with shallow but distinct groove behind lateral ocelli, dorsal preoccipital ridge moderately carinate. Ocelloccipital distance equals 1 ocellus

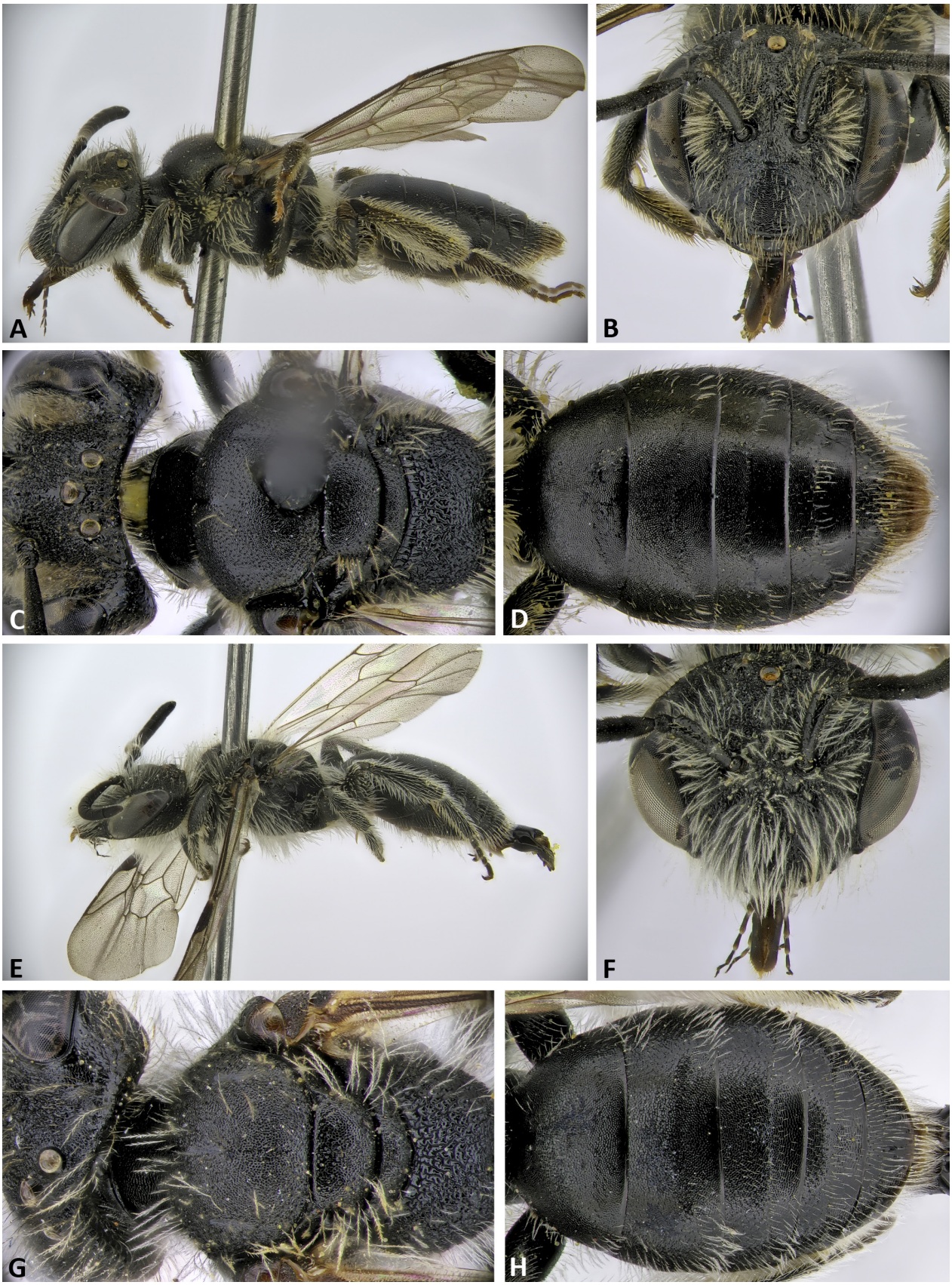

Figure 12. *Andrena phoenicia* Pisanty **sp. nov. A** Female habitus; **B** female head; **C** female vertex and mesosoma; **D** female metasoma; **E** male habitus; **F** male head; **G** male vertex and mesosoma; **H** male metasoma.

diameter (Fig. 12C). — ***Mesosoma:*** Dorsolateral angle of pronotum not elevated. Scutum and scutellum entirely finely shagreened, finely punctured, distance between punctures 0.5–1.5 puncture diameters (Fig. 12C, 15F). Mesepisternum anteriorly with oblique punctures often resembling star-shaped wrinkles, posteriorly shagreened.

Propodeal corbicula finely reticulate, with few large crater-shaped punctures around hair bases. Posterior part of propodeum rugose-areolate, propodeal triangle weakly delineated, with areolation gradually finer apically (Fig. 12C). Hind pretarsal claw with small inner tooth. Recurrent vein 1 reaching submarginal cell 2 at its middle or slightly proximal to it. Nervulus weakly to distinctly antefurcal (Fig. 12A). — ***Metasoma:*** Tergal discs fully shagreened, impunctate. Tergal marginal zones 2–4 arched, 2 fully shagreened, hardly depressed, the following gradually smoother and more strongly depressed (Fig. 12D). Pygidial plate simple, without elevated central zone. — **MALE.** ***Body length:*** 5.5–6.5 mm. — ***Integumental colour:*** As in female, but flagellum entirely black to dark brown, without reddish hue (Fig. 12E, H). — ***Pubescence:*** Body hair mostly white. Clypeus with dense long plumose hairs, partly obscuring underlying cuticle. Rest of face and scape with moderately dense white hair of varying length (Fig. 12E, F). Vertex and gena with whitish erect hair, fully white and very long ventrally (Fig. 12E–G). Periphery of scutum and scutellum with moderately dense whitish hair, disc of scutum with minute, inconspicuous erect whitish hair. Mesepisternum and propodeum with very long, white plumose hair (Fig. 12E, G). Leg hair white (Fig. 12E). Tergal discs centrally with minute inconspicuous hair, laterally with short whitish hair. Tergal marginal zones with white hairs basolaterally, forming very weak lateral hair bands. Terminal fringe white (Fig. 12E, H). — ***Head:*** 1.2 times broader than long (Fig. 12F). Mandibles bidentate, moderately crossed. Galea finely shagreened. Labral process rectangular, smooth. Clypeus arched, densely but shallowly punctured, distance between punctures 0–1 puncture diameters, without impunctate midline, clypeal surface roughened and slightly rugose by elevated puncture margins. Malar area undeveloped. Supraclypeal area longitudinally striated. Paraocular area densely, finely punctate near compound eye, strongly longitudinally striated centrally. Flagellomere 1 about as long as 2+3, 3 longer than 2 (Fig. 12F). Frons coarsely, obliquely striated to rugose-areolate below, finely areolate above. Vertex with shallow but distinct groove behind lateral ocelli, dorsal preoccipital ridge carinate. Ocelloccipital distance equals 1 ocellus diameter (Fig. 12G). — ***Mesosoma:*** Scutum dull, fully, granularly shagreened, densely and finely punctured, distance between punctures 0–1 puncture diameters, some punctures with raised margins (crater-like). Scutellum similar but without crater-like punctures, surface occasionally smoother (Fig. 12G). Hind pretarsal claw bifurcated. Nervulus interstitial to antefurcal. Rest of mesosoma as in female. — ***Metasoma:*** Tergal discs 1–2 fully shagreened, essentially impunctate, 3 and especially 4 often smoother and more weakly shagreened, with hint of very fine punctation. Tergal marginal zones 2–4 weakly arched, moderately depressed, impunctate, 2 more or less fully shagreened, the following gradually smoother (Fig. 12H). — ***Genitalia and hidden sterna:*** Dorsal gonocoxite lobes well-developed, broad, mostly rounded but with weak apicolateral points. Gonostyli thick, outer margins with strong inward curve on distal half, apexes rounded. Penis valves broad basally, basal ⅔ tapering apically (Fig. 20P). Sternum 8 simple, columnar, apical process broadened, apical margin weakly but distinctly emarginate, resembling a fishtail.

Distribution and habitat. Mesic habitats in Israel and Syria, likely also Lebanon.

Flight period. Early April to late May.

Flower records. Collected on Brassicaceae (*Peltaria*, *Sinapis*), Euphorbiaceae (*Euphorbia*) and Rosaceae (*Crataegus*).

Type material. HOLOTYPE: ISRAEL ● 1♀; Har Meron [Mount Meron]; 32.999° N 35.395° E; [1012 m a.s.l.]; 5 Apr. 2016; G. Pisanty leg.; SMNHTAU 239370. – **PARATYPES: ISRAEL** ● 1♀; Abirim, 24 km NE Akko; 17 Apr. 1990; R. Kasher leg.; SMNHTAU 353635 ● 1♂; Bar'am; 4 Apr. 2014; N. Atkin leg.; SMNHTAU 183543 ● 1♂; ibid.; 7 Apr. 2015; O. Winberger leg.; SMNHTAU 184627 ● 1♂; ibid.; 1 Apr. 2016; SMNHTAU 251882 ● 1♀; ibid.; 20 Apr. 2014; on *Sinapis*; SMNHTAU 183353 ● 1♀; Dovev; 3 Apr. 2016; O. Winberger leg.; SMNHTAU 252147 ● 2♀; Har Hermon; 33°18' N 35°46' E; 1700 m a.s.l.; 24 May 2012; L. Friedman leg.; BOLD accession no. ANDIL402-25; SMNHTAU 126599 ● 1♂; Har Hermon; 33.300° N 35.767° E; 1620 m a.s.l.; 11 May 2020; G. Pisanty leg; NHMUK ● 1♂; ibid.; 1600 m a.s.l.; pan trap; SMNHTAU 334873 ● 1♂; ibid.; BOLD accession no. ANDIL480-25; SMNHTAU 334872 ● 1♀; Har Meron; 32.9945° N 35.415° E; 5 Apr. 2016; G. Pisanty leg.; RMNH ● 1♀; ibid.; BOLD accession no. ANDIL428-25; SMNHTAU 239429 ● 1♂; ibid.; SMNHTAU 239433 ● 1♂; ibid.; BOLD accession no. ANDIL429-25; SMNHTAU 239434 ● 2♀; ibid.; 33.000° N 35.3925° E; 22 Apr. 2016; SMNHTAU 240982, 240987 ● 1♂; ibid.; 33.000° N 35.3927° E; 4 Apr. 2017; pan trap; SMNHTAU 270258 ● 1♂; Har Meron; 1000 m a.s.l.; 17 Apr. 2012; L. Friedman leg.; SMNHTAU 124545 ● 1♂; ibid.; 1 May 2022; SMNHTAU 391417 ● 1♀; Har Meron Reserve, Camping under Kefar Meron; 32°58' N 35°26' E; 600 m a.s.l.; 25 Apr. 2002; L. Friedman leg.; SMNHTAU 353668 ● 2♀; Hermon; 33.291–4° N 35.747–51° E; 1440–1550 m a.s.l.; 29 Apr. 2022; G. Pisanty leg.; sweep; SMNHTAU 391561, 391562 ● 1♀; ibid.; NHMUK ● 1♀; Hermon, Biq'at Man; 33.292° N 35.751° E; 1450 m a.s.l.; 29 Apr. 2022; G. Pisanty leg.; pan trap; SMNHTAU 391432 ● 1♂; ibid.; SMNHTAU 391430 ● 1♀; ibid.; on *Peltaria angustifolia*; SMNHTAU 391524 ● 2♀; ibid.; OLML ● 1♀; Hermon, Har Kahal; 33.2885° N 35.730–737° E; 1210–1320 m a.s.l.; 29 Apr. 2022; G. Pisanty leg.; SMNHTAU 391277 ● 1♀; ibid.; 33.289° N 35.730–744° E; 1210–1360 m a.s.l.; on *Crataegus*; SMNHTAU 391319 ● 1♂; ibid.; SMNHTAU 391320 ● 1♂; ibid.; OLML ● 1♀,1♂; ibid.; RMNH ● 2♀; Hermon Nat. Res.; 33.292° N 35.7505° E; 1467 m a.s.l.; 29 Apr. 2022; G. Pisanty leg.; on *Euphorbia*; SMNHTAU 391491, 391492 ● 1♀; Meiron; 23 Apr. 1973; M. Kaplan leg.; SMNHTAU ● 2♀; Merom Golan, N Golan Height; 20 Apr. 1997; R. Kasher leg.; SMNHTAU 353776, 353777 ● 1♀; Mt. Carmel, En Hod; 4 Apr. 1999; S.P.M. Roberts leg.; TJWC ● 2♀; Mt. Carmel, Mitla; 3 Apr. 1999; S.P.M. Roberts leg.; TJWC ● 1♀; Mt. Meron; 9 Apr. 1977. A. Freidberg leg.; SMNHTAU 353649 ● 1♀; Mt. Meron; 900 m a.s.l.; 13 Apr. 1988, I. Yarom leg.; SMNHTAU 353721 ● 1♂; ibid.; SMNHTAU 354498 ● 1♂; ibid.; 11 Apr. 1999; S.P.M. Roberts leg.; TJWC ● 1♀; Ya'ar Odem NR; 33.205° N 35.736° E; 27 Apr. 2020; G. Pisanty leg.; pan trap; SMNHTAU 334552. – **SYRIA** ● 1♂; Tartus, Safita, 10 km E; 300 m a.s.l.; 3 Apr. 1988; L. Blank leg.; OLML.

3.1.2.21. *Andrena* (*Micrandrena*) *rugothorace* Warncke, 1965

Figures 16C, I, 20R

Andrena rugothorace Warncke, 1965: 65, ♀♂ [Greece: OLML].

Distribution and habitat. Shrubland habitats in the north-east Mediterranean. In the Levant, limited to northern Israel, Lebanon and Syria* (Pisanty et al. 2018; Wood et al. 2020; IUCN 2024).

Flight period. Late March to late May.

Flower preferences. Broadly oligolectic on Asteraceae, subfamily Asteroideae (e.g. *Anthemis*) (TJW, unpublished results).

Material examined. GREECE ● 1♀; Eastern Macedonia and Thrace, Abdera, immediately south of Mandra; 40.9917° N 24.9923° E; 21 May 2023; T. Wood leg.; BOLD accession no. WPATW1297-23; TJWC ● 1♀; Eastern Macedonia and Thrace, Kavala, 1 km N Ag. Andreas; 40.8811° N 24.2898° E; 23 May 2023; T. Wood leg.; BOLD accession no. WPATW1298-23; TJWC ● 1♀; Eastern Macedonia and Thrace, Kavala, Sidirochori, 1 km NW; 40.8482° N 24.1389° E; 27 May 2023; T. Wood leg.; BOLD accession no. WPATW1296-23; TJWC. – **ISRAEL** ● 2♂; Hanita; 27 Mar. 1976; D. Gerling leg.; SMNHTAU 353468, 354494 ● 2♂; Har Hermon; 33.2994° N 35.7675° E; 1645 m a.s.l.; 16 Apr. 2021; G. Pisanty leg.; SMNHTAU 361231, 361400 ● 1♂; ibid.; BOLD accession no. ANDIL366-22; SMNHTAU 361408 ● 5♀; ibid.; 33.3015° N 35.7737° E; 1790 m a.s.l.; 15 May 2016; SMNHTAU 242117 to 242121 ● 1♀; ibid.; BOLD accession no. ANDIL246-22; SMNHTAU 242116 ● 1♂; ibid.; 33.2855° N 35.763° E; 1420 m a.s.l.; 7 Apr. 2021; pan trap; SMNHTAU 360681 ● 2♀; ibid.; 33.2984° N 35.7683° E; 1659 m a.s.l.; 19 May 2022; SMNHTAU 392660, 392661 ● 2♂; ibid.; 33.2992° N 35.7670° E; 1644 m a.s.l.; 16 Apr. 2022; SMNHTAU 390135, 390217 ● 1♂; ibid.; 33.300° N 35.767° E; 1610 m a.s.l.; 7 Apr. 2021; SMNHTAU 360764 ● 1♀; ibid.; 33.3005° N 35.767° E; 1600 m a.s.l.; 15 May 2016; SMNHTAU 242039 ● 4♀; ibid.; 33.298–9° N 35.767–70° E; 1640–1675 m a.s.l.; 19 May 2022; sweep; SMNHTAU 392809, 392814, 392816, 392818 ● 1♂; ibid.; 33.299° N 35.769° E; 1650 m a.s.l.; 7 Apr. 2021; sweep; SMNHTAU 360390 ● 3♀; Har Meron; 32.9949° N 35.4166° E; 21 Apr. 2017; G. Pisanty leg.; SMNHTAU 270979, 270982, 270984 ● 1♀; ibid.; 33.00° N 35.395° E; 15 May 2015; SMNHTAU 213893 ● 3♀; ibid.; 33.000° N 35.3925° E; 22 Apr. 2016; SMNHTAU 240975, 240985, 240988 ● 1♂; ibid.; 32°59.7' N 35°24.7' E; 1000 m a.s.l.; 14 Apr. 2011; L. Friedman leg.; SMNHTAU 92591 ● 1♂; Har Meron Reserve, Gat 'En Zeved; 32°59' N 35°26' E; 24 Apr. 2002; L. Friedman leg.; SMNHTAU 353519 ● 1♀; Merom Golan; 3 Apr. 1997; R. Kasher leg.; SMNHTAU 353544 ● 1♂; ibid.; SMNHTAU 353545 ● 1♀; Merom Golan, N Golan Height; 3 Apr. 1997; R. Kasher leg.; SMNHTAU 353753 ● 1♂; ibid.; SMNHTAU 353546 ● 1♀; ibid.; 20 Apr. 1997; SMNHTAU 353775 ● 3♀; Mt. Hermon; 1500 m a.s.l.; 22 May 1990; R. Kasher leg.; SMNHTAU 353660, 353671, 353672 ● 1♀; Mt. Hermon, V.[adi] Ar'ar; 1500 m a.s.l.; 22 May 1990; R. Kasher leg.; SMNHTAU 353633 ● 13♂; Mt. Meron; 900 m a.s.l.; 11 Apr. 1999; S.P.M. Roberts leg.; SPMR ● 1♂; ibid.; 14 Apr. 1999 ● 1♀; 17 km E Qiryat Shemona, Golan, 2 km SE Zomet; 16 May 1996; C. Schmid-Egger leg.; CSE ● 5♀; Ziv'on, 1kmSW; 33.02° N 35.41° E; 22 Apr. 2016; G. Pisanty leg.; SMNHTAU 240827, 240832, 240833, 240835, 240838 ● 1♀; ibid.; BOLD accession no. ANDIL242-22; SMNHTAU 240826. – **LEBANON** ● 2♀,2♂; Balbek-Hermel, Sefri, Haouch Snaid, AUB farm; 33.9244° N 36.0754° E; 1000 m a.s.l.; 6 Apr. 2023; T. Wood leg.; TJWC ● 1♂; ibid.; BOLD accession no. WPATW1059-23 ● 1♀; sudl. Jairoun [Tallet Ain et Tiffaha]; 23 May 2012; M. Kasparek leg.; OLML ● 1♀; Mount Lebanon Governorate, Matn, Wadi El Delb; 1750 m a.s.l.; 11 May 2023; V. Soon leg.; TUZ 342960. – **SYRIA** ● 1♀; Burg Marqab, 7 km SE Banyas; 16 Apr. 1992; K. Warncke leg.; OLML. – **TURKEY** ● 1♂; 50 km N Antalya; 18 Apr. 2015; M. Snižek leg.; BOLD accession no. ANDGP015-25; OLML.

3.1.2.22. *Andrena* (*Micrandrena*) *sillata* Warncke, 1975

Figures 18E, K, 21D

Andrena sillata Warncke, 1975a: 53–54, ♀♂ [S Turkey: OLML].
Andrena sillata ssp. *histrionica* Warncke, 1975a: 54, ♀♂ [Central Turkey: OLML].

Distribution and habitat. As currently understood in a narrow sense (not considering ssp. *histrionica*), limited to shrublands and montane habitats in all countries of the Levant, as well as south-western Turkey and the island of Rhodes (Wood 2024).

Flight period. Early March to late May.

Flower records. Collected from flowering trees of the families Rosaceae (*Prunus*, *Pyrus*) and Sapindaceae (*Acer*).

Material examined. HOLOTYPE: TURKEY ● ♀; Akseki/Taurus; 1300 m a.s.l.; 25 Apr. 1973; K. Warncke leg.; OLML. – **PARATYPES: GREECE** ● 2♀; Rhodes, Profitis Ilias; 20 Apr. 1970; H. Teunissen leg.; OLML. – **TURKEY** ● 1♂; Akseki/Taurus; 1300 m a.s.l.; 25 Apr. 1973; K. Warncke leg.; OLML. – **non-type material: IRAN (ssp. *histrionica*)** ● 1♀; Ilam province, Abda Man, Dinar Gaouh; 1830 m a.s.l.; 12 May 2016; M. Kafka leg.; BOLD accession no. ANDGP018-25; OLML. – **ISRAEL** ● 2♀; Bar'am; 1 Apr. 2016; O. Winberger leg.; SMNHTAU ● 2♀; ibid.; 4 Apr. 2014; pan trap ● 1♀; Dovev; 14 Apr. 2016; O. Winberger leg.; SMNHTAU ● 1♂; Galilea, 4 km E of Har Meron; 9 Apr. 1988; R. Leys leg.; RMNH ZMA.INS.5104507 ● 1♂; Gush Halav; 31 Mar. 2016; O. Winberger leg.; SMNHTAU ● 1♀; Har Addir; 33.033° N 35.361° E; 5 Apr. 2016; G. Pisanty leg.; pan trap; SMNHTAU ● 1♀; Har Avital; 15 Mar. 1995; R. Kasher leg.; SMNHTAU ● 5♂; Har Hermon; 33.2855° N 35.763° E; 1420 m a.s.l.; 7 Apr. 2021; G. Pisanty leg.; pan trap; SMNHTAU ● 3♂; ibid.; 33.296° N 35.763° E; 1540 m a.s.l. ● 44♂; ibid.; 33.2991° N 35.7667° E; 1644 m a.s.l.; 16 Apr. 2022 ● 31♂; ibid.; 33.2992° N 35.7670° E ● 2♂; ibid.; 33.2993° N 35.7679° E; 1649 m a.s.l.; 16 Apr. 2021; on *Acer monspessulanum* ● 75♂; ibid.; 33.2994° N 35.7675° E; 1645 m a.s.l.; pan trap ● 7♂; ibid.; NHMUK ● 7♂; ibid.; OLML ● 7♂; ibid.; RMNH ● 1♂; ibid.; BOLD accession no. ANDIL123-22; SMNHTAU 361221 ● 1♂; ibid.; BOLD accession no. ANDIL125-22; SMNHTAU 361315 ● 4♂; ibid.; sweeping; SMNHTAU ● 5♂; ibid.; 33.2996° N 35.7677° E; 1642 m a.s.l.; 16 Apr. 2022; pan trap ● 3♂; ibid.; 33.300° N 35.767° E; 1610 m a.s.l.; 7 Apr. 2021 ● 3♂; ibid.; 33.300° N 35.7675° E; 1640 m a.s.l.; sweeping ● 1♀; Har Meron; 1000 m a.s.l.; 1 Apr. 2021; L. Friedman leg.;

SMNHTAU ● 1♀; ibid.; 17 Apr. 2012 ● 2♀; ibid.; 32º59.7' N 35º24.7' E; 14 Apr. 2011 ● 1♀,1♂; Har Meron; 1100 m a.s.l.; 17 Apr. 2000; A. Freidberg leg.; SMNHTAU ● 2♀; Har Meron; 33.00° N 35.395° E; 15 May 2015; G. Pisanty leg.; SMNHTAU ● 9♀; ibid.; 33.000° N 35.3925° E; 21 Apr. 2016 ● 1♀; ibid.; 32.9987° N 35.392° E; 21 Apr. 2016; pan trap ● 1♀; ibid.; BOLD accession no. ANDIL063-22; SMNHTAU 241011 ● 5♀,12♂; ibid.; 33.000° N 35.3927° E; 4 Apr. 2017 ● 1♂; ibid.; BOLD accession no. ANDIL075-22; SMNHTAU 270271 ● 1♂; Har Meron, 4 km E; 9 Apr. 1988; R. Leys leg.; RMNH ● 1♂; Hermon; 33.2993° N 35.7670° E; 1641 m a.s.l.; 16 Apr. 2022; G. Pisanty leg.; on *Prunus dulcis*; SMNHTAU ● 1♂; ibid.; 33.2992° N 35.7668° E; 1642 m a.s.l.; on Rosaceae ● 1♀; Hermon NR, Har Kahal; 33.286° N 35.736° E; 1368 m a.s.l.; 28 May 2019; L. Friedman leg.; ● 1♀; ibid.; BOLD accession no. ANDIL091-22; SMNHTAU 308184 ● 3♂; Hermon NR, Har Shezif; 33.286° N 35.7524° E; 1447 m a.s.l.; 16 Apr. 2022; G. Pisanty leg.; pan trap; SMNHTAU ● 1♀; Kefar Giladi S; 12 Apr. 1997; R. Kasher leg.; SMNHTAU ● 1♀; ibid.; 14 Apr. 1997 ● 1♀; Kfar Shammay; 13 Apr. 1988; I. Yarom leg.; SMNHTAU ● 1♀; Mata; 8 Apr. 2024; A. Lofchick leg.; SMNHTAU 456744 ● 2♀; Ma'yan Barukh; 33.232° N 35.611° E; 29 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462800, 462804 ● 1♀; Meiron; 23 Apr. 1973; M. Kaplan leg.; SMNHTAU ● 1♀; [Mount] Meron; 23 Apr. 1973; D. Furth leg.; SMNHTAU ● 5♀; Meron JNC.; 20 Mar. 1995; on *Pyrus syriaca*; SMNHTAU ● 1♀; Meron NR, 1.2 km SSW Meron Field School; 32º59'55" N 35º23'31" E; 998 m a.s.l.; 3 Apr. 2016; A. Dorchin leg.; SMNHTAU ● 1♀; Mt. Carmel, Mitla; 3 Apr. 1999; S.P.M. Roberts leg.; SPMR ● 2♂; Mt. Meron; 900 m a.s.l.; 11 Apr. 1999; S.P.M. Roberts leg.; SPMR ● 1♀; MtMeron; 1000 m a.s.l.; 13 Apr. 1988; I. Yarom leg.; SMNHTAU ● 2♂; Nahal Keziv, Montfort; 33°02.6' N 35°13.3' E; 4 Mar. 2010; L. Friedman leg.; SMNHTAU ● 2♀,2♂; Sasa; 3 Apr. 2016; O. Winberger leg.; SMNHTAU ● 2♀,2♂; ibid.; 14 Apr. 2016 ● 2♀; ibid.; 1 Apr. 2014; pan trap ● 1♀; ibid.; 20 Apr. 2015; ● 1♀; ibid.; 27 Apr. 2015 ● 1♀; Snir, Hermon Field Study Center; 21 Mar. 1997; R. Kasher leg.; SMNHTAU ● 1♂; W. Habiz, Mt. Meron; 8 Apr. 1972; H. Lebel leg.; SMNHTAU ● 1♀,1♂; Ya'ar Odem N.R.; 1 Mar. 2018; G. Pisanty leg.; SMNHTAU ● 1♂; ibid.; BOLD accession no. ANDIL082-22; SMNHTAU 286454 ● 2♀; Ya'ar Odem NR; 33.205° N 35.736° E; 27 Apr. 2020; G. Pisanty leg.; pan trap; SMNHTAU ● 1♀; ibid.; BOLD accession no. ANDIL100-22; SMNHTAU 334556 ● 1♂; ibid.; 33.206° N 35.736° E; 27 Feb. 2020 ● 1♀; Ziv'on, 1 km SW; 33.019° N 35.407° E; 5 Apr. 2016; G. Pisanty leg.; SMNHTAU ● 1♀; ibid.; 33.02° N 35.41° E; 21 Apr. 2016. – **JORDAN** ● 1♀; 10 km N Jerash; 20 Apr. 2002; M. Snižek leg.; OLML. – **LEBANON** ● 1♀; Beqaa, Rachaiya, 5 km S, Mount Hermon nature reserve; 33.4586° N 35.8395° E; 1500 m a.s.l.; 8 Apr. 2023; T. Wood leg.; BOLD accession no. WPATW1068-23; TJWC ● 3♀; Mount Lebanon, Salima; 800 m a.s.l.; 29 Apr. 1996; C.G. Roche leg.; OUMNH ● 1♀; Ras El Beida; 3 Apr. 1978; D. Gerling leg.; SMNHTAU. – **SYRIA** ● 1♀,8♂; Bludan [Bloudan], 57 km NW Damascus; 2000 m a.s.l.; 24 Apr. 1992; K. Warncke leg.; OLML ● 1♀; Slenfe [Slanfah]; 19 Apr. 1986; K.M. Guichard leg.; NHMUK. – **TURKEY** ● 1♂; Muğla, University campus; 720 m a.s.l.; 1–30 Apr. 2015; Barták & Kubik leg.; BOLD accession no. ANDGP016-25; OLML. – **WEST BANK** ● 1♀; Azun; 7 Mar. 1973; M. Kaplan leg.; SMNHTAU.

3.1.2.23. *Andrena* (*Micrandrena*) *spreta* Pérez, 1895

Figures 17K, M, 20J

Andrena spreta Pérez, 1895: 43–44, ♀ [Algeria: MNHN].

?*Andrena lampronota* Pérez, 1911: 41 [Syria: ?MNHN].

Andrena spreta ssp. *scirpacea* Warncke, 1975a: 52, ♀♂ [SE Turkey: OLML].

Andrena (*Micrandrena*) *spreta* Pérez: Gusenleitner & Schwarz 2002: 714–715 (first description of nominate ♂).

Distribution and habitat. Circum-Mediterranean (excluding the Balkan Peninsula), including all the Levant and Cyprus, in coastal, shrubland and semi-desert habitats.

Flight period. Early January to late May.

Flower preferences. Polylectic with a strong preference for Brassicaceae; minor pollen hosts include Asteraceae, Euphorbiaceae and Fabaceae (Wood 2023a). In Israel and Cyprus, collected on *Biscutella*, *Erucaria*, *Isatis*, *Rapistrum*, *Sinapis*, *Sisymbrium* and *Vicia*.

Remarks. *Andrena spreta* is widespread throughout most of the Mediterranean Basin. Due to the lack of strongly diagnostic characters, as well as considerable intraspecific variation, it is difficult to reliably diagnose, especially in the female. Examination of material from Israel and Cyprus shows that the species has been regularly confused with *A. aphroditae* **sp. nov.**, *A. hebraica* **sp. nov.**, *A. tiaretta* and *A. tkalcui*. In the Western Mediterranean it has also been regularly confused with *A. curtula* Pérez, *A. pauxilla* Stöckhert and *A. pusilla* Pérez (Wood 2023a). Separation from female *A. tiaretta* is especially difficult and often impossible. Warncke described two subspecies of *A. spreta*, *A. s. scirpacea* from Turkey and the Levant, and *A. s. povolnyi* from Afghanistan. Of these, *A. s. povolonyi* possesses a distinct genital capsule and we believe it merits a species status. On the other hand, *A. s. scirpacea* material from Israel is genetically inseparable from the nominate form based on COI barcodes, although genetic material from Turkey is needed to fully validate the status of the taxon.

Material examined. CYPRUS ● 1♀; Káto Polemídia, 1km W Karmiotissa; 34.7118° N 32.9661° E; 197 m a.s.l.; 18 Apr. 2024; R. Santerre leg.; on the ground; BOLD accession no. RSCMC034-25; UMONS ● 1♀; Lánia; 34.8226° N 32.9132° E; 512 m a.s.l.; 7 Mar. 2024; R. Santerre leg.; flying; BOLD accession no. RSCMC033-25; UMONS ● 1♀; Lófou, 0.5km W from village; 34.8158° N 32.8684° E; 793 m a.s.l.; 27 Apr. 2024; R. Santerre leg.; at nesting site; BOLD accession no. RSCMC036-25; UMONS ● 5♀; Paphos [District], Neo Chorio; 35.021–5° N 32.354–60° E; 11 Apr. 2025; G. Pisanty leg.; on *Sinapis*; SMNHTAU 467247 to 467251 ● 1♂; Pissouri; 34.662–6° N 32.687–98° E; 250 m a.s.l.; 14 Apr. 2023; G. Pisanty leg.; BOLD accession no. ANDCY034-24; SMNHTAU 427242 ● 1♂; ibid.; on Asteraceae; SMNHTAU 427178 ● 2♀; ibid.; on Brassicaceae; SMNHTAU 427172, 427176 ● 1♀; ibid.; BOLD accession no. ANDCY027-24; SMNHTAU 427173 ● 1♀; ibid.; BOLD accession no. ANDCY028-24; SMNHTAU 427174 ● 1♂; Skorinou [Skarinou], Rt. E105; 34°49.5' N 33°21.7' E; 7 Apr. 2008; A. Freidberg leg.; SMNHTAU 438670 ● 1♀; Trimithousa, Evretou dam; 34.9738° N 32.4777° E; 179 m a.s.l.; 22 Apr. 2024; R. Santerre leg.; on Apiaceae; BOLD accession no. RSCMC035-25;

UMONS. – **ISRAEL** ● 1♀; B.S.Hazeva [Hazeva Field School]; 10 Jan. 1998; S. Alfi leg.; SMNHTAU 367679 ● 6♀; Be'er Sheva, Negev Monument; 31.2665° N 34.8215° E; 350 m a.s.l.; 18 Feb. 2025; G. Pisanty leg.; SMNHTAU 463068, 463079 to 463083 ● 15♀,2♂; Beersheba; 15 Apr. 1970; H. Bytinski-Salz leg.; SMNHTAU ● 2♀; ibid.; 28 Mar. 19[??] ● 1♂; Beit Haarava; 23 Mar. 1946; SMNHTAU ● 1♀; Beit Nir; 11 Mar. 2018; T. Roth leg.; on *Biscutella didyma*; SMNHTAU 290292 ● 1♀; Ben Shemen Forest; 31.93° N 34.972° E; 18 Feb. 2017; G. Pisanty leg.; SMNHTAU 268569 ● 1♀; Bet Guvrin; 31.610–6° N 34.890° E; 17 Feb. 2023; G. Pisanty leg.; sweep; SMNHTAU 420842 ● 1♀; Bet Guvrin; 31.611° N 34.890° E; 17 Feb. 2023; G. Pisanty leg.; pan trap; SMNHTAU 420827 ● 2♂; Bet Ha'Emeq; 6 Feb. 2000; L. Friedman leg.; SMNHTAU ● 1♀; Bet Nir, 1.5km SSE; 31.6347° N 34.879° E; 17 Feb. 2023; G. Pisanty leg.; pan trap; SMNHTAU 420906 ● 2♀; Bet Shiqma; 31.643° N 34.619° E; 1 May 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462759, 462761 ● 1♂; Brurchajl [Bror Hayil]; 15 Feb. 1960; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; Buraiqa NatReserve; 32.5413° N 34.979° E; 15 Feb. 2021; G. Pisanty leg.; SMNHTAU 356742 ● 3♀; Carmel; 12 Mar. 1940; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; Dag [?]; 8 Jan. 1940; SMNHTAU ● 1♂; Deganya A, Bet Gordon; 3 Mar. 1942; Y. Palmoni leg.; on *Sinapis alba* & *Diplotaxis*; SMNHTAU 181509 ● 1♀; EinGedi; 14 Apr. 1962; Kugler leg.; SMNHTAU 353589 ● 1♀; En Kerem; 28 Mar. 1969; Y. Ayal. leg.; SMNHTAU 353590 ● 1♀; Geulim; 18 Mar. 2015; I. Eliakim leg.; SMNHTAU 185815 ● 1♀; Gilat Research Center, 500 m NNE; 31.341° N 34.6693° E; 2 Mar. 2022; G. Pisanty leg.; pan trap; SMNHTAU 386286 ● 1♂; Gilat Research Center, 500 m NNE, fallow field; 31.3405° N 34.670° E; 2 Mar. 2022; G. Pisanty leg.; sweep; SMNHTAU 385041 ● 1♀; Gilat Research Center, fallow field; 31.3372° N 34.663° E; 2 Mar. 2022; G. Pisanty leg.; sweeping; SMNHTAU 385003 ● 1♂; Golan, Gilbon; 21 Apr. 1988; I. Yarom leg.; SMNHTAU 353505 ● 1♀; Gvar'am NR; 31.58° N 34.59° E; 1 Mar. 2023; G. Pisanty leg.; sweep; SMNHTAU 422747 ● 1♂; Gvulot; 22 Feb. [19]84; E. Shney-Dor leg.; SMNHTAU 353457 ● 4♀, 2♂; Haifa Carmel; 17 Feb. 1973; A. Freidberg leg.; SMNHTAU ● 1♀; Haniel; 23 Apr. 2023; S. Asis leg.; SMNHTAU 414782 ● 1♀; Har Hermon; 33.2992° N 35.7670° E; 1644 m a.s.l.; 16 Apr. 2022; G. Pisanty leg.; pan trap; SMNHTAU 390173 ● 1♂; Har Meron; 800 m a.s.l.; 5 Mar. 2011; A. Freidberg leg.; SMNHTAU 89132 ● 1♀; ibid.; 1100 m a.s.l.; 17 Apr. 2000; SMNHTAU 353670 ● 1♀; Har'el; 13 Apr. 2009; G. Pisanty leg.; on *Sinapis arvensis*; SMNHTAU 27696 ● 1♀; Har'el; 21 Feb. 2020; K. Levy leg.; SMNHTAU 338152 ● 1♀; Hazeva; 21 Feb. 2008; A. Gotlieb leg.; SMNHTAU 22120 ● 1♀; Herzliya; 21 Apr. 1966; H. Bytinski-Salz leg.; SMNHTAU ● 3♀; Herzliyya; 7 May 1982; A. Freidberg leg.; Malaise trap; SMNHTAU 353696 to 353698 ● 1♀; ibid.; 9 May 1982; SMNHTAU 354478 ● 1♀; ibid.; 12 May 1982; SMNHTAU ● 1♂; Herzliyya; 18 Dec. 2000; A. Freidberg & L. Friedman leg.; SMNHTAU 353517 ● 2♂; Hof Rosh Haniqra N.R.; 33.076–85° N 35.105–9° E; 18 Mar. 2025; G. Pisanty leg.; SMNHTAU 464966, 464968 ● 1♀; Hof Rotem Shezaf, 3kmS'En-Gev; 32°46' N 35°38.3' E; –200 m a.s.l.; 21 Mar. 2010; M. Guershon leg.; SMNHTAU 53178 ● 1♂; Holon; 27 Feb. 1973; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; ibid.; 12 Mar. 1973; ● 2♂; ibid.; 8 Mar. 1975; SMNHTAU 353465, 353466 ● 1♀; Holot Shunera; 30.941° N 34.597° E; 17 Mar. 2017; G. Pisanty leg.; pan trap; SMNHTAU 269103 ● 1♀; Horeshim; 32.138° N 34.976° E; 11 Feb. 2017; G. Pisanty leg.; SMNHTAU 268534 ● 1♀; Hulda; 23 Mar. 2017; T. Roth; SMNHTAU 272645 ● 1♀; Jerusalem; 15 Mar. 1940; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; ibid.; 1 Mar. 1964 ● 1♂; Jerusalem, Mt.Scopus; 15 Mar. 1946; SMNHTAU ● 1♀; Kefar Barukh; 32.650° N 35.175–180° E; 2 May 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462994 ● 1♀; Kefar Giladi N; 25 Mar. 1997; R. Kasher leg.; SMNHTAU 353758 ● 1♂; Kefar Menahem; 10 May 2009; G. Pisanty leg.; BOLD accession no. ANDIL452-25; SMNHTAU 28655 ● 1♀; Kefar Uriyya–Tarum; 31.78–80° N 34.95–97° E; 25 Feb. 2017; G. Pisanty leg.; SMNHTAU 268529 ● 1♀; Kfar Giladi; 18 May 1958; H. Bytinski-Salz leg.; SMNHTAU ● 2♀; Kfar Masaryk; 32.87° N 35.13° E; 4 Apr. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462833, 462851 ● 1♀; Kfar Menachen; 8 Mar. 2008; U. Roll leg.; SMNHTAU 25012 ● 1♂; Kineret; 4 Mar. 1968; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; Kinneret (Qevuza); 12 Apr. 1942; Y. Palmoni leg.; SMNHTAU 181499 ● 1♀; ibid.; 8 Apr. 1936; on thistles; SMNHTAU 181512 ● 1♂; Klahim; 31.453° N 34.691° E; 12 Mar. – 30 Apr. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462963 ● 1♀; Lachish; 18 Feb. 2020; T. Roth; on *Isatis lusitanica*; SMNHTAU 338257 ● 1♀; Lahav; 5 Jan. 1971; Kugler leg.; SMNHTAU 353585 ● 1♂; Lahav; 27 Feb. 1974; A. Freidberg leg.; SMNHTAU ● 1♀; Lakhish; 18 Feb. 2013; T. Shapira leg.; BOLD accession no. ANDIL153-22; SMNHTAU 133175 ● 1♀; Lakhish, 2km E; 31.556° N 34.87° E; 5 Feb. 2016; G. Pisanty leg.; SMNHTAU 233249 ● 1♀; ibid.; pan trap; SMNHTAU 233261 ● 1♀; Lakhish, 3km NE; 31.575° N 34.870° E; 11 Mar. 2016; G. Pisanty leg.; SMNHTAU 236051 ● 1♂; ibid.; 31.578° N 34.870° E; 19 Feb. 2016; SMNHTAU 234225 ● 1♂; ibid.; 26 Feb. 2016; BOLD accession no. ANDIL219-22; SMNHTAU 234628 ● 2♀; ibid.; 31.579° N 34.871° E; 4 Mar. 2016; on *Sinapis*; SMNHTAU 235193, 235194 ● 1♀; ibid.; BOLD accession no. ANDIL224-22; SMNHTAU 235192 ● 5♀; Lehavim; 31.365° N 34.830° E; 28 Jan. 2015; G. Pisanty leg.; pan trap; SMNHTAU 202230 to 202232, 202236, 202281 ● 5♀; Mashabe Sade; 16 Feb. 1976; A. Freidberg leg.; SMNHTAU 353653 to 353657 ● 1♀; Mashabei Sade; 16 Feb. 1976; M. Kaplan leg.; SMNHTAU 353652 ● 1♀; Masmiya; 27 Feb. 1957; on *Vicia faba*; SMNHTAU ● 1♀; Ma'yan Barukh; 33.232° N 35.611° E; 29 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462805 ● 1♂; ibid.; 3 May 2023; SMNHTAU 462787 ● 3♀; Me'arat Yishah, 0.5km E; 32.718° N 35.007° E; 22 Feb. 2019; G. Pisanty leg.; SMNHTAU 321608, 321612, 321694 ● 1♀; ibid.; BOLD accession no. ANDIL313-22; SMNHTAU 321613 ● 1♂; ibid.; BOLD accession no. ANDIL315-22; SMNHTAU 321644 ● 1♀; Mishmar Hanegev; 24 Apr. 2023; S. Asis leg.; SMNHTAU 414772 ● 2♀; Monfort; 4 Mar. 1976; M. Kaplan leg.; SMNHTAU 353623, 353625 ● 1♂; ibid.; SMNHTAU 354493 ● 1♀; ibid.; A. Freidberg leg.; SMNHTAU 353624 ● 1♂; Montfort; 10 Mar. 1981; A. Freidberg leg.; SMNHTAU 353537 ● 4♀; ibid.; F. Kaplan leg.; SMNHTAU 354471 to 354474 ● 2♂; ibid.; SMNHTAU 353538, 353543 ● 2♂; Montfort, Nahal Keziv; 28 Feb. 2018; G. Pisanty leg.; SMNHTAU 286317, 286322 ● 1♂; ibid.; BOLD accession no. ANDIL281-22; SMNHTAU 286323 ● 1♀; N.[ahal] Amud; 23 Feb. 1983; I. Yarom leg.; SMNHTAU 353659 ● 1♂; N.[ahal] Oren; 4 Mar. 1975; M. Kaplan leg.; SMNHTAU 353478 ● 1♀; Nachshon; 20 Feb. 2020; K. Levy leg.; SMNHTAU 338535 ● 1♀; Nachson; 20 Feb. 2020; T. Roth leg.; SMNHTAU 346690 ● 1♀; Nahal Alexander; 5 Apr. 2016; K. Levy leg.; SMNHTAU 250395 ● 1♀; ibid.; 24 Apr. 2016; SMNHTAU 250665 ● 1♀; ibid.; 23 Mar. 2017; SMNHTAU 274012 ● 1♀; ibid.; 8 Mar. 2018; SMNHTAU 291800 ● 1♀; ibid.; 5 Apr. 2018; SMNHTAU 291547 ● 1♀; ibid.; 6 Apr. 2018; SMNHTAU 291483 ● 1♀; ibid.; 19 Mar. 2019; SMNHTAU 311270 ● 1♀; ibid.; 27 Feb. 2020; SMNHTAU 337968 ● 1♀; ibid.; 29 Feb. 2020; SMNHTAU 337455 ● 1♀; ibid.; 11 Mar. 2019; on *Senecio joppensis*; SMNHTAU 311506 ● 1♀; ibid.; 18 Mar. 2019; on *Brassica tournefortii*; SMNHTAU 311529 ● 1♀; ibid.; 2 Apr. 2020; on *Euphorbia terracina*; SMNHTAU 337461 ● 1♀; ibid.; 3 Apr. 2020; SMNHTAU 337473 ● 4♀; Nahal Hazav, BitronotRuhama; 31°32' N 34°42' E; 5 Apr. 2005; A. Freidberg leg.; SMNHTAU 353703, 354475 to 354477 ● 4♀; Nahal Keziv; 33.0465° N 35.226° E; 26 Feb. 2021; G. Pisanty leg.;

SMNHTAU 357575 to 357578 ● 3♂; ibid.; SMNHTAU 357654, 357656, 357660 ● 2♂; Nahal Shemarya; 31.341° N 34.6567° E; 2 Mar. 2022; G. Pisanty leg.; pan trap; SMNHTAU 386185, 386186 ● 2♂; ibid.; 31.341° N 34.6568° E; sweeping; SMNHTAU 385074, 385076 ● 1♂; Nahal Ye'elim; 21 Apr. 2005; L. Friedman leg.; SMNHTAU 354487 ● 1♀; Nahshon; 23 May 2009; G. Pisanty leg.; SMNHTAU 31453 ● 1♀; ibid.; 10 Feb. 2010; pan trap; SMNHTAU 31903 ● 1♀; Nahshonim; 27 Apr. 2023; S. Asis leg.; SMNHTAU 414777 ● 1♀; Nes Ziona, orchard; 27 Feb. 1991; W. Kuslitzky leg.; SMNHTAU 353632 ● 1♀; Netanya, Irus Ha'Argaman NR; 32.287° N 34.842° E; 24 Feb. 2021; G. Pisanty leg.; BOLD accession no. ANDIL348-22; SMNHTAU 357205 ● 1♂; Or 'Aqiva, 1km E; 32.493° N 34.934° E; 33 m a.s.l.; 2 Mar. 2025; L. Friedman leg.; SMNHTAU 464106 ● 1♂; Park Britannia; 10 Feb. 2011; T. Koznichki leg.; pan trap; SMNHTAU 81247 ● 3♀; ibid.; 24 Apr. 2011; SMNHTAU 354427 to 354429 ● 3♀; Park Britannia; 20 Apr. 2015; T. Chaprazaro leg.; SMNHTAU 185250, 185255, 185264 ● 9♀; ibid.; 14 Apr. 2016; SMNHTAU 251132 to 251134, 251136, 251137, 251661, 251662, 251664, 251671 ● 1♀; ibid.; BOLD accession no. ANDIL434-25; SMNHTAU 251670 ● 2♀; Park Britanya; 15 Apr. 2010; T. Koznichki leg.; on *Erucaria*; SMNHTAU 59603, 59604 ● 2♀; ibid.; 11 Feb. 2011; pan trap; SMNHTAU 81266, 81281 ● 1♂; Park haYarden; 32°54.7' N 35°37.6' E; –190 m a.s.l.; 22 May 2011; M. Guershon leg.; BOLD accession no. ANDIL514-25; SMNHTAU 94347 ● 1♀; ParkHayarden; 27 Apr. 1984; A. Freidberg leg.; SMNHTAU 353706 ● 1♂; ibid.; SMNHTAU 353480 ● 1♀; Pura Nature Reserve; 31.496° N 34.778° E; 27 Mar. 2015; G. Pisanty leg.; SMNHTAU 208232 ● 1♀; Pura NR; 31°29'48" N 34°46'35" E; 200 m a.s.l.; 22 Feb. 2022; L. Friedman leg.; SMNHTAU 384828 ● 1♂; Qazrin; 32°59.2' N 35°41.8' E; 335 m a.s.l.; 22 May 2011; A. Freidberg leg.; BOLD accession no. ANDIL513-25; SMNHTAU 94280 ● 1♀; Qedma; 17 Feb. 2010; G. Pisanty leg.; pan trap; BOLD accession no. ANDIL312-22; SMNHTAU 31897 ● 1♂; Qiryat Gat - Bet Qama; ca. Jan. 2011; I. Van Rijn leg.; BOLD accession no. ANDIL508-25; SMNHTAU 81065 ● 1♀; R.G.n [?Ramat Gan]; 3 Feb. 1940; SMNHTAU ● 1♀; Ramat haNadiv; 13 Feb. 2013; T. Shapira leg.; SMNHTAU 150961 ● 2♀; Ramleh; SMNHTAU ● 2♀; Ramot Naftali; 24 Apr. 2014; O. Winberger leg.; SMNHTAU 183286, 183437 ● 1♀; Road 87, 260m E Yehudiyya Jcn, Plot D6; 32.902° N 35.650° E; –160 m a.s.l.; 11 Apr. 2019; A. Dorchin, Y. Mersman & O. Halbershtat leg.; BOLD accession no. ANDIL455-25; SMNHTAU 307451 ● 3♀; Rosh Ha'Ayin; 6 Apr. 2015; A. Freidberg leg.; SMNHTAU 223984, 223991, 223994 ● 1♂; ibid.; SMNHTAU 224019 ● 1♀; Rosh Ha'Ayin, East, Hirbet Kseyfe; 32.091° N 34.999° E; 140 m a.s.l.; 7 Mar. 2022; L. Friedman leg.; SMNHTAU 386914 ● 1♀; Rosh Ha'ayin Forest; 32.1013° N 34.9695° E; 28 Mar. 2022; G. Pisanty leg.; sweeping; SMNHTAU 388617 ● 2♀; Sa'ad; 31.468° N 34.5287° E; 21 Jan. 2015; G. Pisanty leg.; pan trap; SMNHTAU 201960, 201961 ● 4♀; ibid.; 31.469° N 34.528° E; on Brassicaceae; SMNHTAU 201971, 201973, 201974, 201977 ● 1♀; ibid.; BOLD accession no. ANDIL176-22; SMNHTAU 201976 ● 4♂; Sederot; 27 Feb. 1974; A. Freidberg leg.; SMNHTAU ● 6♀; Sha'alvim; 7 Feb. 2010; G. Pisanty leg.; pan trap; SMNHTAU 31806, 31842, 31853 to 31855, 31875 ● 4♂; ibid.; SMNHTAU 31804, 31805, 31856, 31877 ● 1♀; Sha'alvim; 16 Mar. 2017; T. Roth leg.; BOLD accession no. ANDIL267-22; SMNHTAU 272520 ● 2♀; Snir - Hermon Field Study Center; 27 Mar. 1997; R. Kasher leg.; SMNHTAU 354440, 354442 ● 1♀; Snir, Hermon Field Study Center; 13 Mar. 1997; R. Kasher leg.; SMNHTAU 354449 ● 1♂; T. A b [?Tel Aviv]; 13 Feb. 1940; SMNHTAU ● 1♀; Tal Shahar; 2 Apr. 2010; G. Pisanty leg.; on *Sinapis alba*; SMNHTAU 31926 ● 1♂; Tel Aviv; 18 Mar. 1974; H. Bytinski-Salz leg.; SMNHTAU 354459 ● 1♂; Tel Aviv, 4 Lipsky St.; 32.0883° N 34.7888° E; 6 Mar. 2015; G. Pisanty leg.; BOLD accession no. ANDIL189-22; SMNHTAU 206177 ● 1♀; Tel Aviv, Tzapari, Park HaYarqon; 10 m a.s.l.; 18 Mar. 2015; T. Novoselsky & A. Freidberg leg.; on *Eucalyptus camaldulensis*; SMNHTAU 207446 ● 1♂; Tel Aviv BG.; 5 Mar. 1972; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; ibid.; 10 Mar. 1972 ● 1♂; ibid.; 15 Feb. 1973 ● 1♂; ibid.; 21 Feb. 1973 ● 1♂; ibid.; 8 Mar. 1974; SMNHTAU 354488 ● 1♂; Tel Aviv N; 17 Feb. 1973; H. Bytinski-Salz leg.; SMNHTAU ● 3♂; ibid.; 20 Feb. 1973 ● 1♂; Tel Aviv University; 15 Feb. 2007; W. Kuslitzky leg.; Malaise trap; SMNHTAU 354492 ● 1♂; Tel Sokho; 280 m a.s.l.; 4 Feb. 2020; L. Friedman leg.; BOLD accession no. ANDIL468-25; SMNHTAU 330928 ● 1♀; Tel Zafit; 31 Mar. 2018; T. Roth leg.; on *Rapistrum rugosum*; SMNHTAU 290830 ● 1♀; Tivon; 30 Mar. 19[??]; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; W.[adi]Saar Golan; 1 Jun. 1970; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; Ya'ar Kedoshim; 26 Feb. 2017; Y. Farago leg.; on *Sinapis alba*; SMNHTAU 272178 ● 1♀; Ya'ar Nehosha; 14 Apr. 2016; T. Chaprazaro leg.; SMNHTAU 251680 ● 1♀; ibid.; 15 Apr. 2016; BOLD accession no. ANDIL435-25; SMNHTAU 251694 ● 1♀; Ya'ar Nehusha; 15 Feb. 2011; T. Koznichki leg.; pan trap; SMNHTAU 81365 ● 1♂; ibid.; SMNHTAU 81356 ● 1♀; Yagur; 32.74° N 35.07° E; 24 Apr. 2015; G. Pisanty leg; BOLD accession no. ANDIL207-22; SMNHTAU 214114 ● 1♂; Yerushalayim; 24 Feb. 2014; A. Gotlieb leg.; SMNHTAU 184220 ● 1♂; Zemach; 21 Feb. 19[??]; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; Zemah; 32°42.3' N 35°35.9' E; 21 Mar. 2010; M. Guershon leg.; SMNHTAU 53149 ● 1♀; ZikhronYaakov; 9 Feb. 1988; I. Yarom leg.; SMNHTAU 353722 ● 1♂; Zomet Nappah; 3 Mar. 2016; L. Friedman leg.; BOLD accession no. ANDIL425-25; SMNHTAU 235044 ● 2♀; Zova; 10 May 2012; Y. Berner leg.; SMNHTAU 132754, 132756 ● 1♀; Zur Moshe; 16 Mar. 2015; I. Eliakim leg.; SMNHTAU 185768. – **JORDAN** ● 1♀; Al Maghtas; 24 Feb. 1942; H. Bytinski-Slaz leg.; SMNHTAU 353599 ● 3♀; ibid.; 25 Feb. 1942; SMNHTAU 353597, 353598, 402794 ● 3♀; 30 km NW Ajlun; 600 m a.s.l.; 29 Apr. 2006; K. Deneš leg.; OLML ● 1♀; Amman, Campus of the University of Jordan; 11 Mar. 1978; Ph. Pronk leg.; RMNH RMNH.INS.1264941 ● 2♀; 20 km N Amman; 620 m a.s.l.; 23 Apr. 2006; K. Deneš leg.; OLML ● 3♀; S of At Tafila; 27–30 Mar. 2013; M. Snižek leg.; OLML ● 1♀; 10 km N Jerash; 20 Apr. 2002; ibid. ● 1♀; 15 km W Madaba; 760 m a.s.l.; 27 Apr. 2006; K. Deneš leg.; OLML ● 158♀,16♂; Petra [Wadi Musa]; 14 May 1995; ibid. ● 33♂; ibid.; TJWC ● 1♀; 10 km N Petra; 3 May 1996; Ma. Halada leg.; OLML ● 2♀; 15 km E of Petra; 26 Apr. 2008; K. Deneš leg.; OLML ● 4♀,1♂; N. Shuna env; 20–22 Apr. 1996; Ma. Halada leg.; OLML ● 3♂; N. Shuna env; 29–30 Apr. 1996; ibid. ● 10♀,1♂; S. Shuna; 17 Apr. 1996; ibid. ● 1♀; Wadi el Haidam [Al-Hidan]; 8 May 1995; K. Deneš leg.; OLML ● 1♀; Wadi Ramm [Rum]; 12 May 1995; ibid. – **LEBANON** ● 4♀; Al Montazah [Moutazah], nr. Mansourieh; 250 m a.s.l.; 30 Apr. 1996; C.G. Roche leg.; OUMNH ● 1♀; Baalbek distr., Qaa; 750 m a.s.l.; 13 May 2023; V. Soon leg.; TUZ 347151 ● 1♂; ibid.; TUZ 347143 ● 2♀; Kaouthariyet, El Saiyad, Sidon d.; 250 m a.s.l.; 8 May 2023; V. Soon leg.; TUZ 349271 ● 1♀; Tyre; 5 May 2023; V. Soon leg.; TUZ 347772 ● 1♀; Tyre, Melqart temple; 6 May 2023; V. Soon leg.; TUZ 349104 ● 2♀; ibid.; 8 May 2023; TUZ 342240 ● 4♂; ibid.; 10 May 2023; TUZ 346090 ● 1♀; Zebdin [Zebdine], 9 km E of Jbeil [Byblos]; 1000 m a.s.l.; 23 Apr. 1995; C.G. Roche leg.; OUMNH. – **MOROCCO** ● 1♀; Drâa-Tafilalet, Ouarzazate, P1505, 2 km S Amerzgane; 31.0248° N –7.2224° W; 1300 m a.s.l.; 13 Apr. 2022; T. Wood leg.; BOLD accession no. WPATW407-22; TJWC ● 1♀; Guelmim-Oued Noun, Guelmim, Fask, 2 km SE, N12; 28.9750° N –9.8098° E; 19 Apr. 2022; T. Wood leg.; BOLD accession no. WPATW404-22; TJWC. – **SPAIN** ● 1♀; Rivas-Vaciamadrid, Canal de Manzanares to Camino de Uclés; 40.3217° N –3.5633° W; 19 May 2021; T. Wood leg.; BOLD accession no.

WPATW186-21; TJWC ● 1♀; Toledo, Prazuela del Parador; 39.8464° N –4.0195° E; 13 May 2021; T. Wood leg.; BOLD accession no. WPATW133-21; TJWC. – **SYRIA** ● 2♀; Burg Marqab, 7 km SE Banyas; 16 Apr. 1992; K. Warncke leg.; OLML ● 1♂; 20 km SE Deir ez-Zur; 200 m a.s.l.; 21 Apr. 1992; ibid. ● 3♀; Maalula [Maaloula], 60 km NE Damaskus; 1400 m a.s.l.; 14 Apr. 1992; ibid. – **WEST BANK** ● 2♀; Almog, 10 km S Jericho; –350 m a.s.l.; 3 Feb. 1990; R. Kasher leg.; on *Erucaria rostrata*; SMNHTAU 353661, 353662 ● 1♂; Argaman, 4kmSE, Nehar Yarden [Jordan River]; 32°08'40" N 35°33'17" E; –350 m a.s.l.; 5 Apr. 2019; L. Friedman leg.; SMNHTAU 303057 ● 1♂; Avenat, Rt. 90; 31°41' N 35°26' E; 17 Mar. 2004; A. Freidberg leg.; SMNHTAU 354491 ● 1♀; Deir Hajla, wadi; 31°49' N 35°31' E; 16 Mar. 2004; I. Zonstein leg.; BOLD accession no. ANDIL336-22; SMNHTAU 348705 ● 3♀; Ein-Feshcha; 22 Feb. 1978; M. Kaplan leg.; SMNHTAU 353643, 354469, 354470 ● 1♀; EiN-Gedi; 24 Mar. 1958; I. Kugler leg.; SMNHTAU 353587 ● 1♂; 'Ein Kelt; 16 Feb. 1973; M. Tintpulver; SMNHTAU 354484 ● 3♀; Fza'el [Petza'el], 23 km SE Nablus; –300 m a.s.l.; 3 Feb. 1990; R. Kasher leg.; on *Sinapis alba*; SMNHTAU 353618 to 353620 ● 4♀; Jericho; 23 Feb. 1941; H. Bytinski-Salz leg.; SMNHTAU 353600 to 353603 ● 1♀; ibid.; 7 Feb. 1943; SMNHTAU 353604 ● 1♀; ibid.; 2 Feb. 194[?]; SMNHTAU ● 1♀; Jericho; 8 Mar. 1976; M. Kaplan leg.; SMNHTAU 353622 ● 1♂; ibid.; SMNHTAU 353464 ● 2♀; Jericho WQ; 18 Feb. 1971; H. Bytinski-Salz leg.; SMNHTAU ● 3♀,1♂; ibid.; 21 Apr. 1973; SMNHTAU ● 1♀; Jerus[alem]–Jericho Rd Km 18; 18 Feb. 1971; H. Bytinski-Salz leg.; SMNHTAU ● 3♀; Kalia; 13 Feb. 1975; M. Kaplan leg.; SMNHTAU 353638 to 353640 ● 2♀; ibid.; F. Kaplan leg.; SMNHTAU 353636, 353637 ● 3♀,1♂; Kallia; 26 Mar. 1970; H. Bytinski-Salz leg.; SMNHTAU ● 10♀; Kallia; 13 Feb. 1975; A. Freidberg leg.; SMNHTAU ● 1♀; Mehola, Rt.578; 32°21'48" N 35°30'49" E; –177 m a.s.l.; 27 Feb. 2020; L. Friedman leg.; SMNHTAU 332688 ● 1♀; Mizpé Shalém; 22 Apr. 2014; A. Gotlieb leg.; on *Erucaria rostrata*; SMNHTAU 184311 ● 1♀; Nabi Musa Road; 22 Feb. 2014; A. Gotlieb leg.; on *Sisymbrium irio*; SMNHTAU 184212 ● 2♂; ibid.; SMNHTAU 184210, 184268 ● 2♀; ibid.; 12 Apr. 2014; on *Sinapis arvensis*; SMNHTAU 184428, 184429 ● 1♀; ibid.; BOLD accession no. ANDIL171-22; SMNHTAU 184427 ● 1♀; Nahal Darga, Mashash Morabat; 26 Feb. 2015; T. Jumah leg.; SMNHTAU 218099 ● 1♀; Nahal Og NR, 0.5kmS Almog; 31.782° N 35.462° E; –310 m a.s.l.; 5 Apr. 2021; L. Friedman leg.; SMNHTAU 363376 ● 1♀; Nahal Og NR, N Nabi Musa military camp; 31.762° N 35.407° E; –30 m a.s.l.; 5 Apr. 2021; L. Friedman leg.; SMNHTAU 363249 ● 1♀; ibid.; BOLD accession no. ANDIL376-22; SMNHTAU 363248 ● 1♂; ibid.; BOLD accession no. ANDIL377-22; SMNHTAU 363250 ● 6♀; Nahal Qidron; 25 Mar. 1987; A. Shlagman leg.; SMNHTAU 353674 to 353679 ● 2♀; Peza'el; 32°2'57" N 35°26'78" E; –200 m a.s.l.; 18 Feb. 2020; L. Friedman leg.; SMNHTAU 332416, 332419 ● 1♀; Qalya; 31.75° N 35.462° E; 2 Mar. 2021; G. Pisanty leg.; on Brassicaceae; SMNHTAU 357532 ● 1♀; Qarne Shomeron; 18 Mar. 2016; L. Friedman leg.; SMNHTAU 238128 ● 1♂; Qedumim; 19 Feb. 2016; L. Friedman leg.; BOLD accession no. ANDIL423-25; SMNHTAU 234105 ● 1♀; Qedumim, Karme Qedem; 435 m a.s.l.; 2 Feb. 2018; L. Friedman leg.; SMNHTAU 284511 ● 1♀; W.[adi]Kelt; 9 Apr. 1973; D. Furth leg.; SMNHTAU 354468 ● 2♀; Wadi Ahmar, nr. Yarden; 32°01' N 35°30' E; 15 Mar. 2005; I. Zonstein leg.; SMNHTAU 353726, 353728 ● 1♀; Wadi Ahmar near Yarden; ibid.; L. Friedman leg.; SMNHTAU 353729 ● 2♂; ibid.; SMNHTAU 353499, 353500 ● 2♀; Wadi Faria; 8 Mar. 1973; A. Freidberg leg.; SMNHTAU ● 6♀; Zor Deir Sahaman, Yarden bank; 32°02'30" N 35°30' E; 15 Mar. 2005; L. Friedman leg.; SMNHTAU 353730 to 353735.

3.1.2.24. *Andrena* (*Micrandrena*) *stolida* Warncke, 1975

Figures 16E, 18D, J, 20Q

Andrena stolida Warncke, 1975a: 51, ♀♂ [central Turkey: OLML].

Distribution and habitat. Mediterranean shrublands in Turkey and the Levant* (Israel*, Jordan*, Lebanon*, Syria*).

Flight period. Late February to late May.

Flower records. None.

Material examined. HOLOTYPE: TURKEY ● ♀; Ankara; 21 May. 1972; K. Warncke leg.; OLML. – **PARATYPES: TURKEY** ● 1♀; ibid.; SMNHTAU ● 1♂; Şereflikoçhisar; 17 May. 1970; ibid. ● 1♀; Yeşilhisar; 23 May 1972; K. Warncke leg.; SMNHTAU. – **non-type material: ISRAEL** ● 2♂; 600 m E Alonim; 22 Feb. 2011; H. Ztohari leg.; TJWC ● 1♀; Har Tayyasim; 31°46.3' N 35°05.1' E; 740 m a.s.l.; 27 Mar. 2011; L. Friedman leg.; BOLD accession no. ANDIL511-25; SMNHTAU 90372 ● 12♂; Hasharon, Zikhron Ya'aqov, Ramas Hanadiv; 12 Mar. 1990; R. Leys leg.; RMNH ● 3♀,1♂; ibid.; 25 Mar. 1990 ● 2♂; R. Hanadiv; 4 Mar. 1990; R. Kasher leg.; SMNHTAU 353459, 353630 ● 1♀; Ramat HaNadiv; 32.54–6° N 34.94–6° E; 16 Mar. 2023; G. Pisanty leg.; SMNHTAU 425837 ● 4♂; ibid.; SMNHTAU 425825 to 425828. – **JORDAN** ● 2♀; Ajloun; 6–7 May 2012; M. Kafka leg.; OLML. – **LEBANON** ● 14♂; Beqaa, Beqaa valley, Mansourah, Kafraiya village; 33.6744° N 35.7380° E; 1000 m a.s.l.; 2 Apr. 2023; T. Wood leg.; TJWC ● 1♂; ibid.; BOLD accession no. WPATW1048-23 ● 1♂; Beqaa, Beqaa valley, Qob Elias, valley 500 m NW; 33.7989° N 35.8192° E; 900 m a.s.l.; 3 Apr. 2023; T. Wood leg.; TJWC ● 1♀; Keserwan, Yahchouch; 600 m a.s.l.; 15 May. 2023; V. Soon leg.; pan trap; TUZ 347857. – **SYRIA** ● 4♀; Jisr ash Shugur; 10–11 May 1996; Ma. Halada leg.; OLML ● 1♀,3♂; Latakia, Qaranjah; 750 m a.s.l.; 3 Apr. 1988; L. Blank leg.; OLML. – **TURKEY** ● 1♀; Antakia env; 30 Apr. 1994; K. Deneš leg.; OLML ● 3♀,61♂; Antakya; 28 Mar. 1999; M. Halada leg.; OLML ● 1♀,1♂; ibid.; TJWC ● 13♀; 20 km E Göreme; 9 May 1994; K. Deneš leg.; OLML ● 1♀; Karadut env., 50 km NE Adiyaman; 1 Jun. 2001; ibid. ● 2♀; 40 km E Midyat/Mardin; 900 m a.s.l.; 25 May 1983; K. Warncke leg.; TJWC.

3.1.2.25. *Andrena* (*Micrandrena*) *sulfurea* Wood, 2022

Figures 17A, 20G

Andrena sulfurea Wood, 2022: Pisanty et al. 2022b: 97–100, ♀♂ [Syria: OLML].

Distribution and habitat. Endemic to desert habitats in central Syria.

Flight period. Late March to late April.

Flower records. None.

Remarks. Pisanty et al. (2022b) mention the female's body length as 8–8.5 mm, but the correct range is 6.5–7.5 mm.

Material examined. HOLOTYPE: SYRIA ● ♂; Homs, As-Shuknah [As Sukhnah], 22 km E; 250 m a.s.l.; 24 Mar. 1988; L. Blank leg.; OLML. – **PARATYPES: SYRIA** ● 2♀,12♂; ibid. ● 2♂; ibid.; TJWC ● 19♀,8♂; 80 km E of Palmyra; 450 m a.s.l.; 22 Apr. 1992; K. Warncke leg.; OLML ● 2♀,1♂; ibid.; SMNHTAU ● 1♂; 110 km E of Palmyra; 350 m a.s.l.; 21–22 Apr. 1992; K. Warncke leg.; OLML.

3.1.2.26. *Andrena* (*Micrandrena*) *tiaretta* Warncke, 1974

Figure 21G

Andrena tiaretta Warncke, 1974b: 12, 38, ♀♂ [Algeria: OLML].
Andrena orientalis Kratochwil, 2015: 1412, 1418, ♀♂ [Israel: OLML]

Distribution and habitat. South Mediterranean. In the Levant, limited to sandy and hamra soils along Israel's coastal plain. Reports from Lebanon, Syria and Iran (Warncke 1974b; Grace 2010; Kratochwil 2015; Wood et al. 2020; Boustani et al. 2021) are refuted (see below).

Flight period. Late January to late April, in north Africa rarely until early June.

Flower records. Collected from Brassicaceae (*Sinapis*).

Remarks. The female of *Andrena tiaretta* is extremely similar to *A. spreta*, and the two species have been repeatedly confused (Warncke 1974b; Gusenleitner & Schwarz 2002; Kratochwil 2015). Although on average they differ in the strength of the scutal punctation, at the individual level this is masked by strong intraspecific variation, especially in *A. spreta*. Examination of male genitalia and barcoding of females throughout Israel strongly suggest that in the Levant, *A. tiaretta* is limited to the sandy soils of the Mediterranean coastal plain. Only a single male specimen lacking a head was found bearing labels from outside this area (10 Km East Jerusalem), which is most likely a labeling error, or an aberrant specimen of *A. yelkouan* Warncke. We therefore reassign all inland Levantine specimens of *A. tiaretta* to *A. spreta* (or more rarely, *A. cervina*), and remove *A. tiaretta* from the lists of Lebanese, Syrian and Iranian *Andrena* – countries from which no barcodes or males are available, with specified localities that are extremely unlikely given the distribution of verified specimens. As currently understood, *Andrena tiaretta* has a mostly southern Mediterranean distribution limited to light soil types which are typical of most of North Africa, as well as coastlines in Israel and the southern Iberian Peninsula. Several other bee species or species complexes which are widespread in North Africa likewise extend northeastwards into the Israeli coastal plain, including *Andrena decollata*, the *A. aegyptiaca* species group (Pisanty et al. 2023), and the *Lasioglossum virens*/*littorale* species group (Pauly et al. 2020).

Kratochwil (2015) treated Lybian and Levantine populations of *A. tiaretta* as distinct species, *A. cyrenaica* and *A. orientalis*, respectively. However, he limited his work to the material present in Warncke's collection, including at least two specimens which are most likely *A. spreta* (one female paratype from Syria and another female from Iran). Furthermore, the differences between his three species amount to minute colour variation in integument and hair, which is especially unreliable considering the age of the specimens, as well as the presence of a weak dorsal gonocoxite lobe in only two male specimens from a single location in Lybia. Without strong evidence to the contrary (e.g. molecular barcodes), we therefore follow Wood et al. (2020) in retaining the broad pan-Mediterranean concept of *A. tiaretta*.

Material examined. ISRAEL ● 1♀; Bat Jam [Yam]; 31 Jan. 1941; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; Bené Deror [Bnei Dror]; 7 Mar. 2012; O. Afik leg.; SMNHTAU 106405 ● 1♂; En Sarid; 2 Apr. 2014; I. Eliakim leg.; SMNHTAU 152530 ● 3♀; ibid.; 31 Mar. 2015; SMNHTAU 185841, 185844, 185849 ● 1♀; En Vered; 3 Feb. 2015; I. Eliakim leg.; BOLD accession no. ANDIL408-25; SMNHTAU 185656 ● 18♂; Gvar'am NR; 31.58° N 34.59° E; 1 Mar. 2023; G. Pisanty; sweep, on Brassicaceae; SMNHTAU 422726 to 422732, 422734 to 422744 ● 1♀; HaKefar HaYaroq, Zomet Gelilot [Glilot Junction]; 22 Apr. 2011; A. Freidberg leg.; SMNHTAU 93016 ● 1♂; Herzliyah; 22 Mar. 1942; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; ibid.; 17 Mar. 1945 ● 2♀; Herzliyya, hill; 32°11' N 34°49' E [more precisely 32.156° N 34.847° E]; 7 Mar. 2008; A. Freidberg leg.; SMNHTAU 354479, 354480 ● 1♂; Hof Dor–HaBonim N.R.; 32.630–44° N 34.922–8° E; 2 Mar. 2025; G. Pisanty leg.; SMNHTAU 464046 ● 2♂; ibid.; 32.638–43° N 34.922–8° E; L. Friedman leg.; SMNHTAU 464069, 464070 ● 1♀; Kefar 'Avoda; 13 Mar. 2012; O. Afik leg.; SMNHTAU 106273 ● 1♀; ibid.; 1 Apr. 2012; SMNHTAU 106534 ● 1♂; Mavqi'im; 31°37' N 34°34' E; 18 Feb. 2004; L. Friedman leg.; SMNHTAU 366433 ● 1♂; ibid.; BOLD accession no. ANDIL496-25; SMNHTAU 366432 ● 1♀; Mik - Jis [Mikveh Israel]; 26 Apr. 1940; on *Sinapis*; SMNHTAU ● 1♂; Nahal Alexander; 10 Apr. 2019; K. Levy leg.; SMNHTAU 185035 ● 1♂; ibid.; 29 Feb. 2020; SMNHTAU 337456 ● 1♀; Nes Ziyyona; 26 Jan. 2014; G. Pisanty leg.; SMNHTAU 152463 ● 7♀; ibid.; 31.928° N 34.78° E; 13 Mar. 2015; SMNHTAU 207052 to 207055, 207057 to 207059 ● 1♀; ibid.; BOLD accession no. ANDIL418-25; SMNHTAU 207056 ● 1♂; Netanya, Irus Ha'Argaman NR; 24 Feb. 2021; ITI Bee Course leg.; SMNHTAU 366435 ● 1♂; Pardes Hanna; 8 Apr. 1946; SMNHTAU ● 1♀; Petah-Tikva; 18 Feb. 1956; I. Kugler leg.; SMNHTAU 353588 ● 1♀; Ramla; 28 Mar. 1972; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; R.G n [?Ramat Gan]; 3 Feb. 1940; SMNHTAU ● 2♂; Sde Uziyahu; 31.753° N 34.667° E; 13 Mar. 2023; E.L.A.E. leg.; pan trap; SMNHTAU 462966, 462967 ● 3♂; Sederot; 27 Feb. 1974; A. Freidberg leg.; SMNHTAU ● 1♂; Tel Aviv; 4 Mar. 1970; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; ibid.; 17 Mar. 1970 ● 2♂; ibid.; 5 Mar. 1973 ● 1♂; ibid.; 10 Mar. 1972 ● 2♀; ibid.; 8 Mar. 1974 ● 2♀; Tel Aviv, Ramat Aviv; 32.130° N 24.802° E; 6 Mar. 2015; G. Pisanty leg.; SMNHTAU 206340, 206345 ● 1♀; ibid.; BOLD accession no. ANDIL415-25; SMNHTAU 206344 ● 3♂; ibid.; SMNHTAU 206295, 206303, 206325 ● 1♂; ibid.; BOLD accession no. ANDIL414-25; SMNHTAU 206331 ● 1♂; ibid.; 32.130° N 34.801° E; 1 Apr. 2017; SMNHTAU 270448 ● 2♀; ibid.; on Brassicaceae; SMNHTAU 270435, 270437 ● 3♂; ibid.; 270434, 270437, 270447 ● 1♂; Tel Aviv, Tel Barukh; 19 Mar. 1997; L. Friedman leg.; SMNHTAU 353504 ● 1♂; Tel Aviv, Tzapari, Park haYarqon; 10 m a.s.l.; 18

Mar. 2015; T. Novoselsky & A. Freidberg leg.; SMNHTAU 207449 ● 2♀,2♂; Tel Aviv BG; 4 Mar. 1970; H. Bytinski-Salz leg.; SMNHTAU ● 2♀,4♂; ibid.; 1 Mar. 1972 ● 2♀,4♂; ibid.; 10 Mar. 1972 ● 1♂; ibid.; 14 Mar. 1973 ● 1♀,2♂; ibid.; 20 Mar. 1973 ● 1♀; Tel Aviv N; 17 Feb. 1973; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; Tel Aviv University, Botanical Garden; 32°06'50" N 34°48'31" E; 2–5 Apr. 2012; SMNHTAU 121428 ● 3♀; ibid.; L. Friedman leg.; 121523, 121525, 121531 ● 1♂; ibid.; A. Golan leg.; SMNHTAU 121458 ● 1♂; Tel Aviv University, Botanical Garden; 22 Mar. 2016; L. Friedman leg.; SMNHTAU 238282 ● 1♀; Yavne; 4 Feb. 1976; A. Freidberg leg.; SMNHTAU 353645 ● 1♂; Zur Moshe; 16 Mar. 2015; I. Eliakim leg; SMNHTAU 185790 ● 1♂; ibid.; BOLD accession no. ANDIL409-25; SMNHTAU 185767. – **WEST BANK** ● 1♂; 10 Km East Jerusalem [likely erroneous]; 18 Mar. [19]70; H. Bytinski-Salz leg.; SMNHTAU.

3.1.2.27. *Andrena* (*Micrandrena*) *tkalcui* Gusenleitner & Schwarz, 2002

Figures 17C, H, L, 20F, W

Andrena testacea Warncke, 1975a (nec *Andrena gwynana* var. *testacea* Dalla Torre 1877): 56–57, ♀♂ [West Bank: ZSMC].

Andrena tkalcui Gusenleitner & Schwarz, 2002: 765, nom. nov. for *Andrena testacea* Warncke, 1975.

Distribution and habitat. Shrubland and semi-desert habitats in the northern Middle East, including all countries of the Levant (Israel, West Bank, Jordan, Lebanon*, Syria).

Flight period. Late January to late May.

Flower records. Collected from Apiaceae, Brassicaceae (*Hirschfeldia*, *Sinapis*) and Rosaceae (*Prunus*).

Material examined. HOLOTYPE: WEST BANK ● 1♀; Jericho; 20–28 Apr. 1927; Dr. Enslin leg.; ZSMC. – **PARATYPE: ISRAEL** ● 1♂; Tel el Kadi [Tel Dan]; 18 May [19??]; H. Bytinski-Salz leg.; SMNHTAU. – **non-type material: IRAN** ● 1♀; Yasouj, Doposhteh, Dashteroom; 2091 m a.s.l.; 31 Mar. 2021; E. Rostami leg.; BOLD accession no. WPATW1178-23; TJWC. – **ISRAEL** ● 5♀; 30 km NE Beer Sheva; 22 Apr. 2018; M. Halada leg.; OLML ● 1♂; Beit Govrin; 20 Apr. 2017; T. Roth leg.; BOLD accession no. ANDIL272-22; SMNHTAU 272840 ● 1♀,7♂; 2 - 15 km N Beit She'an; 24 Apr. 2018; M. Halada leg.; OLML ● 1♂; Ben Shemen Forest; 31.93° N 34.972° E; 18 Feb. 2017; G. Pisanty leg.; SMNHTAU 268575 ● 1♀; Bet Guvrin; 28 Mar. 2010; G. Pisanty leg.; pan trap; SMNHTAU 60108 ● 1♀; Bet Nir, 1.5km SSE; 31.6347° N 34.879° E; 17 Feb. 2023; G. Pisanty leg.; pan trap; SMNHTAU 420902 ● 6♀; Deganya A; 19 Mar. 1940; Y. Palmoni leg.; SMNHTAU 181503 to 181508 ● 1♀; "En Wered; 11 Apr. 2013; T. Shapira leg.; SMNHTAU 151935 ● 2♂; Gal'on; 4 Apr. 2018; T. Roth leg.; on *Hirschfeldia incana*; SMNHTAU 290467, 290468 ● 1♂; ibid.; on Apiaceae; SMNHTAU 290365 ● 2♂; Hamat Gader; 7 May 1997; A. Freidberg leg.; SMNHTAU 353492, 353495 ● 1♂; Har'el; 22 Apr. 1964; J. Kugler leg.; SMNHTAU ● 1♂; Jerusalem; 3 Feb. 1940; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; ibid.; 16 Feb. 1940; SMNHTAU ● 1♂; ibid.; [?] Feb. 1940; SMNHTAU 353470 ● 1♀; Jerusalem; 11 May 1952; J. Wahrman leg.; SMNHTAU ● 2♂; Jerusalem; 18 Mar. 1976; H. Teunissen leg.; RMNH RMNH.INS.1662981 ● 1♂; Jerusalem, Mt.Scopus; 22 Feb. 1946; SMNHTAU ● 2♂; Jerusalem, Mt.Scopus SG; 12 Feb. 1946; on *Prunus amygdalus*; SMNHTAU ● 1♀; Kfar Menachem; 2 Mar. 2008; U. Roll leg.; SMNHTAU 25033 ● 1♀; Kfar-Yerukham Reservoir; 21 Mar. 1971; Galil leg.; SMNHTAU 353592 ● 1♂; Lahav; 27 Feb. 1974; A. Freidberg leg.; SMNHTAU ● 1♀; Lakhish; 4 Feb. 2013; T. Shapira leg.; SMNHTAU 133079 ● 1♂; ibid.; SMNHTAU 133086 ● 1♀; Lakhish, 3km NE; 31.579° N 34.871° E; 4 Mar. 2016; G. Pisanty leg.; on *Sinapis*; SMNHTAU 235196 ● 2♂; Lehavim; 31.365° N 34.830° E; 28 Jan. 2015; G. Pisanty leg.; SMNHTAU 202314, 202315 ● 1♂; ibid.; BOLD accession no. ANDIL181-22; SMNHTAU 202318 ● 6♀; Ma'ale Gamla, Sea of Galilee; 4 Mar. 2016; J. Pražak leg.; JS ● 1♀; ibid.; TJWC ● 1♀; Malkiyya; 27 Apr. 2014; O. Winberger leg.; BOLD accession no. ANDIL169-22; SMNHTAU 184002 ● 1♀; ibid.; N. Atkin leg.; SMNHTAU 182991 ● 1♀; Mata; 8 Apr. 2024; A. Lofchick leg.; SMNHTAU 456738 ● 3♀; Menahamiya, 15 km SSW Tiberias; –150 m a.s.l.; 26 Apr. 2018; M. Halada leg.; OLML ● 1♀; Park Britanya; 15 Apr. 2010; T. Koznichki leg.; pan trap; SMNHTAU 59586 ● 2♀; Pura NR; 31°29'48" N 34°46'35" E; 200 m a.s.l.; 22 Feb. 2022; L. Friedman leg.; SMNHTAU 384832, 384834 ● 2♂; Ramot Naftali, 10 km S of Kiryat Shmona; 7 May 2019; M. Halada leg.; OLML ● 1♀; Sha'alvim; 7 Feb. 2010; G. Pisanty leg.; pan trap; SMNHTAU 31843 ● 1♀; Yerushalayim; 24 Feb. 2014; A. Gotlieb leg.; BOLD accession no. ANDIL170-22; SMNHTAU 184271 ● 1♀; ibid.; on *Prunus dulcis*; SMNHTAU 184234 ● 1♂; ibid.; SMNHTAU 184219 ● 1♀; תל ירוחם – ואדי [Tel Yeroham – Wadi]; 11 Apr. [19]62; Avigdor leg.; SMNHTAU 207225. – **JORDAN** ● 2♀; Ajlun env; 5 May 1995; K. Deneš leg.; OLML ● 1♀; Amman, Campus of the University of Jordan; 8 Mar. 1978; Ph. Pronk leg.; RMNH RMNH.INS.1264845 ● 9♀; 20 km N Amman; 620 m a.s.l.; 23 Apr. 2006; K. Deneš leg.; OLML ● 5♀,1♂; 20 km NW of Amman; 420 m a.s.l.; 5 May 2006; ibid. ● 1♀,13♂; Dana; 3 May 2012; M. Kafka leg.; OLML ● 14♂; Dayr Alla; 27 Apr. 1996; Ma. Halada leg.; TJWC ● 1♂; ibid.; OLML ● 1♀; S of Irbid; 13 Apr. 2009; M. Snižek leg.; OLML ● 1♂; Jarash env; 1 May 1996; Ma. Halada leg.; OLML ● 9♀; 15 km W Madaba; 760 m a.s.l.; 27 Apr. 2006; K. Deneš leg.; OLML ● 3♀; 20 km SW Madaba; May 2006; F. Kantner leg.; OLML ● 5♀,1♂; 20 km SW Madaba; 26 May 2007; Z. Kejval leg.; OLML ● 1♀; 20 km S of Petra; 1650 m a.s.l.; 29 May 2007; ibid. ● 33♂; 30 km N Tafila [At-Tafilah]; 2 May 1996; Ma. Halada leg.; OLML ● 1♂; ibid.; TJWC ● 1♀; Pella env. [Tabaqat Fahl]; –80 m a.s.l.; 29 Apr. 2006; K. Deneš leg.; OLML ● 2♂; Petra; 11 Mar. 1976; H. Teunissen leg.; RMNH RMNH.INS.1662983 ● 83♀,8♂; Petra [Wadi Musa]; 14 May 1995; K. Deneš leg.; OLML ● 4♀; ibid.; TJWC ● 4♂; N. Shuna env; 20–22 Apr. 1996; Ma. Halada leg.; OLML ● 58♂; ibid.; 29–30 Apr. 1996 ● 3♂; ibid.; TJWC ● 2♀; Wadi el Haidam; 8 May 1995; K. Deneš leg.; OLML. – **LEBANON** ● 1♀,1♂; Baalbek distr., Qaa; 750 m a.s.l.; 13 May 2023; V. Soon leg.; TUZ 347153. – **SYRIA** ● 9♀; Anata, 50 km SE Suwayda; 20–21 May 1996; Mi. Halada leg.; OLML ● 29♀,17♂; Bosra; 3 May 1995; K. Deneš leg.; OLML ● 12♂; 40 km NE Damascus; 22 May 1996; Ma. Halada leg.; OLML ● 1♀; 30 km N Dara, Nawa; 18 May 1996; ibid. ● 1♀; Palmyra; 1 May 1995; K. Deneš leg.; OLML ● 1♀; Rankos, 40 km N Damascus; 23 May 1996; Ma. Halada leg.; OLML ● 1♀; Salkhad env; 6 May 1996; Mi. Halada leg.; OLML ● 1♂; 10 km SE Suwayda, Kafr; 19 May 1996; ibid. ● 7♀,6♂; 30 km S Suwayda, Dibbin; 15–17 May 1996; Ma. Halada leg.; OLML. – **WEST BANK** ● 3♂; Argaman; 17 Apr. 1988; M. Kraus leg.; OLML ● 2♀; Har 'Eval, Yehoshua binNun Althar; 780–856 m a.s.l.; 25 Apr. 2016; L. Friedman leg.; SMNHTAU 243667, 243670 ● 1♂; MA'ALE EFRAIM; 31 Jan. 1987; E. Shney-Dor leg.; SMNHTAU 353458 ● 1♀; Ma'on, 0–1kmS; 750–800 m a.s.l.; 14 Apr. 2015; A. Freidberg leg.; SMNHTAU 211859 ● 1♀; Mehola, Rt.578; 32°21'48" N 35°30'49" E; –177 m a.s.l.;

27 Feb. 2020; L. Friedman leg.; BOLD accession no. ANDIL318-22; SMNHTAU 332692 ● 1♀; NofePerat, Kefar Adummim, north-facing slope of Nahal Perat; 27 Feb. 2007; L. Friedman leg.; SMNHTAU 366409 ● 1♀; Peza'el; 32°2'57" N 35°26'7" E; –200 m a.s.l.; 18 Feb. 2020; SMNHTAU L. Friedman leg.; SMNHTAU 332420 ● 1♀; ibid.; G. Pisanty leg.; BOLD accession no. ANDIL476-25; SMNHTAU 332860 ● 1♀; Rotem-Maskiyot NR; 32.328° N 35.512° E; 23 Mar. 2023; G. Pisanty leg.; SMNHTAU 426581 ● 1♀; Sartava NR, Wadi el-Ahmar, Upper, 2kmE Gittit; 0–60 m a.s.l.; 13 Feb. 2019; L. Friedman leg.; SMNHTAU 301394 ● 1♀; 'Ubeidīya; 4 May 2014; I. Arar leg.; on *Sinapis arvensis*; SMNHTAU 184534 ● 1♀; W.Faria; 1 Mar. 1973; M. Kaplan leg.; SMNHTAU 353627; ● 2♂; ibid.; SMNHTAU 353572, 353573 ● 5♀,5♂; W.Faria; 3 Mar. 1973; D. Furth leg.; SMNHTAU ● 1♀; Wadi Ahmar, nr. Yarden; 32°01' N 35°30' E; 15 Mar. 2005; I. Zonstein leg.; BOLD accession no. ANDIL344-22; SMNHTAU 353727 ● 2♀,5♂; Wadi Faria; 8 Mar. 1973; A. Freidberg leg.; SMNHTAU ● 3♂; Wadi Malha Wetland NR; 5 Apr. 2021; L. Friedman leg.; SMNHTAU 362729 to 362731 ● 1♂; Za'tara; 7 Apr. 2014; I. Arar leg.; on *Sinapis arvensis*; SMNHTAU 184475.

3.1.2.28. *Andrena* (*Micrandrena*) *tringa* Warncke, 1973

Figures 15A, D, 21H

Andrena tringa Warncke, 1973: 30, ♀♂ [Turkey: OLML].

Distribution and habitat. Eastern Europe, Turkey and the Levant (northern Israel and Lebanon; Pisanty et al. 2018; Wood et al. 2020). In Europe associated with steppe habitats (IUCN 2024); in the Levant, limited to mesic habitats mostly at high elevations.

Flight period. Early April to Late June.

Flower preferences. Presumably oligolectic on Brassicaceae (*Alyssum*, *Barbarea*, *Brassica*, *Crambe*, *Draba*, *Erucastrum*, *Isatis*, *Lepidium*, *Peltaria*, *Raphanus*, *Sinapis*, *Sisymbrium*). Also visits Apiaceae, Asteraceae, Crassulaceae, Liliaceae and Rosaceae (IUCN 2024 and new records).

Material examined. ISRAEL ● 1♀; Har Hermon; 1400 m a.s.l.; 18 Apr. 2012; L. Friedman leg.; SMNHTAU 124821 ● 2♀; ibid.; 33°18' N 35°46' E; 1700 m a.s.l.; 6 Jun. 2013; SMNHTAU 142440, 142446 ● 2♀; ibid.; 33.30° N 35.77° E; 1600–1800 m a.s.l.; 17 Jun. 2020; G. Pisanty leg.; SMNHTAU 336030, 336031 ● 1♀; ibid.; 33.302° N 35.773° E; 1820 m a.s.l.; SMNHTAU 336104 ● 11♀; ibid.; 33.2994° N 35.7675° E; 1645 m a.s.l.; 16 Apr. 2021; SMNHTAU 361198, 361203, 361205, 361206, 361208, 361209, 361215, 361420, 361423, 361425, 361429 ● 16♂; ibid.; SMNHTAU 361225, 361249, 361255, 361262, 361266, 361289, 361308, 361325, 361336, 361337, 361340, 361410, 361461 to 361464 ● 1♀; ibid.; BOLD accession no. ANDIL368-22; SMNHTAU 361419 ● 1♂; ibid.; BOLD accession no. ANDIL367-22; SMNHTAU 361411 ● 1♀; ibid.; stylopized; SMNHTAU 361201 ● 7♂; ibid.; 33.299° N 35.769° E; 1650 m a.s.l.; 7 Apr. 2021; sweep; SMNHTAU 360394, 360397, 360420 to 360424 ● 12♂; ibid.; 33.2991° N 35.7667° E; 1644 m a.s.l.; 16 Apr. 2022; pan trap; SMNHTAU 390373, 390378, 390393, 390394, 390466, 390475, 390477, 390480, 390484, 390492, 390498, 390512 ● 4♀; ibid.; pan trap, stylopized; SMNHTAU 390408, 390414, 390418, 390476 ● 1♀; ibid.; 33.2992° N 35.7668° E; 1642 m a.s.l.; 19 May 2022; pan trap; SMNHTAU 392628 ● 23♂; ibid.; 33.2992° N 35.7670° E; 1644 m a.s.l.; 16 Apr. 2022; SMNHTAU 390006 to 390008, 390014, 390015, 390140, 390142, 390155, 390157, 390161, 390219, 390220, 390223 to 390227, 390229, 390231, 390233, 390234, 390236, 390237 ● 3♀; ibid.; pan trap, stylopized; SMNHTAU 390178, 390240, 390241 ● 2♂; ibid.; 33.2996° N 35.7677° E; 1642 m a.s.l.; pan trap; SMNHTAU 390591, 390594 ● 1♀; ibid.; 19 May 2022; SMNHTAU 392734 ● 1♀; ibid.; 33.300° N 35.767° E; 1600 m a.s.l.; 11 May 2020; SMNHTAU 334870 ● 6♂; ibid.; 1610 m a.s.l.; 7 Apr. 2021; SMNHTAU 360762, 360765, 360766, 360795, 360803, 360811 ● 1♀; ibid.; 33.3015° N 35.7735° E; 1790 m a.s.l.; 18 Jun. 2020; SMNHTAU 335999 ● 3♂; ibid.; 33.2992° N 35.767° E; 1644 m a.s.l.; 16 Apr. 2022; on *Gagea*; SMNHTAU 389984, 389985, 389987 ● 2♀; Har Hermon, Busheri turn; 1770 m a.s.l.; 1 Jun. 2016; L. Friedman leg.; SMNHTAU 247884, 247886 ● 1♀; Hermon; 1300 m a.s.l.; 27 Apr. 1978; D. Furth leg.; SMNHTAU ● 1♀; ibid.; 1700 m a.s.l.; 27 Jun. 1973; SMNHTAU 354464 ● 4♀; Hermon; 33.291–4° N 35.747–51° E; 1440–1550 m a.s.l.; 29 Apr. 2022; G. Pisanty leg.; sweep; SMNHTAU 391578 to 391581 ● 1♀; Hermon, Biq'at Man; 33.292° N 35.751° E; 1450 m a.s.l.; 29 Apr. 2022; G. Pisanty leg.; on *Peltaria angustifolia*; SMNHTAU 391532 ● 1♀; Hermon, Har Shezif; 33.286° N 35.7524° E; 1447 m a.s.l.; 16 Apr. 2022; G. Pisanty leg.; pan trap; SMNHTAU 390716 ● 2♀; Hermon Nature Reserve, Busheri curve, Plot F4; 33.301° N 35.773° E; 1791 m a.s.l.; 18 Jun. 2019; A. Dorchin, A. Sviri & Y. Mersman leg.; SMNHTAU 309206, 309279 ● 1♂; ibid.; SMNHTAU 309175 ● 1♂; Hermon Nature Reserve, Har 'Ar'ar, Plot E6; 33.308° N 35.752° E; 1639 m a.s.l.; 18 Jun. 2019; A. Dorchin, A. Sviri & Y. Mersman leg.; SMNHTAU 309230 ● 1♀; Hermon NR, 300mN lower parking lot, Plot F1; 33.294° N 35.760° E; 1508 m a.s.l.; 28 May 2019; L. Friedman leg.; SMNHTAU 308133 ● 1♂; Mt. Hermon; 1500 m a.s.l.; 23 Apr. 1973; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; Mt. Meron; 1000 m a.s.l.; 16 Jun. 1971; ibid. ● 1♀; 20 km NE Qiryat Shemona, Hermon Cableway; 16 May 1996; C. Schmid-Egger leg.; CSE. – **LEBANON** ● 1♂; Al Montazah [Moutazah], nr. Mansourieh; 250 m a.s.l.; 30 Apr. 1996; C.G. Roche leg.; OUMNH ● 1♂; Beqaa, Rachaiya, 2.5 km SE, Mount Hermon nature reserve; 33.4818° N 35.8583° E; 1300 m a.s.l.; 8 Apr. 2023; T. Wood leg.; TJWC.

3.1.3. *Andrena oedicnema* group

3.1.3.1. *Andrena* (*Micrandrena*) *cedricola* Wood, 2020

Figures 14F, J, 19C, P

Andrena cedricola Wood, 2020: Wood et al. 2020: 10–12, ♀♂ [Lebanon: RBINS].

Distribution and habitat. High altitudes in the Levant (northern Israel, Lebanon, Syria) and Turkey, above 900 m. (Pisanty et al. 2022b).

Flight period. Mid-March to late May. The specimen from the Syrian part of the Golan Heights was incorrectly reported as being collected on 31 March 2001 in Wood et al. 2020, the correct collecting date is 11 March 2001.

Flower records. Collected from Brassicaceae (*Brassica*, *Peltaria*). A single analyzed pollen load contained 100% Brassicaceae pollen (Wood et al. 2020).

Material examined. ISRAEL ● 1♀; Har Hermon; 1600 m a.s.l.; 23 May 1998; A. Freidberg leg.; SMNHTAU 354883 ● 1♀; ibid.; 18 May 2009; L. Friedman leg.; SMNHTAU 34774 ● 3♂; Har Hermon; 33.2994° N 35.7675° E; 1645 m a.s.l.; 16 Apr. 2021; G. Pisanty leg.; SMNHTAU 361233, 361305, 361311 ● 1♂; ibid.; BOLD accession no. ANDIL494-25; SMNHTAU 361404 ● 1♂; ibid.; 33.300° N 35.767° E; 1620 m a.s.l.; 11 May 2020; SMNHTAU 334833 ● 1♂; ibid.; 33.292° N 35.7595° E; 1480 m a.s.l.; 7 Apr. 2021; pan trap; SMNHTAU 360842 ● 1♂; ibid.; 33.2992° N 35.7670° E; 1644 m a.s.l.; 16 Apr. 2022; SMNHTAU 390192 ● 7♀; Har Hermon, Nahal Guveta; 33.285° N 35.763° E; 1410 m a.s.l.; 11 May 2020; G. Pisanty leg.; on *Peltaria angustifolia*; SMNHTAU 334947, 334948, 334950, 334953 to 334956 ● 3♂; ibid.; SMNHTAU 334944 to 334946 ● 1♀; ibid.; BOLD accession no. ANDIL102-22; SMNHTAU 334951 ● 3♂; Har Meron; 1100 m a.s.l.; 17 Apr. 2000; A. Freidberg leg.; SMNHTAU 354890 to 354892 ● 1♀; Hermon; 33.298–9° N 35.767–70° E; 1640–1675 m a.s.l.; 19 May 2022; G. Pisanty leg.; on Brassicaceae; SMNHTAU 392777 ● 2♀; Hermon, Biq'at Man; 33.292° N 35.751° E; 1450 m a.s.l.; 29 Apr. 2022; G. Pisanty leg.; on *Peltaria angustifolia*; SMNHTAU 391528, 391529 ● 2♀; Hermon NR, 300mN lower parking lot, Plot F1; 33.294° N 35.760° E; 1508 m a.s.l.; 28 May 2019; L. Friedman leg.; SMNHTAU 308123, 308128 ● 1♀; Merom-Golan, N Golan Height; 1000 m a.s.l.; 23 Apr. 1997; R. Kasher leg.; SMNHTAU 354886 ● 1♀; Mt.Meron; 900 m a.s.l.; 13 Apr. 1988; I. Yarom leg.; SMNHTAU 354889 ● 1♂; ibid.; SMNHTAU 354887 ● 1♀; Neve-Ativ, 16km NE Qiryat-Shmona; 1000 m a.s.l.; 18 Apr. 1990; R. Kasher leg.; SMNHTAU 354882 ● 2♀; Qala'at Nemrod [Nimrod Castle]; 6 May 1987; A. Shlagman leg.; SMNHTAU 354884, 354885 ● 1♂; ibid.; SMNHTAU 367669 ● 1♀; 20 km NE Qiryat Shemona Hermon Cableway; 16 May 1996; C. Schmid-Egger leg.; CSE. – **LEBANON** ● 2♂; Beqaa, Rachaiya, 5 km S, Mount Hermon nature reserve; 33.4586° N 35.8395° E; 1500 m a.s.l.; 8 Apr. 2023; T. Wood leg.; TJWC ● 1♀,2♂; Mount Lebanon, Hazerta; 1400 m a.s.l.; 6 May 1996; C.G. Roche leg.; OUMNH. – **SYRIA** ● 1♂; Faouar; 11 Mar. 2001; J. Plass leg.; OLML.

3.1.3.2. *Andrena* (*Micrandrena*) *oedicnema* Warncke, 1975

Figures 14E, I, P, 19B, O

Andrena oedicnema Warncke, 1975a: 55–56, ♀ [Central Turkey: OLML].
Andrena (*Micrandrena*) *oedicnema* Warncke: Gusenleitner & Schwarz 2002: 550–551 (first description of ♂).

Distribution and habitat. Mediterranean shrublands in Greece and the northern Middle East, including all countries of the Levant (Wood et al. 2024b).

Flight period. Mid-February to late April.

Flower records. Collected from Apiaceae (*Ferula*) and Rosaceae (*Pyrus*).

Material examined. IRAN ● 1♂; Fars province, Yasuj, Sarb-e Taveh; 2030 m a.s.l.; 4 May 2016; M. Kafka leg.; BOLD accession no. ANDGP021-25; OLML. – **ISRAEL** ● 1♀; Avi'el N; 35 m a.s.l.; 29 Mar. 2017; A. Dorchin leg.; OLML ● 5♀; Beit Guvrin; 27 Mar. 1976; A. Freidberg leg.; SMNHTAU ● 1♀; Beit Nir; 13 Apr. 2009; G. Pisanty leg.; on *Ferula communis*; SMNHTAU 27683 ● 1♀; Bet Guvrin; 10 Mar. 2004; A. Freidberg leg.; SMNHTAU ● 2♀; Bet Oren; 23 Mar. 1973; A. Freidberg leg.; "*Andrena oedicnema* ssp. *avjanica* War." paratype label; SMNHTAU ● 1♀; Carmel, Har Telalim; 32.757° N 35.0245° E; 440 m a.s.l.; 16 Mar. 2025; G. Pisanty leg.; SMNHTAU 464573 ● 1♂; ibid.; SMNHTAU 464576 ● 1♀; Dan; 20 Mar. 1941; H. Bytinski-Salz leg.; SMNHTAU ● 1♀,3♂; Ein Avazim, S Qiryat-Shmona; 6 Mar. 1995; R. Kasher leg.; SMNHTAU ● 1♀; ELIAD; 4 Apr. [19]81; I. Yarom leg.; SMNHTAU 367641 ● 3♀; Elon; 8 Mar. 1970; H. Bytinski-Salz leg.; "*Andrena oedicnema* ssp. *avjanica* War." paratype label; SMNHTAU ● 1♀; Eshtaol, Kasalon Valley; 300 m a.s.l.; 1 May 1975; K.M. Guichard leg.; NHMUK ● 1♂; Galilea, 4 km E of Har Meron; 9 Apr. 1988; R. Leys leg.; RMNH ZMA.INS.5104159 ● 32♂; Galilea, 10 km E of Nahariyya; 9 Apr. 1988; R. Leys leg.; RMNH ● 1♀; Ga'ton; 17 Mar. 1973; M. Kaplan leg.; SMNHTAU ● 1♂; Gal'ed; 32°24' N 35°05' E; 5 Mar. 2005; A. Freidberg leg.; SMNHTAU ● 1♂; Golan, Ein Kania jun. [Ein Qiniyye Junction]; 18 Mar. 1973; M. Kaplan leg.; SMNHTAU ● 1♀; Golan, Qusbiya; 15 Mar./Apr.[?] 1982; I. Yarom leg.; SMNHTAU ● 1♀; Hagalil, 5 km N Tiberias, Capernaum; 24 Mar. 1990; R. Leys leg.; RMNH ZMA.INS.5104372 ● 1♂; Hagoshrim; 28 Feb. 1977; A. Freidberg leg.; SMNHTAU ● 1♀,1♂; Haifa; 26 Feb. 1977; A. Freidberg leg.; SMNHTAU ● 6♂; Haifa Carmel, 17 Feb. 1973; A. Freidberg leg.; "*Andrena oedicnema* ssp. *avjanica* War." paratype label; SMNHTAU ● 4♀; ibid.; 22 Apr. 1973 ● 1♂; Hanita; 27 Mar. 1976; D. Gerling leg.; SMNHTAU ● 1♂; Har Ahino'am; 32.5035° N 35.413° E; 438 m a.s.l.; 3 Mar. 2025; G. Pisanty leg.; pan trap; SMNHTAU 463898 ● 2♀; Har Avital; 5 Mar. 1995; R. Kasher leg.; SMNHTAU ● 1♀; Har HaRuah; 31.82° N 35.08–10° E; 6 Mar. 2017; G. Pisanty leg.; SMNHTAU 268815 ● 4♂; ibid.; SMNHTAU 268813, 268814, 268816, 268817 ● 1♂; Har Hermon; 33.2855° N 35.763° E; 1420 m a.s.l.; 7 Apr. 2021; G. Pisanty leg.; pan trap; SMNHTAU 360688 ● 3♂; Har Karmila; 31.78–79° N 35.02–04° E; 5 Mar. 2017; G. Pisanty leg.; SMNHTAU 268879 to 268881 ● 1♂; Har Meron; 1100 m a.s.l.; 17 Apr. 2000; A. Freidberg leg.; SMNHTAU ● 1♀; Hare Gilboa', Har Ahino'am; 32.502° N 35.414° E; 450 m a.s.l.; 11 Apr. 2011; A. Freidberg leg.; SMNHTAU 91645 ● 1♂; ibid.; 23 Feb. 2012; L. Friedman leg.; SMNHTAU 118572 ● 1♀; Hare Gilboa', Har Avinadav; 32°28' N 35°26' E; 22 Mar. 2012; L. Friedman leg.; SMNHTAU 138529 ● 4♂; ibid.; 420 m a.s.l.; 23 Feb. 2012; SMNHTAU 118467, 118468, 118474, 118495 ● 1♀; Hare Gilboa', HarLapidim; 32°31' N 35°23.6' E; 400 m a.s.l.; 11 Apr. 2011; A. Freidberg leg.; SMNHTAU 91595 ● 1♀; HareGilboa', Merav, Har-Avinadav; 32°27.7' N 35°26' E; 420 m a.s.l.; 11 Apr. 2011; A. Freidberg leg.; SMNHTAU 91742 ● 1♂; ibid.; 32°28' N 35°26' E; 20 Mar. 2012; L. Friedman leg.; SMNHTAU 120701 ● 1♀; HareGilboa', Nurit; 32°32' N 35°21' E; 120 m a.s.l.; 11 Apr. 2011; L. Friedman leg.; SMNHTAU 92161 ● 1♀; ibid.; BOLD accession no. ANDIL397-22; SMNHTAU 92159 ● 1♀; Hartuv; 31 Mar. 1973; M. Kaplan leg.; SMNHTAU ● 1♀; Hasharon, Zikhron Ya'aqov, Ramas Hanadiv; 25 Mar. 1990; R. Leys leg.; RMNH ZMA.INS.5102468 ● 6♀; Horbat Kefar Lakhish; 31.575° N 34.853° E; 5 Mar. 2021; G. Pisanty leg.; pan trap; SMNHTAU 358904 to 358908, 358913 ● 2♂; ibid.; SMNHTAU 358902, 358903 ● 8♀; ibid.; 15 Mar. 2021; SMNHTAU 358982 to 358989 ● 2♂; ibid.; SMNHTAU 358969, 358970 ● 9♀; ibid.; 31.575° N 34.8532° E; 5 Mar. 2021; sweep; SMNHTAU 358840 to 358848 ● 9♂; ibid.; SMNHTAU 358819, 358833 to 358839, 358857 ● 15♀; Horbat Sheqofa; 31.5775° N 34.871° E; 252 m a.s.l.; 15 Mar. 2021; G. Pisanty leg.; pan trap; SMNHTAU 359171 to 359185 ● 1♀; Jerusalem env; 20 Mar.

1993; D. Ábel leg.; OLML ● 1♀; Karme Yosef; 22 Mar. 2018; T. Roth leg.; on Apiaceae; SMNHTAU 290762 ● 5♀; Kefar Giladi S; 21 Mar. 1997; R. Kasher leg.; SMNHTAU ● 4♀,3♂; ibid.; 25 Mar. 1997 ● 3♀; ibid.; 27 Mar. 1997 ● 6♀,1♂; ibid.; 30 Mar. 1997 ● 2♀,5♂; ibid.; 1 Apr. 1997 ● 1♀; ibid.; 2 Apr. 1997 ● 2♂; ibid.; 12 Apr. 1997 ● 1♀; ibid.; 19 Apr. 1997 ● 1♂; Kefar Uriyya-Tarum; 31.78–80° N 34.95–97° E; 25 Feb. 2017; G. Pisanty leg.; SMNHTAU 268512 ● 10♀; Kokhav Ya'ir, Ya'ar Sappir; 32°13.9' N 34°59.5' E; 160 m a.s.l.; 16 Feb. 2010; L. Friedman leg.; SMNHTAU 47482, 47483, 47485, 47486, 47491, 47496, 47498, 47501 to 47503 ● 1♀; ibid.; A. Freidberg leg.; SMNHTAU 47385 ● 2♂; Lahav; 27 Feb. 1974; A. Freidberg leg.; "*Andrena oedicnema* ssp. *avjanica* War." paratype label; SMNHTAU ● 1♀; Lakhish, 3km NE; 31.578° N 34.870° E; 19 Feb. 2016; G. Pisanty leg.; SMNHTAU 234229 ● 1♂; Majdal Shams; 1000 m a.s.l.; 18 Apr. 2012; L. Friedman leg.; SMNHTAU 124843 ● 2♀; Meron JNC., Upper Galilee; 20 Mar. 1995; on *Pyrus syriaca*; SMNHTAU 367638, 367639 ● 1♂; ibid.; SMNHTAU 367637 ● 1♀; ibid.; on *Pyrus* var.; SMNHTAU 367640 ● 11♀,10♂; Monfort; 10 Mar. 1981; F. Kaplan leg.; SMNHTAU ● 2♀; ibid.; T. Furman leg. ● 2♀; ibid.; A. Freidberg leg. ● 2♀; Monfort; 33°02.635' N 35°13.271' E; 4 Mar. 2010; A. Freidberg leg.; SMNHTAU 47006, 47007 ● 1♂; ibid.; SMNHTAU 47054 ● 1♀; Montfort; 17 Mar. 1983; A. Freidberg leg.; SMNHTAU ● 1♀; ibid.; 10 Apr. 1993 ● 1♂; ibid.; 4 Mar. 1993; SMNHTAU 367642 ● 1♀; Montfort, Nahal Keziv; 28 Feb. 2018; G. Pisanty leg.; SMNHTAU 286248 ● 12♂; ibid.; SMNHTAU 286244, 286246, 286250, 286252, 286253, 286318, 286319, 286321, 286324, 286328, 286330, 286332 ● 4♂; Montfort, Nahal Keziv; 33°02.6' N 35°13.2' E; 166 m a.s.l.; 10 Mar. 2015; A. Freidberg leg.; SMNHTAU 206771, 206772, 206829, 206831 ● 6♀; Mt. Carmel, Hay-Bar 1km S Univ.; 300 m a.s.l.; 15 Mar. 1990; R. Kasher leg.; SMNHTAU ● 1♂; Mt. Meron; 900 m a.s.l.; 11 Apr. 1999; S.P.M. Roberts leg.; SPMR ● 3♀; Mt.Carmel, Hay-Bar 1km S University; 25 Mar. 1990; R. Kasher leg.; SMNHTAU ● 1♀,2♂; Mt.Meron; 900 m a.s.l.; 13 Apr. 1988; I. Yarom leg.; SMNHTAU ● 1♂; N Golan Height; 30 Mar. 1997; R. Kasher leg.; SMNHTAU ● 1♂; N.[ahal] Ammud; 21 Mar. [19]82; Nussbaum leg.; SMNHTAU ● 1♀; N.[ahal] Kziv; 5 Mar. 1978; M. Kaplan leg.; SMNHTAU ● 2♀; Nahal 'Iyyon, haTanur; 33°16.1' N 35°34.5' E; 430 m a.s.l.; 15 Mar. 2011; A. Freidberg leg.; SMNHTAU 109701, 109702 ● 1♀; Nahal 'Iyyon, HaTanur Waterfall; ibid.; SMNHTAU 89735 ● 3♂; ibid.; SMNHTAU 89738, 89748, 89756 ● 1♂; ibid.; E. Morgulis leg.; SMNHTAU 90689 ● 1♂; Nahal 'Iyyon Reserve, HaTanur; 22 Feb. 2002; A. Freidberg leg.; SMNHTAU ● 1♂; Nahal Bezeq; 32.410° N 35.441° E; 2 m a.s.l.; 15 Mar. 2021; A. Dorchin leg.; BOLD accession no. ANDIL356-22; SMNHTAU 358703 ● 19♀,6♂; Nahal Dishon; 1 Apr. 1991; R. Kasher leg.; SMNHTAU ● 3♂; Nahal Keziv; 33°02.7' N 35°13.6' E; 5 Mar. 2008; A. Freidberg leg.; SMNHTAU ● 10♀; Nahal Keziv; 33.0465° N 35.226° E; 26 Feb. 2021; G. Pisanty leg.; SMNHTAU 357586 to 357590, 357592 to 357596 ● 1♀; ibid.; BOLD accession no. ANDIL353-22; SMNHTAU 357591 ● 33♂; ibid.; SMNHTAU 357598 to 357623, 357625 to 357631 ● 1♂; Nahal Keziv, Montfort; 33°02' N 35°14' E; 400 m a.s.l.; 24 Feb. 2011; A. Freidberg leg.; SMNHTAU 90982 ● 1♂; Nahal Keziv, Montfort; 33°02.6' N 35°13.3' E; 4 Mar. 2010; L. Friedman leg.; SMNHTAU 48848 ● 2♂; Nahal Maresha; 31.577° N 34.858° E; 220 m a.s.l.; 15 Mar. 2021; G. Pisanty leg.; pan trap; SMNHTAU 359378, 359379 ● 12♀; ibid.; sweep; SMNHTAU 359263 to 359273, 359325 ● 4♂; ibid.; SMNHTAU 359259 to 359262 ● 1♀; Nahal Oren; 32°43' N 34°58' E; 9 Mar. 2012; A. Freidberg leg.; SMNHTAU 119878 ● 1♂; ibid.; SMNHTAU 119877 ● 1♀,6♂; Nahal Sa'ar, N Golan Height; 30 Mar. 1997; R. Kasher leg.; SMNHTAU ● 1♀; ibid.; 23 Apr. 1997 ● 1♂; Nahal Zilzal; 31.7° N 35.03° E; 25 Feb. 2019; G. Pisanty leg.; SMNHTAU 321747 ● 1♂; Netiv Ha'Lamed He; 20 Feb. 1973; M. Kaplan leg.; SMNHTAU ● 1♂; Panyas [Banias]; 33°14.9' N 35°41.7' E; 15 Mar. 2011; A. Freidberg leg.; SMNHTAU 89566 ● 17♀,2♂; Quesbyie; 14 Mar. 1975; F. Kaplan leg.; SMNHTAU ● 1♀; Qusbiye; 14 Mar. 1975; M. Kaplan leg.; SMNHTAU ● 1♀; ibid.; 15 Apr. 1982; F. Kaplan leg. ● 1♀; 10 km S. of Qiryat Shemona, Nahal Qedesh; 15 Apr. 1999; S.P.M. Roberts leg.; SPMR ● 4♀; Revadim; 27 Mar. 2018; T. Roth leg.; on *Ferula communis*; SMNHTAU 290927, 290930, 290937, 290943 ● 1♀; Rosh Ha'Ayin, East, Hirbet Kseyfe; 32.091° N 34.999° E; 140 m a.s.l.; 7 Mar. 2022; L. Friedman leg.; SMNHTAU 386900 ● 1♀; Sheich-Ali, 20km E Qiryat-Gat; 17 Mar. 1990; R. Kasher leg.; SMNHTAU ● 1♂; Shoham; 14 Mar. 2000; A.Lavy leg.; SMNHTAU ● 1♂; Shoham; 2 Mar. 2004; L. Friedman leg.; SMNHTAU ● 1♂; Shoham; 17 Mar. 2010; A. Freidberg leg.; SMNHTAU 47633 ● 1♀; Shoham; 32°00' N 34°57' E; 23 Mar. 2007; M. Orlova leg.; SMNHTAU ● 1♀; Shoham Forest Park; 32.00° N 34.963° E; 28 Mar. 2022; G. Pisanty leg.; sweeping; SMNHTAU 388589 ● 10♀,2♂; Snir - Hermon Field Study Center; 27 Mar. 1997; R. Kasher leg.; SMNHTAU ● 2♀,2♂; Snir, Hermon Field Study Center; 21 Mar. 1997; R. Kasher leg.; SMNHTAU ● 2♀; ibid.; 3 Apr. 1997 ● 3♀,4♂; Tanur; 15 Mar. 1975; F. Kaplan leg.; SMNHTAU ● 1♂; Tanur; 6 Mar. 1985; A. Freidberg leg.; SMNHTAU ● 1♀,4♂; Tivon; 6 Feb. [19]75; H. Bytinski-Salz leg.; SMNHTAU ● 1♂; Tivon; 4 Mar. 1975; F. Kaplan leg.; SMNHTAU ● 4♀; ibid.; 2 Apr. 1975 ● 1♀; Tivon; 20 Mar. [19??]; H. Bytinski-Salz leg.; "*Andrena oedicnema* ssp. *avjanica* War." paratype label; SMNHTAU ● 1♂; W. Habiz, Upper Galilee; 3 Apr. 1972; Gerling leg.; SMNHTAU ● 1♀; Ya'ar Yehudiyya NR, Rd. 87, Plot C2; 32.930° N 35.689° E; 125 m a.s.l.; 23 Apr. 2019; A. Dorchin, T. Roth & O. Halbershtat leg.; SMNHTAU 306053 ● 1♂; Yir'on; 17 Apr. 2000; A. Freidberg leg.; SMNHTAU 420166 ● 2♀; Zur Natan 500 m NE; 32.245° N 35.020° E; 29 Mar. 2020; G. Pisanty leg.; SMNHTAU 333815, 333817 ● 1♀; נחל אורן [Nahal Oren]; 12 Mar. [19]81; SMNHTAU. – **JORDAN** ● 1♀; Irbid [Gov.], Saham vill[age]; 19 Apr. 2003; I. Pljushtch leg.; OLML ● 1♀; ibid.; TJWC. – **LEBANON** ● 3♀; Beqaa, Beqaa valley, Qaraoun, 3.5 km W of Madjal Balhis; 33.5377° N 35.7038° E; 900 m a.s.l.; 4 Apr. 2023; T. Wood leg.; TJWC ● 2♂; Beqaa, Beqaa valley, Qob Elias, valley 500 m NW; 33.7989° N 35.8192° E; 900 m a.s.l.; 3 Apr. 2023; ibid. ● 2♀; Beqaa, Beqaa valley, Mansourah, Aammiq wetland preserve; 33.7321° N 35.7853° E; 850 m a.s.l.; ibid. ● 4♂; Beqaa, Beqaa valley, Mansourah, Kafraiya village; 33.6744° N 35.738° E; 1000 m a.s.l.; 2 Apr. 2023; ibid. – **SYRIA** ● 1♀; occ. An [Al-] Nasrah env; 8–13 Apr. 2005; J. Saki leg.; OLML ● 1♂; Latakia, Saladinburg; 900 m a.s.l.; 4 Apr. 1988; L. Blank leg.; TJWC ● 2♂; Stausee [Dam], 10 km SW Homs; 500 m a.s.l.; 15 Apr. 1992; K. Warncke leg.; OLML ● 1♂; Tartus, St. Georg-Kloster; 250 m a.s.l.; 3 Apr. 1988; L. Blank leg.; TJWC. – **WEST BANK** ● 1♀; Mishor Adomim; 29 Mar. 1993; R. Kasher leg.; SMNHTAU ● 1♀; Nahal Qana, Ein-el-Juze; 11 Mar. 2016; L. Friedman leg.; SMNHTAU 235913 ● 6♀,1♂; Nahal Teqoa'; 31°38' N 35°14' E; 650 m a.s.l.; 31 Mar. 2009; A. Freidberg leg.; SMNHTAU ● 9♀; ibid.; M. Guershon leg. ● 4♀; Qalqilya; 4 Apr. 1981; A. Freidberg leg.; SMNHTAU ● 4♂; Qedumim; 19 Feb. 2016; L. Friedman leg.; SMNHTAU 234115 to 234118 ● 1♂; Qedumim, Zenirim Park; 20 Feb. 2014; L. Friedman leg.; SMNHTAU 173856 ● 1♂; Qida, 1kmSE, Gid'on Rd, Bor Gal Yosef/Bir Muhsin; 660 m a.s.l.; 5 Mar. 2020; L. Friedman leg.; SMNHTAU 332824 ● 1♂; Sartava NR, Wadi el-Ahmar, Upper, 2kmE Gittit; 0–60 m a.s.l.; 13 Feb. 2019; L. Friedman leg.; SMNHTAU 301398 ● 1♂; Sartava NR, Wadi Jeruzaliya; –70–+300 m a.s.l.; 14 Feb. 2019; L. Friedman leg.; SMNHTAU 301534.

3.1.4. Species not assigned to groups

3.1.4.1. *Andrena* (*Micrandrena*) *dividicincta* Pisanty, 2022

Figures 14D, O, 19N

Andrena dividicincta Pisanty, 2022: Pisanty et al. 2022b: 48–50, ♀♂ [Israel: SMNHTAU].

Distribution and habitat. Endemic to Mediterranean shrublands in the Levant (northern Israel, likely also Lebanon and Syria).

Flight period. Late February to mid-April.

Flower preferences. Polylectic, favouring flowering trees and shrubs such as Sapindaceae (*Acer*), Rosaceae (*Prunus*, *Pyrus*) and Rhamnaceae (Pisanty et al. 2022b).

Material examined. HOLOTYPE: ISRAEL ● 1♀; Montfort, Nahal Keziv [Montfort Castle, Nahal Kziv]; [33.04–05° N 35.22–23° E]; 28 Feb. 2018; G. Pisanty leg.; SMNHTAU 286301. – **PARATYPES: ISRAEL** ● 1♀; Har Hermon; 33.2992° N 35.7670° E; 1644 m a.s.l.; 16 Apr. 2022; G. Pisanty leg.; pan trap; SMNHTAU 390128 ● 10♀; ibid.; 33.2993° N 35.7678° E; 1650 m a.s.l.; on *Acer monspessulanum*; SMNHTAU 389829, 389831, 389834 to 389837, 389839, 389840, 389842, 389844 ● 1♀; ibid.; 33.2993° N 35.7679° E; 1649 m a.s.l.; 7 Apr. 2021; SMNHTAU 360308 ● 67♀; ibid.; 16 Apr. 2021; SMNHTAU 361544 to 361549, 361551 to 361564, 361566 to 361568, 361571 to 361574, 361576 to 361578, 361580, 361582 to 361584, 361586, 361587, 361589 to 361591, 361594 to 361597, 361599 to 361603, 361605 to 361609, 361611 to 361614, 361616, 361617, 361619 to 361622, 361624 to 361626, 361629 ● 2♂; ibid.; SMNHTAU 361489, 361497 ● 1♂; Har Meron; 800 m a.s.l.; 5 Mar. 2011; A. Freidberg leg.; BOLD accession no. ANDIL018-22; SMNHTAU 89140 ● 11♀; Hermon; 33.2992° N 35.7668° E; 1642 m a.s.l.; 16 Apr. 2022; G. Pisanty leg.; on Rosaceae; SMNHTAU 389948 to 389958 ● 7♀; ibid.; 33.2993° N 35.7670° E; 1641 m a.s.l.; on *Prunus dulcis*; SMNHTAU 389929 to 389935 ● 9♀; Meron JNC., Upper Galilee; 20 Mar. 1995; on *Pyrus syriaca*; SMNHTAU 367625 to 367633 ● 1♀; Monfort; 10 Mar. 1981; F. Kaplan leg.; SMNHTAU 348525 ● 1♀; Montfort; 2 Mar. 1987; A. Freidberg leg.; SMNHTAU 348526 ● 1♀; ibid.; A. Shlagman leg.; SMNHTAU 348527 ● 2♀; Montfort; 4 Mar. 1993; A. Freidberg leg.; SMNHTAU 348528, 348529 ● 1♀; ibid.; 5 Mar. 2008; BOLD accession no. ANDIL108-22; SMNHTAU 348531 ● 3♀; Montfort, Nahal Keziv; 28 Feb. 2018; G. Pisanty leg.; SMNHTAU 286240, 286273, 286274 ● 1♀; Nahal Keziv; 33°02.7’ N 35°13.6’ E; 5 Mar. 2008; A. Freidberg leg.; SMNHTAU 348530 ● 1♀; Nahal Keziv; 33.0465° N 35.226° E; 26 Feb. 2021; G. Pisanty leg.; SMNHTAU 357679 ● 1♂; Nahal Keziv, Montfort; 33.046° N 35.227° E; 200 m a.s.l.; 28 Feb. 2018; G. Pisanty leg.; SMNHTAU 336223 ● 1♀; ibid.; 33°02’N 35°14’ E; 400 m a.s.l.; 24 Feb. 2011; A. Freidberg leg.; SMNHTAU 90953 ● 1♀; Sasa; 20 Apr. 2015; O. Winberger leg.; SMNHTAU 184802. – **non-type material: ISRAEL** ● 1♂; Har Hermon; 33.2855° N 35.763° E; 1420 m a.s.l.; 7 Apr. 2021; G. Pisanty leg.; pan trap; SMNHTAU 360687 ● 1♂; ibid.; 33.300° N 35.767° E; 1610 m a.s.l.; SMNHTAU 360519 ● 2♀; ibid.; 33.299° N 35.769° E; 1650 m a.s.l.; sweep; SMNHTAU 360374, 360375.

3.1.4.2. *Andrena* (*Micrandrena*) *extenuata* Wood & Monfared, 2022

Figures 14L, 20E

Andrena extenuata Wood & Monfared, 2022: 21–25, ♀♂ [Iran: OLML].

Distribution and habitat. High elevations above 1400 m in Syria and Iran.

Flight period. Late February to late April.

Flower records. Collected from flowering trees of the families Rosaceae (*Prunus*, *Pyrus*) and Sapindaceae (*Acer*) (Wood and Monfared 2022).

Material examined. PARATYPES: SYRIA ● 1♀,14♂; Bludan [Bloudan], 57 km NW of Damascus; 2000 m a.s.l.; 24 Apr. 1992; K. Warncke leg.; OLML ● 9♀; Burg Baniyas/Mt. Hermon; 1500 m a.s.l.; 13 Apr. 1992; ibid. ● 1♀; Maalula [Maaloula], 60 km NE of Damascus; 1400 m a.s.l.; 14 Apr. 1992; ibid.

3.1.4.3. *Andrena* (*Micrandrena*) *pandosa* Warncke, 1968

Figures 14B, K, 19D, F

Andrena pandosa Warncke, 1968b: 72, ♀♂ [Algeria: OLML].
Andrena pandosa ssp. *excelsa* Warncke, 1974b: 14, 41, ♀♂ [Libya: OLML].
Andrena pandosa ssp. *graciosa* Warncke, 1993: 762, ♀♂ [Canary Islands: OLML].

Distribution and habitat. South Mediterranean. In the Levant, occurring in semi-arid to desert habitats in Israel, the West Bank and Jordan (Wood 2023b).

Flight period. Mid-February to early May.

Flower preferences. Narrowly oligolectic on *Reseda* (Resedaceae) (Wood 2023b). Also collected on Cistaceae and Malvaceae.

Material examined. ISRAEL ● 1♀; Beersheba; 1 Apr. 19[??]; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; ibid.; 15 Apr. 1970; “*Andrena pandosa* ssp. *antigua* War.” paratype label ● 1♀; En Geddi; 2 Mar. [19]71; ibid. ● 3♀; Jer[usalem?]; 2 May [19]40; “*Andrena pandosa* ssp. *antigua* War.” paratype label; SMNHTAU ● 1♂; Jerusalem; 27 Mar. 1941; H. Bytinski-Salz leg.; SMNHTAU ● 1♀; ibid.; 1 Apr. 1941 ● 2♀,1♂; ibid.; 7 Apr. 1947 ● 1♂; ibid.; 7 Mar. [19]40; “*Andrena pandosa* ssp. *antigua* War.” paratype label ● 3♂; Jerusalem; 19 Apr. 1953; J. Wahrman leg.; cave; SMNHTAU ● 1♂; ibid.; 19 Apr. 1945; “*Andrena pandosa* ssp. *antigua* War.” paratype label ● 1♀; Jerusalem, Mt. Scopus; 2 May 1940; “*Andrena pandosa* ssp. *antigua* War.” paratype label; SMNHTAU ● 1♀,7♂; ibid.; 19 Apr. 1945 ● 1♂; on *Malva sylvestris* ● 1♀; Ma’agar Yeroham, NW, Nahal Revivim; 460 m a.s.l.; 5 Apr. 2017; L. Friedman leg; SMNHTAU 270759 ● 1♀; Mishor Rotem; 15 Mar. [19]66; M. Weichselfish leg.; SMNHTAU ● 1♂; ibid.; 7 Mar. [19]65; on *Helianthemum stipulatum*; SMNHTAU 367690● 1♀; Ramon; 10 Mar. 1974; D.

Furth leg.; SMNHTAU 367689 ● 1♂; Tel 'Eton; 31.492° N 34.925° E; 3 Apr. 2022; G. Pisanty leg.; sweeping; SMNHTAU 388466. – **JORDAN** ● 1♂; S of Irbid; 13 Apr. 2009; M. Snižek leg.; TJWC ● 1♀; 10 km N, NE of Jarash [Jerash]; 20 Apr. 2002; ibid. ● 1♀; 15 km W Jerash, Dibbin; 2 May 2006; K. Deneš leg.; TJWC ● 5♀; 15 km E of Petra; 26 Apr. 2008; K. Deneš leg.; OLML ● 2♀; ibid.; TJWC. – **WEST BANK** ● 1♂; Avenat, Nahal Mazin, Rt. 90; 31°40'49" N 35°26'26" E; –375 m a.s.l.; 18 Feb. 2020; G. Pisanty leg.; BOLD accession no. ANDIL321-22; SMNHTAU 332871 ● 1♂; 'Enot Zuqim; 31°43' N 35°27' E; –400 m a.s.l.; 9 Feb. 2012; A. Freidberg leg.; SMNHTAU 117880 ● 2♀,1♂; Har-Gilo; 14 Apr. 1991; R. Kasher leg.; 10min sweeping; SMNHTAU ● 5♀,11♂; ibid.; 17 Apr. 1991 ● 1♂; Har Gilo, 5 km SW Jerusalem; 29 Mar. [19]88; C. O'Toole leg.; swept from *Anthemis-Trigonella-Trifolium* patch; SMNHTAU 207217 ● 2♀,17♂; Har-Gilo, 5km SW Jerusalem; 850 m a.s.l.; 11 Apr. 1990; R. Kasher leg.; SMNHTAU ● 4♀,2♂; ibid.; 21 Apr. 1990 ● 1♀,2♂; ibid.; 25 Apr. 1990 ● 2♀; ibid.; 27 Apr. 1990 ● 1♀; ibid.; 29 Apr. 1990 ● 1♀; ibid.; 7 May 1990 ● 1♀; ibid.; 8 May 1990 ● 1♀; Har Gilo, 5 km SW of Jerusalem; 850 m a.s.l.; 12 May 1991; C. O'Toole leg.; At *Reseda lutea*; SMNHTAU ● 1♀; Jericho WQ [Wadi Qelt]; 6 Apr. [19]71; H. Bytinski-Salz leg.; "*Andrena pandosa* ssp. *antigua* War." paratype label; SMNHTAU ● 3♀,23♂; Judea, Har Gilo; 19 Apr. 1988; R. Leys leg.; RMNH ZMA.INS.5104047 ● 1♂; Nahal Qidron, Avenat, Rt. 90; 2 Mar. 2010; L. Friedman leg.; SMNHTAU 52576 ● 1♀; Qalya; 31.75° N 35.462° E; 2 Mar. 2021; G. Pisanty leg.; BOLD accession no. ANDIL351-22; SMNHTAU 357553.

3.1.4.4. *Andrena* (*Micrandrena*) *proxima* (Kirby, 1802)

Figures 14C, H, M, 19A, M

Melitta proxima Kirby, 1802 (nec *Andrena proxima* Smith 1847): 146–147, ♀ [England: NHMUK].
Melitta digitalis Kirby, 1802: 159–160, ♀ [England: NHMUK].
Andrena aspericollis Pérez, 1895: 37, ♀♂ [Algeria: MNHN].

Distribution and habitat. Broadly across the Western Palaearctic, but excluding the most Atlantic parts, mostly in mesic habitats (McLaughlin et al. 2022). In the Levant*, limited to mountains in Lebanon*.

Flight period. In Europe: one generation, mid-April to late June.

Flower preferences. Broadly oligolectic on Apiaceae. Also visits Asteraceae, Brassicaceae, Campanulaceae and Euphorbiaceae (Westrich 1989; IUCN 2024).

Material examined. LEBANON ● 2♀; Mount Lebanon Governorate, Kesrouane, Jabal Moussa Biosphere Res.; 1400 m a.s.l.; 14 May 2023; V. Soon leg.; TUZ 341642 ● 1♂; Mount Lebanon Governorate, Kesrouane, Jabal Moussa Biosphere Res., Mchati; 1100 m a.s.l.; 15 May 2023; V. Soon leg.; TUZ 343915.

3.1.4.5. *Andrena* (*Micrandrena*) *yelkouan* Warncke, 1975

Figures 13B, 14A, G, N, 20D

Andrena yelkouan Warncke, 1975a: 97–98, ♀♂ (♂ stylopized) [SE Turkey: OLML].
Andrena yelkouan Warncke: Gusenleitner & Schwarz 2002: 838–839 (first description of non-stylopized ♂).

Distribution and habitat. Northern Middle East. Records from Central Asia are refuted – these originate from a misinterpretation by Osytschnjuk et al. (2008), who describe the male as having a yellow clypeus. In the Levant, present in Mediterranean shrubland, semi-desert and desert habitats in Israel, the West Bank, Jordan and Syria (Wood & Monfared 2022).

Flight period. Mid-February to mid-May.

Flower records. Collected from Brassicaceae and Fabaceae (*Trifolium*).

Material examined. PARATYPES: WEST BANK ● 1♀; Jericho; 25 Mar. 1941; H. Bytinski-Salz; head missing; SMNHTAU ● 2♀; Jericho; 7 Apr. 1970; H. Bytinski-Salz; SMNHTAU ● 1♀; JerichoWQ; 18 Feb. 1971; H. Bytinski-Salz; head missing; SMNHTAU ● 1♀; OldJerichoRd; 5 Apr. 1947; ibid. – **non-type material: ISRAEL** ● 1♀; Giv'at Oz; 10 Apr. 1988; I. Yarom leg.; SMNHTAU 348543 ● 1♀; Har Harif, Rt. 10, N junction; 30°32' N 34°33' E; 11 Apr. 2002; L. Friedman leg.; SMNHTAU ● 1♂; Har Meron Reserve, Camping under Kefar Meron; 32°58' N 35°26' E; 600 m a.s.l.; 25 Apr. 2002; L. Friedman leg.; SMNHTAU 353520 ● 3♀; Har Ramon; 30.503° N 34.636° E; 1030 m a.s.l.; 9 Apr. 2024; L. Friedman leg.; SMNHTAU 449906, 449908, 449914 ● 1♂; Hare Gilboa', Har Ahino'am; 32.502° N 35.414° E; 450 m a.s.l.; 20 Mar. 2012; L. Friedman leg.; SMNHTAU 120855 ● 1♂; Kokhav HaYarden; 25–27 Mar. 2001; L. Friedman leg.; Vinegar pitfalls; SMNHTAU 207212 ● 1♀; Ma'agar Yeroham; 7 Mar. 2007; A. Freidberg leg.; SMNHTAU 348545 ● 2♀; Moradot HaGolan NR, 960m SE Gonen; 33.111° N 35.651° E; 190 m a.s.l.; 7 Apr. 2019; A. Dorchin, A. Sviri & O. Halbershtat leg.; SMNHTAU 308878, 308879 ● 1♂; ibid.; SMNHTAU 308877 ● 1♂; Mt. Carmel, Etzbah; 9 Apr. 1999; S.P.M. Roberts leg.; SPMR ● 1♂; Nahal Bezeq; 32.410° N 35.441° E; 2 m a.s.l.; 15 Mar. 2021; A. Dorchin leg.; SMNHTAU 358704 ● 14♀; Nahal Boqer; 30.906–19° N 34.762–74° E; 10 Mar. 2023; G. Pisanty leg.; SMNHTAU 423940 to 423948, 423950 to 423954 ● 1♂; Nahal Dishon; 1 Apr. 1991; R. Kasher leg.; SMNHTAU 353511 ● 1♀; Nahal Kelah; 32.744° N 35.023° E; 10 Apr. 2017; G. Pisanty leg.; on Brassicaceae; SMNHTAU 270483 ● 1♀; Nahal Loz; 30.492° N 34.631° E; 13 Apr. 2020; G. Pisanty leg.; BOLD accession no. ANDIL325-22; SMNHTAU 334094 ● 1♀; NahalMe'arot; 8 Apr. 1988; I. Yarom leg.; SMNHTAU 348544 ● 4♀; Park Britannia; 20 Apr. 2015; T. Chaprazaro leg.; SMNHTAU 185251, 185254, 185263, 185265 ● 1♀; ibid.; BOLD accession no. ANDPH028-21; SMNHTAU 185249 ● 1♀; Park Britanya; 15 Apr. 2011; T. Koznichki leg.; on *Trifolium purpureum*; SMNHTAU 270479 ● 1♀; Ras Zuweira, Negev-E; 19 Mar. 1946; SMNHTAU ● 2♀; Rekhes HaSullam; 33.091° N 35.112° E; 80 m a.s.l.; 18 Mar. 2025; G. Pisanty leg.; SMNHTAU 465062, 465063 ● 1♂; Ya'ar Nehosha; 22 Mar. 2016; T. Chaprazaro leg.; SMNHTAU 251443 ● 1♂; Yerushalayim; 8 Mar. 2015; T. Jumah leg.; BOLD accession no. ANDIL209-22; SMNHTAU 217996 ● 1♂; Zomet Haela; 4 Apr. 1999; O. Greif leg.; SMNHTAU 367665. – **JORDAN** ● 2♀; Al Karak [Kerak] env; 6 Apr. 2013; M. Snižek leg.; OLML ● 8♀; Irbid, Saham vill; 19 Apr. 2003; I. Pljushtch leg.; OLML ● 2♀; ibid.; TJWC ● 2♀; ibid.; 25 Apr. 2003; OLML ● 1♂; Ma'an, Wadi Rum; 900 m a.s.l.; 17 Mar.

1988; L. Blank leg.; TJWC ● 1♀; 15 km W Madaba; 760 m a.s.l.; 27 Apr. 2006; K. Deneš leg.; OLML ● 1♀; 15 km E of Petra; 26 Apr. 2008; ibid. – **SYRIA** ● 1♀; Aleppo, Simeons-Kloster; 500 m a.s.l.; 19 Apr. 1988; L. Blank leg.; TJWC ● 1♀; Apamea; 29 Apr. 1995; K. Deneš leg.; OLML ● 5♀; Bosra; 3 May 1995; ibid. ● 1♀; Euphrat, Dura Europos; 10 Apr. 2001; J. Plass leg.; OLML ● 1♀; Maalula [Maaloula]; 17 May 1995; K. Deneš leg.; OLML ● 4♀; 30 km W Palmyra; 580 m a.s.l.; 23 Apr. 1992; K. Warncke leg.; OLML ● 1♂; Stausee, 10 km SW Homs; 500 m a.s.l.; 15 Apr. 1992; ibid. – **WEST BANK** ● 1♂; Biq'at Hureqanya, Nahal Qumeran, Ma'ale Qumeran; 31°44'56" N 35°23'21" E; 120 m a.s.l.; 14 Mar. 2016; D. Furth leg.; SMNHTAU 405290 ● 1♂; Biq'at Hureqanya, Ras Mu'akif; 0–111 m a.s.l.; 15 Mar. 2016; L. Friedman leg.; SMNHTAU 237790 ● 1♀; Herodyon; 31°40' N 35°14' E; 31 Mar. 2009; M. Guershon leg.; SMNHTAU 367558 ● 1♂; Nahal Teqoa', Ma'ale Rehav'am; 31°39' N 35°15' E; 460 m a.s.l.; 31 Mar. 2009; L. Friedman leg.; SMNHTAU 353497 ● 1♂; ibid.; A. Freidberg leg.; SMNHTAU 348546 ● 1♀; Rotem-Maskiyot NR; 32.328° N 35.512° E; 23 Mar. 2023; G. Pisanty leg.; SMNHTAU 426531 ● 1♀; Rotem-Maskiyyot NR, Maskiyyot 1kmN; 32.326° N 35.509° E; –60 m a.s.l.; 23 Mar. 2023; L. Friedman leg.; SMNHTAU 433455 ● 1♂; Sartava NR, Wadi el-Ahmar, 2kmE Gittit; –80–+60 m a.s.l.; 13 Feb. 2019; A. Dorchin leg.; SMNHTAU 300394 ● 2♀; Sartava NR, Wadi el-Ahmar, Upper, 2kmE Gittit; 0–60 m a.s.l.; 13 Feb. 2019; L. Friedman leg.; SMNHTAU 301392, 301442 ● 4♀; Sartava NR, Wadi Jeruzaliya; –70–+300 m a.s.l.; 14 Feb. 2019; A. Dorchin leg.; SMNHTAU 300454, 300477, 300484, 300485 ● 6♂; ibid.; SMNHTAU 300465 to 300468, 300470, 300478 ● 1♂; 'Ubeidīya; 7 Mar. 2015; T. Jumah leg.; SMNHTAU 217975 ● 2♀; Za'atara; 6 Mar. 2015; T. Jumah leg.; SMNHTAU 217957, 217959 ● 1♂; ודי פארה [Wadi Fara, a.k.a. Nahal Tirza]; 16 Mar. 1985; SMNHTAU 367664.

3.1.5. Keys to the *Andrena* (*Micrandrena*) species of the Levant and Cyprus

Notes for using the keys:

1. Some species are extremely challenging to separate, due to presence of minute interspecific differences together with strong intraspecific variation. In these cases, access to confidently determined reference material is essential, and distribution and relative abundance of both sexes should be used to inform identifications. Often, 100% confidence in identification is possible only with DNA barcoding. The following couplets are especially challenging: female key – 35, 37, 38, 41–42; male key – 32–33, 38.

2. Pay close attention to the terminology of tergal areas. Terga, tergal discs and tergal marginal zones are distinct terms, and often there are structural differences between basal versus apical parts of the tergal disc itself, not referring to the tergal marginal zone.

3. Male genital capsules are illustrated for all 41 species whose male sex is known (all species except *Andrena herodesi*). When using the male key, always consult the shape of the genitalia (even when not specifically indicated in the couplet) to make sure your identification is correct.

4. Some diagnostic characters become less reliable in aged or worn-out specimens. This especially concerns integumental colour, hair colour, and hair density. In such cases, if possible, species inference should be based more on sculpturing rather than colour and pubescence.

The following abbreviations are used throughout the keys: **F** – flagellomere, **T** – metasomal terga.

Females

1 Propodeal triangle completely finely reticulated, without any rugosity, at most with few mediobasal wrinkles (Fig. 13A). Clypeus flat or almost so, often with longitudinal striations (Fig. 13E–I). Lower ⅔ of facial fovea usually very narrow, almost linear (Fig. 13D). Scutum and tergal discs fully shagreened and matt, punctation hardly discernible (Fig. 13J–P) (Levant only, mostly in dry habitats) ..... **2** ***A. longibarbis* group**

1' Propodeal triangle weakly to strongly rugose or rugose-areolate, at least basally at junction with metanotum (Fig. 13B, C). Clypeus flat to distinctly domed or protuberant, never with longitudinal striations. Facial foveae usually broader. Scutum and terga with variable sculpture (Figs 14–18) (Levant and Cyprus, in all habitats) **8**

2 **(1).** Clypeus very smooth and shiny at least in apical half (Fig. 13E, F). Body length 6–8 mm **3**

2' Clypeus with longitudinal striations reaching almost to its apex (Fig. 13G–I). Body length 7–8 mm..... **6**

3 **(2).** Scutellum very shiny, superficially shagreened to smooth, strongly contrasting with shagreened and matt scutum (Fig. 13J). F4–10 orange anteriorly. Terga with apical hair bands broad, occupying the entire marginal areas and distinctly extending onto disc of subsequent tergum (Fig. 13K). Body length about 6 mm (southern Israel and Jordan) ..... ***A. govinda* Warncke**

3' Scutellum matt and distinctly shagreened, similar to scutum. Other traits variable. Body length 6–8 mm **4**

4 **(3).** Clypeus weakly arched. F4–10 orange. Tergal marginal zones strongly orange basally, clearly demarcated from neighbouring disc. Tergal hair bands broad (Fig. 13L). Body length 6–7 mm (southern Israel and Jordan) .... ***A. mariana* Warncke s.s.**

4' Clypeus flat. F4–10 dark brown to reddish-brown anteriorly. Tergal marginal zones usually more reddish-brown basally, more weakly contrasting with neighbouring disc. Tergal apical hair bands relatively narrow, limited to apical half of marginal zone, those on T2–3 interrupted, on T4 continuous (Fig. 13M). Body length 7–8 mm **5**

5 **(4).** Basal ¼–½ of clypeus with longitudinal striations. Labral process subquadrate (Fig. 13E). Nervulus interstitial. Tergal apical hair band 3 relatively broadly interrupted (southern Israel and Jordan) ..... ***A. leptura* Warncke stat. nov.**

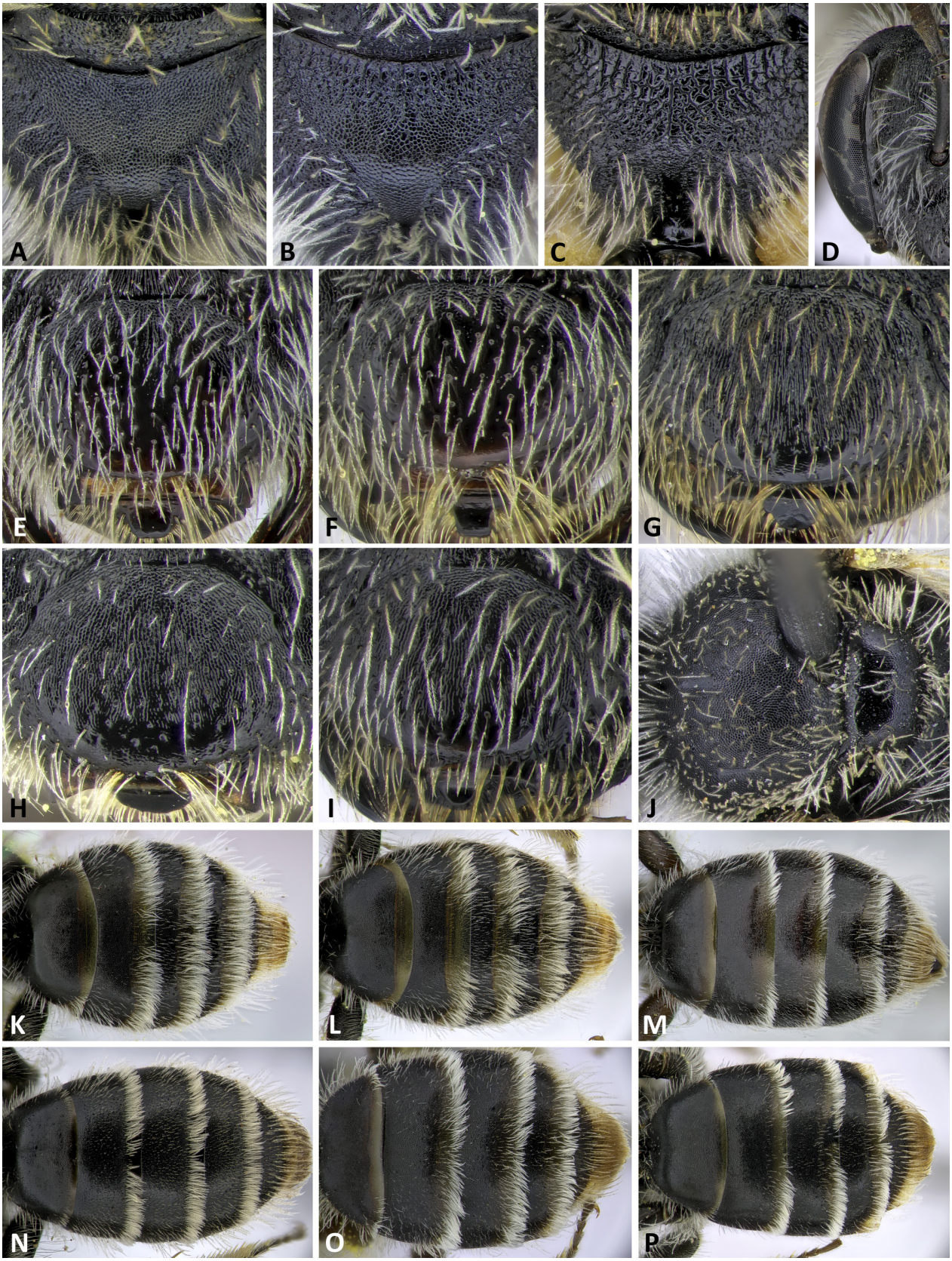

Figure 13. *Andrena* (*Micrandrena*) females, propodeal triangles (**A**–**C**), facial foveae (**D**), clypei (**E**–**I**), scuta and scutella (**J**) and metasomae (**K**–**P**). **A**, **I**, **P** *A. longibarbis*; **B** *A. yelkouan*; **C** *A. alfkenelloides cardalia*; **D**, **E**, **M** *A. leptura*; **F** *A. kugleri*; **G**, **N** *A. decollata*; **H**, **O** *A. herodesi*; **J**, **K** *A. govinda*; **L** *A. mariana*.

5' Basal ¼–½ of clypeus shagreened, without longitudinal striations. Labral process narrow, somewhat longer than broad (Fig. 13F). Nervulus usually antefurcal. Tergal apical hair band 3 narrowly interrupted (southern Levant) ... ***A. kugleri* Pisanty sp. nov.**

6 **(2).** Hind leg with pretarsal claws unidentate. Labral process concave, about as long as broad, arched laterally and pointed apically (Fig. 13G). Terga very finely and shallowly punctured. Marginal zones of T2–4 clearly demarcated, smooth, in fresh specimens covered by broad continuous bands of white hairs arising from the base of the marginal zone (Fig. 13N) (Israeli coastal plain) ... ***A. decollata* Warncke**

6' Hind leg with pretarsal claws bidentate. Labral process flat, triangular or trapezoidal (Fig. 13H, I). Terga impunctate. Marginal zones of T2–4 more weakly demarcated, shagreened. Tergal apical hair bands continuous or not, arising from the apical half the marginal zone (Fig. 13O, P) ... **7**

7 **(6).** Labral process trapezoidal, distinctly broader than long. Clypeus flat to slightly concave centrally, longtidunal striation very fine and shallow (Fig. 13H). Facial fovea relatively broad throughout, dorsally occupying 0.4 paraocular area width. Tergal apical hair bands continuous (Fig. 13O) (southern Levant) ... ***A. herodesi* Pisanty & Wood**

7' Labral process more or less triangular, about as long as broad. Clypeus slightly convex centrally, never with a concave impression, longitudinal striation strong (Fig. 13I). Facial fovea ventrally almost linear, dorsally occupying 0.3 paraocular area width. Tergal apical hair bands interrupted (Fig. 13P) (southern Israel) ... ***A. longibarbis* Pérez**

8 **(1).** Clypeus completely flat, shagreened on basal ⅔, smooth near apex (Fig. 14A). Propodeal triangle finely rugose on basal ¼–½, shagreened elsewhere (Fig. 13B). F3–10 reddish-orange. Scutum completely shagreened and matt, superficially punctured, scutellum distinctly shinier (Fig. 14G). Tergal discs strongly shagreened and matt, impunctate. Tergal marginal zones reddish-orange basally, whitish apically (Fig. 14N). Body length 7 mm (Levant, mostly arid habitats) ... ***A. yelkouan* Warncke**

8' Clypeus at least slightly domed or apically elevated, and/or propodeal triangle more coarsely or extensively rugose (Fig. 13C). Other traits variable ... **9**

9 **(8).** Facial foveae uniformly broad, not narrowed ventrally, occupying ½ paraocular area width (Fig. 14K). Clypeus and supraclypeal plate protuberant, clypeus strongly flattened medially. Labral process trapezoidal-triangular, apex notched (Fig. 14B). Propodeal triangle finely rugose basally. Body length 7–8 mm (southern Levant, in dry habitats) ... ***A. pandosa* Warncke**

9' Facial foveae narrower, at least ventrally, not occupying ½ paraocular area width. Propodeal triangle usually more extensively and/or coarsely rugose ... **10**

10 **(9).** Body length 9–10 mm. Surface of propodeal corbicula with star-shaped wrinkles (Fig. 14M). Clypeus strongly domed, strongly, coarsely transversely wrinkled, sculpture obscured by dense pubescence. Labral process broad and short (Fig. 14C). Scutum smooth, strongly, densely and very coarsely punctured (Fig. 14H). Propodeal triangle coarsely rugose to rugose-areolate. (Lebanon, at altitude) ... ***A. proxima* (Kirby)**

10' Body length 5–8 mm. Surface of propodeal corbicula finely reticulated, very rarely with star-shaped wrinkles. Clypeus variably sculptured, but not with strong coarse transverse wrinkles (in some species with weaker transverse wrinkles). Labral process, scutum and propodeal triangle with variable sculpture ... **11**

11 **(10).** Discs of T2–4 very shiny, weakly shagreened to smooth, punctation absent or weak and sparse. T2–3 with apical hair bands broadly interrupted, arising from the apical half of the marginal zone (Fig. 14O, P). Body length 7–8 mm ... **12**

11' Discs of T2–4 with variable sculpture, strongly shagreened and/or strongly and densely punctate; never strongly shining without punctures or with weak and sparse punctures. T2–3 apical hair bands often more narrowly interrupted and/or arising from the base of the marginal zone. Body length 5–8 mm ... **14**

12 **(11).** Labral process very broad, arched (Fig. 14D). T2–4 completely weakly shagreened. Tergal hair bands strong and broad (Fig. 14O). Scutum completely shagreened and matt, punctation hardly discernible. Clypeus more or less flat, smooth apically, distinctly punctured (Fig. 14D). Propodeal triangle finely rugose (northern Israel) ... ***A. dividicincta* Pisanty**

12' Labral process very narrow, more or less triangular (Fig. 14E, F). Apical part of T2–4, including apical ½ of disc and all marginal zone, mirror-smooth and impunctate. Tergal hair bands relatively weak and narrow (Fig. 14P). Scutum distinctly punctured (Fig. 14I, J). Clypeus weakly shagreened apically (Fig. 14E, F). Propodeal triangle more coarsely rugose (Levant) ... **13 *A. oedicnema* group**

13 **(12).** Clypeus with weak transverse striations (most visible in basal ½), punctation dense and relatively coarse, distance between punctures 1 puncture diameter. Labral process rounded apically (Fig. 14E). Scutum predominantly polished and shining between punctures (Fig. 14I) (Levant, scrubland, widespread) ... ***A. oedicnema* Warncke**

13' Clypeus without transverse striations, punctation sparse and relatively fine, distance between punctures 2 puncture diameters. Labral process pointed apically (Fig. 14F). Scutum shagreened to finely microreticulate at least laterally and anteriorly, with polished areas found medially (Fig. 14J) (northern Levant, scrubland, usually above 1000 m) ... ***A. cedricola* Wood**

14 **(11).** Facial foveae extremely narrow along their entire length, narrower than the width of a flagellum (Fig. 14L). Tergal discs essentially impunctate. Clypeus domed, polished and shining, with broad impunctate longitudinal midline. Body length 6.5–7 mm (Syria, Anti-Lebanon chain) ... ***A. extenuata* Wood**

14' Without this combination of characters; facial foveae almost always broader, if in doubt then terga strongly and densely punctate ..... **15 *A. minutula* group**

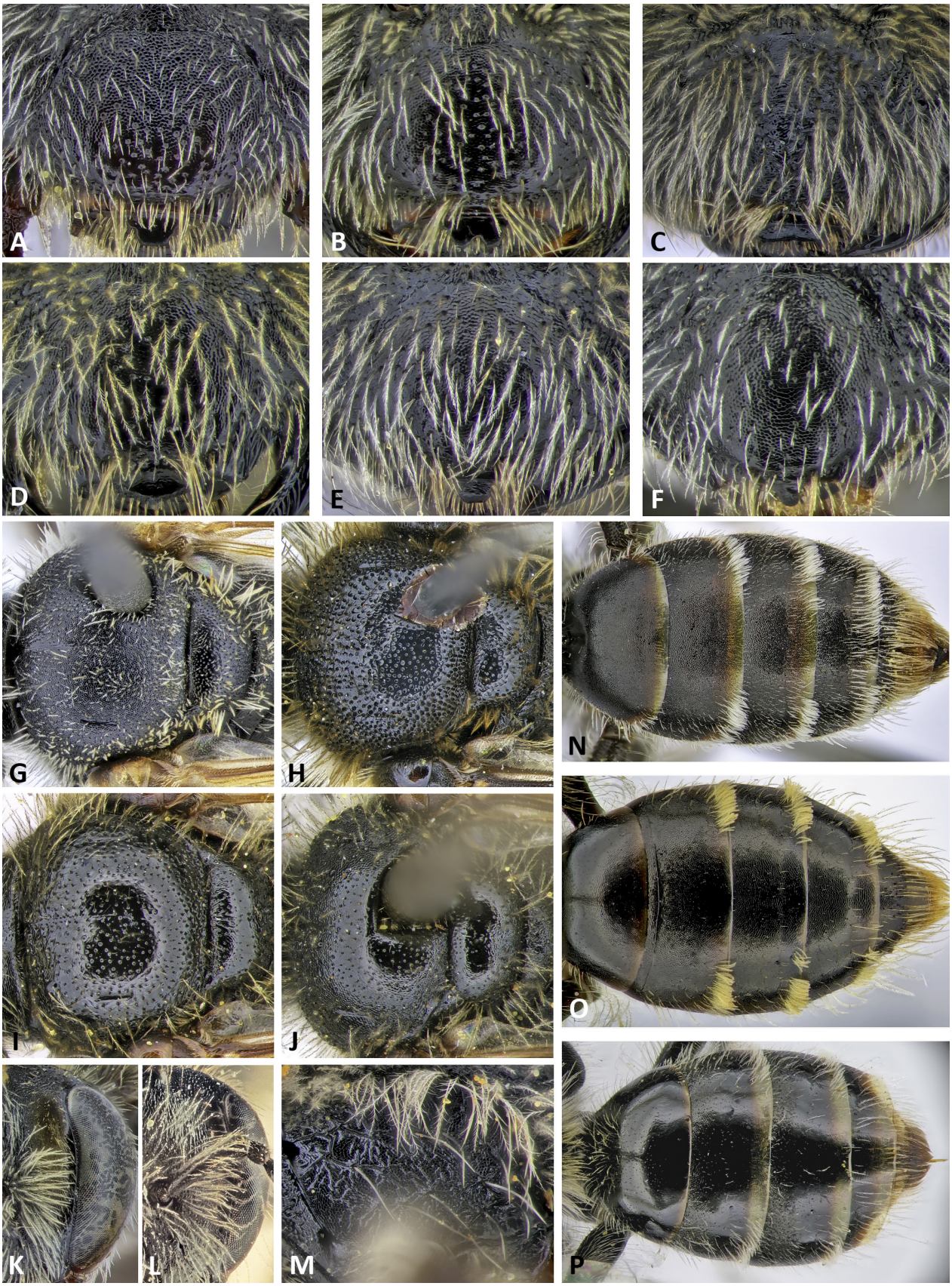

Figure 14. *Andrena* (*Micrandrena*) females, clypei (**A**–**F**), scuta and scutella (**G**–**J**), facial foveae (**K**–**L**), propodeal corbiculae (**M**) and metasomae (**N**–**P**). **A**, **G**, **N** *A. yelkouan*; **B**, **K** *A. pandosa*; **C**, **H**, **M** *A. proxima*; **D**, **O** *A. dividicincta*; **E**, **I**, **P** *A. oedicnema*; **F**, **J** *A. cedricola*; **L** *A. extenuata*.

15 (14). Discs of T1–4 smooth AND strongly and densely punctured (Fig. 15G, H) **16**
15' Discs of T2–3 and often also T1 and T4 mostly shagreened, punctation variable, usually weaker **17**
16 (15). Discs of T2–4 very densely and coarsely punctate, distance between punctures 0–0.5 puncture diameters, marginal zones more or less impunctate (Fig. 15G). Facial foveae narrow, dorsally slightly narrower than the width of a flagellum, constricted medially and noticeably narrower in ventral ½. Body length 7–7.5 mm (northern Levant, scrubland) ..... ***A. magunta* Warncke**
16' Discs of T2–4 more sparsely and finely punctate, distance between punctures 0.5–1 puncture diameters, marginal zones distinctly finely punctured (Fig. 15H). Facial foveae slightly broader, dorsally as wide as the width of a flagellum, not noticeably constricted medially or narrowed in ventral ½. Body length 6–6.5 mm (northern Levant, above 1200 m) ..... ***A. luscinia* Warncke**
17 (15). Clypeus polished-smooth at least on apical half (Fig. 15A, B). Typically species of high mountains (usually above 1000 m) **18**
17' Apical half of clypeus at least weakly shagreened or transversely wrinkled, never polished-smooth between the punctures. Found at various altitudes **22**
18 (17). Body length 5 mm. Terga essentially impunctate. Scutum shagreened to partly smooth, shiny, distance between punctures 0.5–1.5 puncture diameters (Fig. 15D) (northern Levant, usually above 1000 m) ..... ***A. tringa* Warncke**
18' Body length 6.5–8 mm. Tergal discs at least weakly punctured (Fig. 15I–L). Scutum variable **19**
19 (18). Disc of T1 smooth and polished between punctures, contrasting shagreened sculpture of discs of T2–3. Tergal discs finely and densely punctate, punctures separated by 0.5–1 puncture diameters (Fig. 15I). Facial foveae slightly but distinctly broadened dorsally, occupying slightly <½ paraocular area width, maximum width exceeding width of flagellum. Clypeus slightly flattened medially (Levant, very rare) ..... ***A. enslinella* Stöckhert**
19' Disc of T1 shagreened, not sculpturally differing from discs of T2–3. Tergal discs either more sporadically punctate (punctures separated by 0.5–3 puncture diameters, Fig. 15K, L) OR densely and coarsely punctate (Fig. 15J). Facial foveae not noticeably broadened dorsally, occupying ⅓ paraocular area width, not exceeding width of flagellum. Clypeus more evenly domed **20**
20 (19). Tergal discs strongly and coarsely punctured, punctures separated by ≤0.5 puncture diameters (Fig. 15J) (central Lebanon, at altitude) ..... ***A. libanica* Wood sp. nov.**
20' Tergal discs sporadically punctate, punctures separated by 0.5–3 puncture diameters (Fig. 15K, L) **21**
21 (20). Terga with comparatively strong microreticulation, punctures of tergal discs relatively shallow and obscure, somewhat disappearing into underlying sculpture (Fig. 15K). Terminal fringe orange-brown (central Levant, above 1900 m) ..... ***A. alshaykh* Pisanty sp. nov.**
21' Terga with comparatively weak shagreen, shining, punctures of tergal discs stronger, always with at least some distinct punctures across the central and lateral parts of the disc (Fig. 15L). Terminal fringe dark brown (Cyprus, Troodos range) ..... ***A. lindbergella* Pittioni**
22 (17). Surface of clypeus roughened by distinct transverse striations and/or oblique punctures, at least in basal half (Figs 15C, 16A–F). Scutum with variable sculpture, occasionally with punctures with raised margins (crater-like punctures) medially. Tergum 1 impunctate to strongly and distinctly punctate **23**
22' Clypeus smooth to finely shagreened, at most with hint of transverse striations (Figs 17C–E, 18A–F). Scutum without crater-like punctures. Tergum 1 at most with obscure punctures disappearing into shagreened cuticle ... **30**
23 (22). Flagellum distinctly orange anteriorly (in fresh specimens). Body length 6–6.5 mm **24**
23' Flagellum entirely dark. Body length 5–7.5 mm **25**
24 (23). Posterior ¾ of scutum polished-smooth, strongly punctured (Fig. 15E). Discs of T2–4 weakly to distinctly punctured (Levant, semi-arid habitats) ..... ***A. calandra* Warncke**
24' Scutum entirely shagreened, superficially punctured (Fig. 15F). Discs of T2–4 impunctate (southern Levant, scrubland) ..... ***A. convexifrons* Wood**
25 (23). Basal half of clypeus transversely striated, very densely punctured, distance between punctures 0–1 puncture diameters, usually with narrow impunctate midline. Apical half of clypeus shagreened to smooth, without striations, more sparsely punctured (Fig. 16A). Scutum shagreened (1st generation) or smooth (2nd generation), coarsely, strongly and densely punctured (Fig. 16G). Tergal discs finely punctured (often obscurely), disc of T1 shagreened to smooth, discs of T2–T4 shagreened. Body length 6.5–7.5 mm (Levant and Cyprus, scrubland) ..... ***A. alfkenelloides cardalia* Warncke**
25' Clypeus different, usually more uniformly sculptured (Figs 16B–F). Different trait combination **26**
26 (25). Disc of T1 weakly shagreened to smooth, distinctly finely punctured (Fig. 16L). Posterior ⅔ of scutum polished-smooth, strongly punctured (Fig. 16H). Clypeus mostly shagreened, finely and sparsely punctured, basal half finely transversely wrinkled (Fig. 16B). Body length 5.5–6 mm (Israel and West Bank, scrubland, rare) ..... ***A. friedmani* Pisanty sp. nov.**
26' Disc of T1 strongly shagreened and/or impunctate, punctation hardly discernible against underlying sculpture. Other traits variable **27**

27 **(26).** Scutum finely, very densely punctured, distance between punctures about 0.5 puncture diameter, underlying surface matt, with strong granular shagreening (Fig. 16I). Clypeus not much broader than long, strongly and densely transversely striated, relatively densely punctured, distance between punctures about 1 puncture diameter (Fig. 16C). Tergal discs impunctate. Body length 7 mm (Levant, scrubland) ..... ***A. rugothorace*** **Warncke**

27' Scutum more sparsely and/or more coarsely and obliquely punctured, underlying surface matt to partly shiny (Fig. 16J, K). Clypeus with sparser transverse striation (Fig. 16D–F). Tergal discs variable **28**

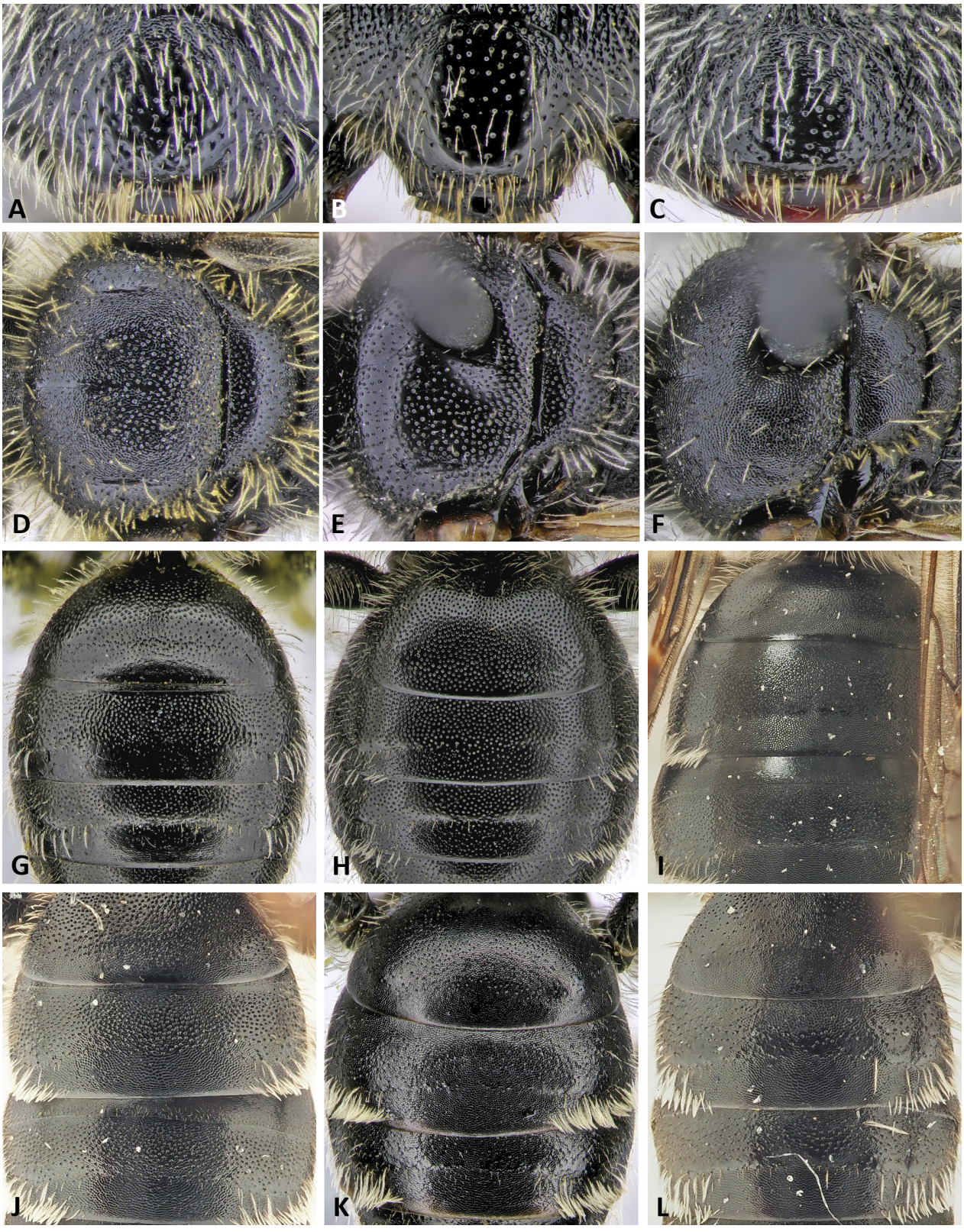

Figure 15. *Andrena* (*Micrandrena*) females, clypei (**A**–**C**), scuta and scutella (**D**–**F**) and terga 1–3 (**G**–**L**). **A**, **D** *A. tringa*; **B**, **K** *A. alshaykh*; **C**, **E** *A. calandra*; **F** *A. convexifrons*; **G** *A. magunta*; **H** *A. luscinia*; **I** *A. enslinella*; **J** *A. libanica*; **L** *A. lindbergella*.

28 (27). Scutum dull, strongly and densely punctured, some punctures with raised margins (crater-like punctures) medially (Fig. 16J). Labral process often weakly emarginate apically. Clypeus domed. Upper half of facial fovea brown in dorsal view. Body length 6.5–7.5 mm (Levant, scrubland)..... ***A. aspera* Pisanty & Wood sp. nov.**

28' Centre of scutum usually without punctures with raised margins (Fig. 16K), labral process apically truncate. Different trait combination.....**29**

29 (28). Clypeus not much broader than long, shagreened and matt, with weak transverse striations (Fig. 16E). Scutum centrally shiny (Fig. 18J). Body length 5.5–6.5 mm (Levant, scrubland)..... ***A. stolida* Warncke** (in part)

29' Clypeus distinctly broader than long, distinctly transversely striated (Fig. 16F). Scutum fully shagreened to centrally shiny (Fig. 16K). Body length 5 mm (Levant, scrubland).....***A. paganettina* Warncke**

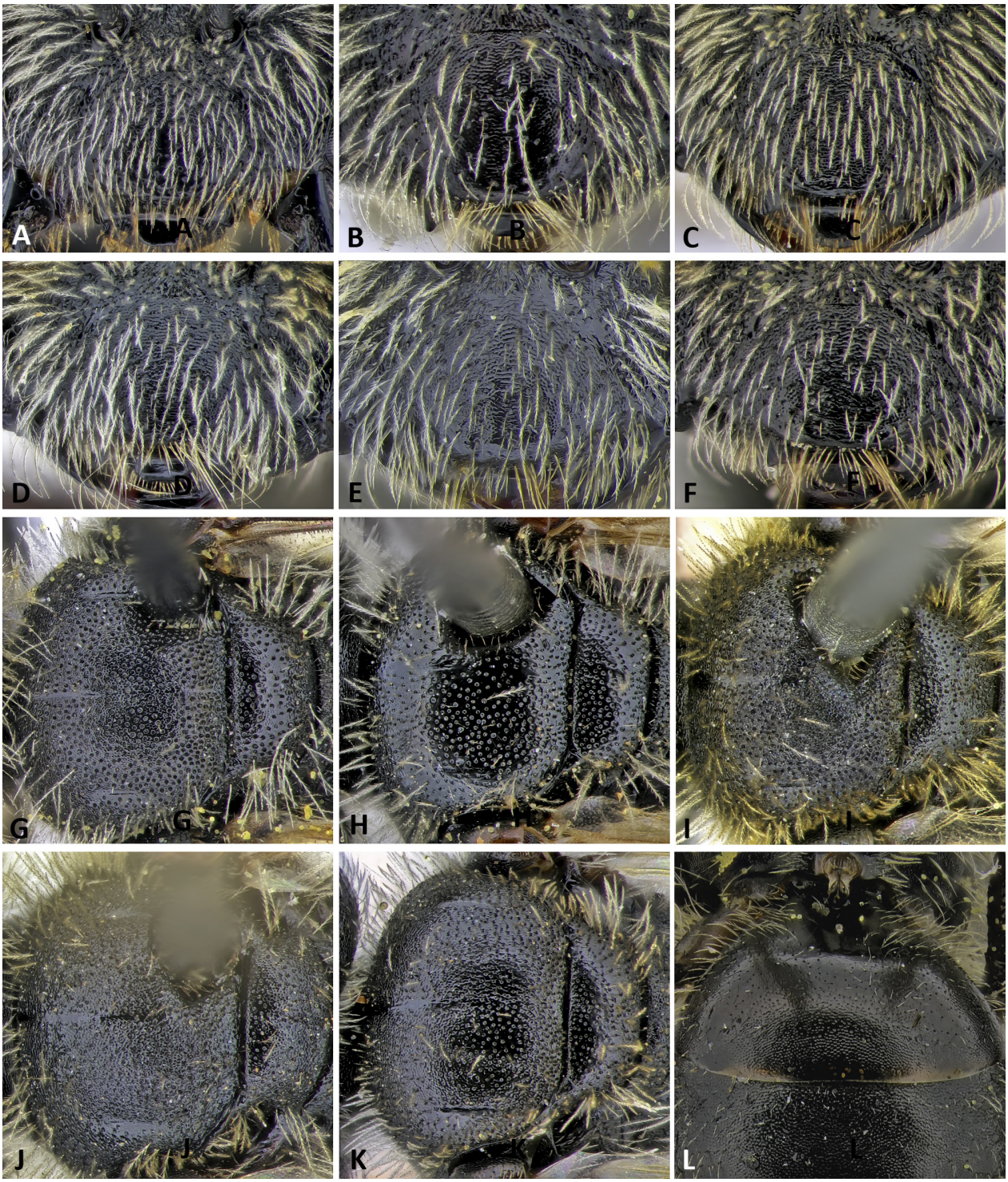

Figure 16. *Andrena* (*Micrandrena*) females, clypei (**A**–**F**), scuta and scutella (**G**–**K**) and first terga (**L**). **A** *A. alfkenelloides cardalia*, 2nd generation; **B**, **H**, **L** *A. friedmani*; **C**, **I** *A. rugothorace*; **D**, **J** *A. aspera*; **E** *A. stolida* (rugose variant); **F**, **K** *A. paganettina*; **G** *A. alfkenelloides cardalia*, 1st generation.

30 (22). Tergal marginal zones lightened orange-hyaline. Tergal hair bands broad and conspicuous, extending onto the bases of the subsequent terga (Fig. 17A). Scutum polished-smooth, finely punctured. Body length 6.5–7.5 mm (Syrian desert) ..... ***A. sulfurea* Wood**

30' Tergal marginal zones darker, tergal hair bands narrower. Scutum variable **31**

31 (30). Discs of T2–4 distinctly and densely punctate, punctures small but dense, separated by 0.5–1 puncture diameters, punctures not or only very irregularly extending onto marginal areas. Disc of T1 with punctures much more obscure (Fig. 17B). Clypeus shagreened. Scutum shagreened (1st generation) or smooth (2nd generation), coarsely, strongly and densely punctured (Fig. 17F). Body length 5.5–6 mm (Lebanon, above 1300 m)..... ***A. alfkenella* Perkins**

31' Punctation of T2–4 discs sparser and weaker, if any **32**

32 (31). Labral process snout-shaped, slightly constricted medially (Fig. 17N). Scutum completely dull, punctation extremely dense, distance between punctures 0–0.5 puncture diameter, partly obscured by dense pubescence arising from the punctures (Fig. 17G). Clypeus entirely shagreened. Body length 5.5–6.5 mm (Levant, scrubland)..... ..... ***A. lunaris* Pisanty & Wood**

32' Labral process not snout-shaped. Scutal punctation usually sparser, not obscured by dense pubescence arising from the punctures. Clypeus sculpture variable..... **33**

33 (32). Apical flagellomeres distinctly orange (in fresh specimens). Wing veins yellowish-golden (Fig. 17L). Clypeus shagreened basally, becoming smoother apically, without impunctate midline (Fig. 17C). Scutum usually shiny, at least medially, distinctly punctured (Fig. 17H). Body length 5.5–6 mm (Levant, mostly arid habitats) .... ***A. tkalcui* Gusenleitner & Schwarz**

33' Apical flagellomeres reddish-brown to black. Wing veins light to dark brown (Fig. 17M). Clypeus and scutum variable. Body length 5.5–7 mm..... **34**

34 (33). Labral process large, trapezoidal. Clypeus protuberant apically, strongly transversely arched, fully shagreened, very weakly, sparsely punctured (Fig. 17D). Scutum and scutellum entirely finely shagreened, finely punctured, distance between punctures 0.5–1.5 puncture diameters (Fig. 17I) (northern Levant, scrubland)..... ..... ***A. phoenicia* Pisanty sp. nov.**

34' Labral process smaller and/or clypeus flatter or differently sculptured. Scutum and scutellum variable..... **35**

35 (34). Discs of T3 and often also T2 distinctly smoother apically vs. basally, the tight shagreening of basal areas apically disintegrating into irregular, dense fine punctation. Clypeus domed, fully shagreened and matt (Fig. 17E). Scutum shagreened, distance between punctures 0.5–1.5 puncture diameters (Fig. 17J) (Levant, scrubland)..... ..... ***A. hebraica* Pisanty & Wood sp. nov.**

35' Discs of T2–3 uniformly, fully shagreened and impunctate. Clypeus domed to centrally flattened, shagreened to shiny. Scutum shagreened to smooth **36**

36 (35). Scutum shagreened to weakly shiny, finely and not very densely punctured, distance between punctures about 1 puncture diameter, punctation usually not very strong (Fig. 17K). Stigma yellowish-orange (Fig. 17M)..... **37**

36' Scutum shagreened to smooth, punctation stronger and/or denser (Figs 18G–L), and/or stigma brown **38**

37 (36). Scutum entirely shagreened and matt, punctation very weak, often hardly discernible. Clypeus weakly punctured, flattened medially, weakly shagreened throughout. (Israeli coastal plain) ..... ***A. tiaretta* Warncke**

37' Scutum shagreened to partly smooth, punctation usually distinct. Clypeus usually smoother apically vs. basally (Levant and Cyprus, widespread) ..... ***A. spreta* Pérez**

38 (36). Scutum and scutellum shagreened and dull, distance between punctures 0.5–1 puncture diameters, punctation usually weak, in Levantine populations often hardly discernible (Fig. 18G). Stigma brown. Clypeus fully shagreened, distinctly punctured, distance between punctures 1–2 puncture diameters (Fig. 18A) (Levant and Cyprus, scrubland)..... ***A. cervina* Warncke**

38' Scutum and scutellum shagreened to smooth, punctation stronger and/or sparser (Fig. 18H–L). Stigma and clypeus variable..... **39**

39 (38). Cypriot bees. Scutellum and often scutum distinctly shiny, distance between punctures 0.5–1.5 puncture diameters (Fig. 18H). Stigma brown. Clypeus finely, densely and relatively weakly punctured, distance between punctures 0.5–1.5 puncture diameters, underlying cuticle occasionally with fine transverse striations (Fig. 18B)... ..... ***A. aphroditae* Pisanty sp. nov.**

39' Levantine bees. Different trait combination..... **40**

40 (39). Scutum partly shagreened (1st generation) to almost smooth (2nd generation), relatively sparsely punctured, punctures slightly irregular, separated by 1–2 puncture diameters (Fig. 18I). Stigma brown. Clypeus domed, coarsely and strongly punctured, occasionally smooth apically (Fig. 18C) (northern Lebanon, at altitude) .... ***A. minutuloides* Perkins**

40' Scutum densely punctured (distance between punctures 0.5–1 puncture diameters, Fig. 18J–L) and/or clypeus finely punctured (Fig. 18E). Clypeus domed to centrally flattened, completely shagreened and dull (Fig. 18D–F) **41**

41 (40). Clypeus strongly domed, strongly granularly shagreened, often with hint of transverse striation, punctation fine, distance between punctures 1–2 puncture diameters, with ill-defined narrow impunctate midline (Fig. 18D). Scutum shiny centrally, distance between punctures 1–1.5 puncture diameters (Fig. 18J)..... ..... ***A. stolida* Warncke** (in part)

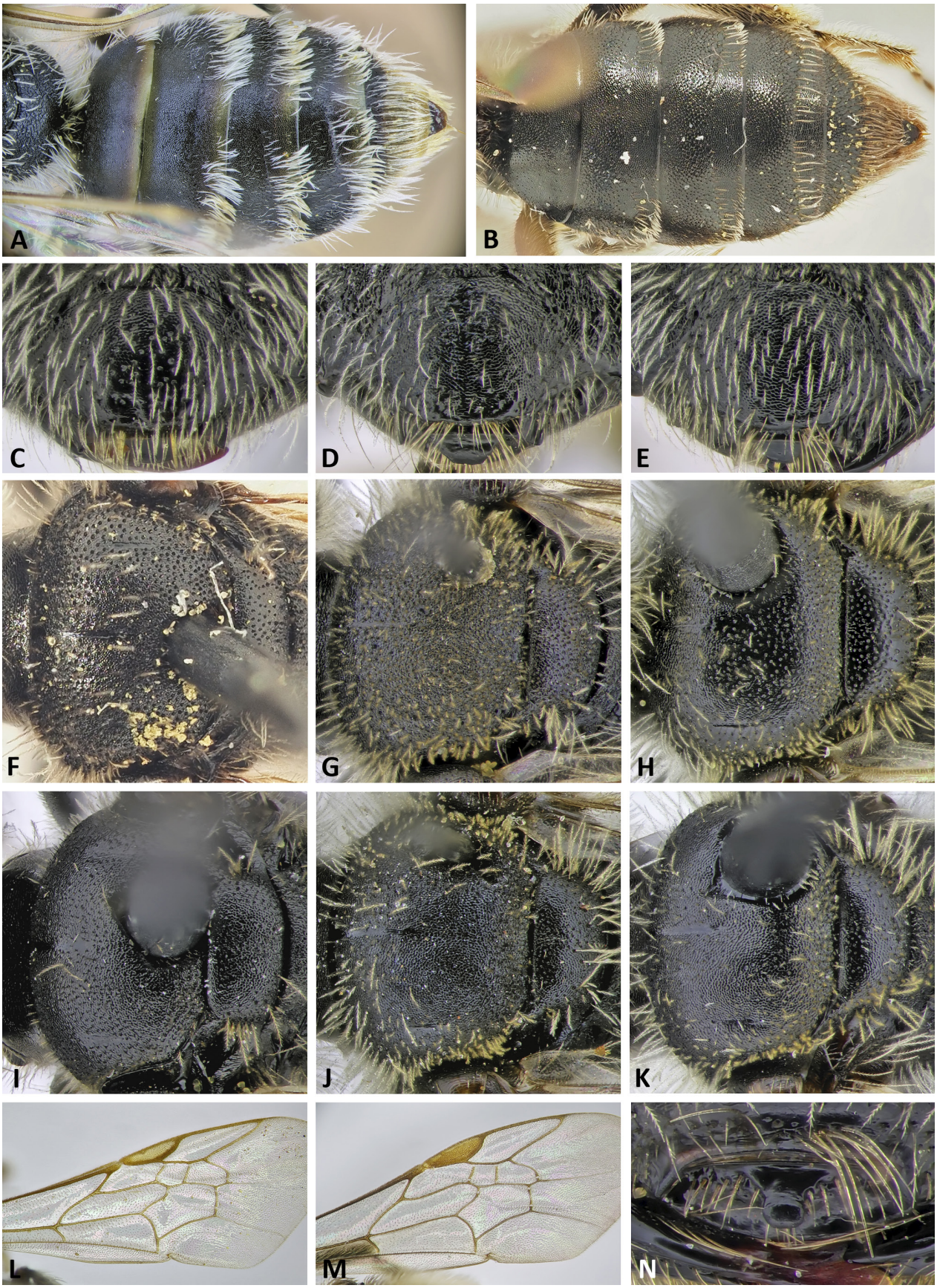

Figure 17. *Andrena* (*Micrandrena*) females, metasomae (**A**–**B**), clypei (**C**–**E**), scuta and scutella (**F**–**K**), forewings (**L**–**M**) and labral processes (**N**). **A** *A. sulfurea*; **B**, **F** *A. alfkenella*, 1st generation; **C**, **H**, **L** *A. tkalcui*; **D**, **I** *A. phoenicia*; **E**, **J** *A. hebraica*; **G**, **N** *A. lunaris*; **K**, **M** *A. spreta*.

41' Clypeus differently sculpted, either more flattened and/or more finely shagreened and/or more coarsely punctured (Fig. 18E, F). Scutum shagreened to smooth, distance between punctures about 1 puncture diameter (Fig. 18K, L).....**42**

42 (41). Clypeus punctation relatively weak, sparse and fine, distance between punctures 1–3 puncture diameters, at most with ill-defined impunctate midline (Fig. 18E). Scutum shagreened, relatively slightly more densely and finely punctured (Fig. 18K). Stigma brown. Body length 6–7 mm (Levant, scrubland)..... ***A. sillata* Warncke**

42' Clypeus punctation stronger, denser and coarser, distance between punctures 1–2 puncture diameters, often with strong impunctate midline (Fig. 18F). Scutum shagreened (1st generation) to smooth (2nd generation), relatively slightly more sparsely and coarsely punctured (Fig. 18L). Stigma yellowish to brown. Body length 5.5–6 mm (Levant, scrubland, widespread).....***A. chananaea* Pisanty & Wood sp. nov.**

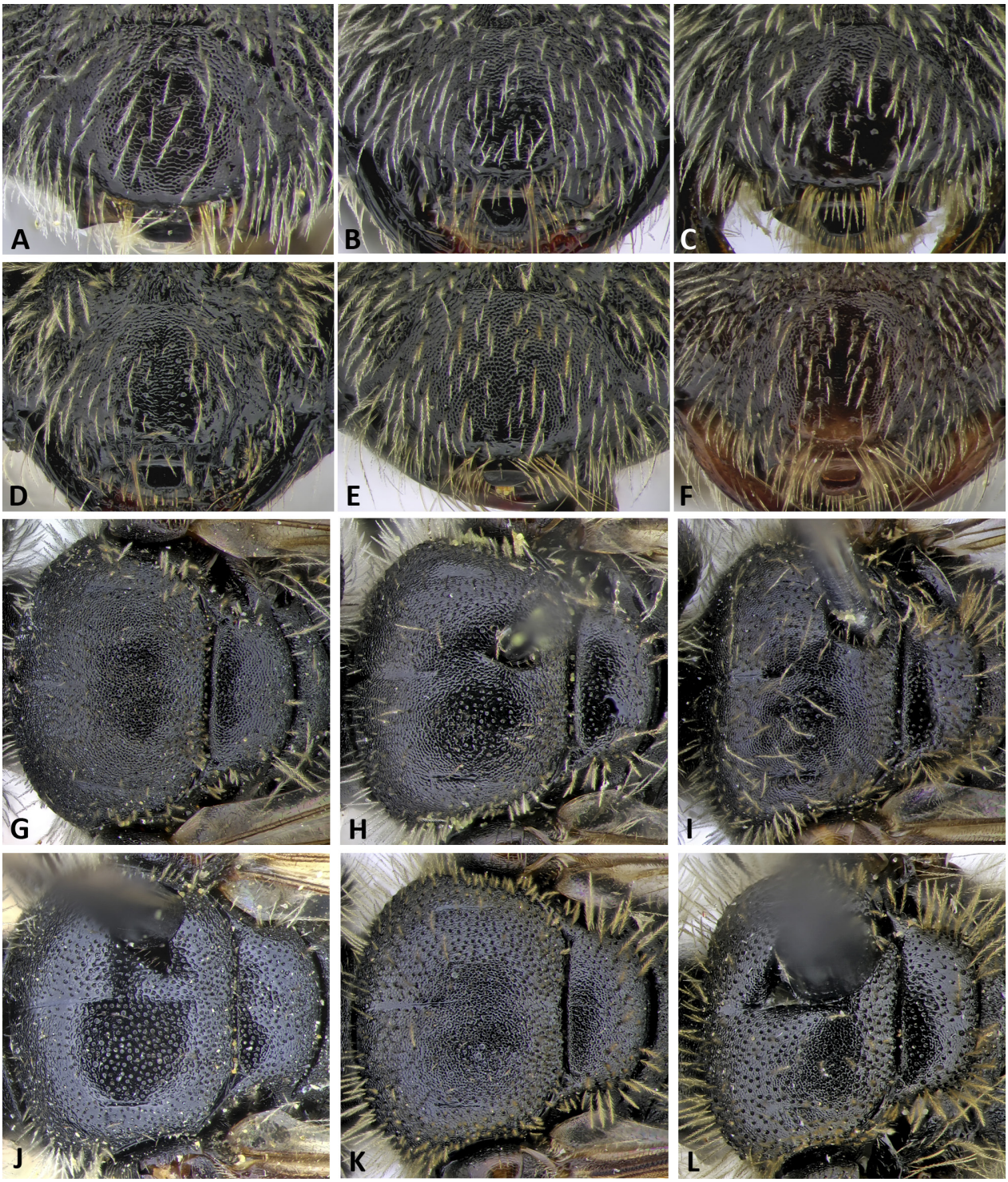

Figure 18. *Andrena* (*Micrandrena*) females, clypei (**A**–**F**) and scuta and scutella (**G**–**L**). **A**, **G** *A. cervina*; **B**, **H** *A. aphroditae*; **C**, **I** *A. minutuloides*, 1st generation; **D**, **J** *A. stolida*; **E**, **K** *A. sillata*; **F** *A. chananaea*, 2nd generation; **L** *A. chananaea*, 1st generation.

Males

1 Anterior margin of clypeus more or less flat, apicolateral corners prominent in frontal view. Clypeus smooth over majority of surface, strongly and coarsely punctured (Fig. 19D). F3–11 ventrally orange. Propodeal triangle finely rugose-areolate basally, otherwise finely reticulated. Genital capsule simple, overall shape more or less triangular due to the gonostyli strongly converging apically (Fig. 19F). Body length 6–7.5 mm (southern Levant, in dry habitats).....***A. pandosa* Warncke**

1' Anterior margin of clypeus strongly curved, apicolateral corners rather obscured in frontal view. Different trait combination.....**2**

2 **(1).** Propodeal triangle completely covered with fine reticulation, without any rugosity, at most with few mediobasal wrinkles (Fig. 13A). Scutum and terga strongly shagreened and matt, punctures hardly discernible (Fig. 13J–P). Clypeus flat or almost so (Figs 13E–I, 19E). Genital capsule usually simple, overall shape more or less triangular due to the gonostyli strongly converging apically (Fig. 19G–L). Body length 5–8 mm (Levant only, mostly in dry habitats).....**3 *A. longibarbis* group**

2' Propodeal triangle weakly to strongly rugose or rugose-areolate, at least basally at junction with metanotum (Fig. 13B, C). Body length 4–10 mm. Other traits variable.....**8**

3 **(2).** Clypeus longitudinally striated almost to its apex (Fig. 13G). Body length 6.5–7 mm (Israeli coastal plain).....***A. decollata* Warncke**

3' Clypeus smooth and shiny at least in its apical half (Fig. 13E, F)….....**4**

4 **(3).** Apex of clypeus with long white hairs, in fresh specimens these hairs almost obscuring its apical margin (Fig. 19E). Penis valves enlarged, inflated and bladder-shaped. Gonostyli strongly broadened apically, apexes pointed (Fig. 19H). Body length 7–8 mm (southern Israel).....***A. longibarbis* Pérez**

4' Apex of clypeus normally haired, hairs at apex of clypeus not noticeably longer or denser than elsewhere. Penis valves normally developed, not bladder-shaped (but may be relatively broad). Gonostyli weakly broadened apically, apex rounded (Fig. 19I–L).....**5**

5 **(4).** Scutellum shiny and almost smooth, contrasting dull sculpture of scutum (Fig. 13J). F2–11 orange ventrally, F1 about as long as broad. Tergal marginal zones whitish to orange, tergal hair bands strong (Fig. 13K). Body length 5–6 mm (southern Israel and Jordan).....***A. govinda* Warncke**

5' Scutellum matt and distinctly shagreened, dull, sculpture similar to scutum. Other traits variable. Body length 5.5–7 mm.....**6**

6 **(5).** Penis valves relatively broad basally (Fig. 19J). Base of clypeus usually with very fine longitudinal wrinkles (Fig. 13E). Nervulus interstitial to minutely antefurcal (southern Israel and Jordan).....***A. leptura* Warncke stat. nov.**

6' Penis valves narrow throughout (Fig. 19K, L). Base of clypeus very finely shagreened, without any wrinkles (Fig. 13F). Nervulus weakly to strongly antefurcal.....**7**

7 **(6).** F2–11 orange ventrally. Tergal marginal zones distinctly orange throughout, sharply contrasting with darker tergal discs, without a transition zone (Fig. 13L) (southern Israel and Jordan).....***A. mariana* Warncke s.s.**

7' F2–11 light brown ventrally. Tergal marginal zones reddish-orange basally, whitish apically, gradually blending into darker tergal discs (Levant).....***A. kugleri* Pisanty sp. nov.**

8 **(2).** Scutum very densely and coarsely, obliquely punctured (Fig. 19A). Clypeus very strongly and coarsely transversely wrinkled. Terga strongly shiny, weakly shagreened to smooth, sparsely punctured. F1 only slightly longer than 2. Genitalia simple, gonostyli elongate, finger-shaped (Fig. 19M). Body length 8–10 mm (Lebanon, at altitude).....***A. proxima* (Kirby)**

8' Scutum without oblique punctures, clypeus with weaker and finer transverse striation or none at all. Body length 4–9 mm. Other traits variable.....**9**

9 **(8).** Discs of T2–4, at least in apical half, very shiny, weakly shagreened to mirror-smooth AND finely and sparsely punctured, distance between punctures >2 puncture diameters (Fig. 14O, P). Body length 5–7 mm.....**10**

9' Discs of T2–4 more strongly shagreened and/or more densely and coarsely punctured. Body length 4–9 mm.....**12**

10 **(9).** Gonocoxites with their inner margins diverging apically, with strong, rounded dorsal lobes. Gonostyli short, strongly curved, with pronounced inner angle. Penis valves broad (Fig. 19N) (northern Israel).....***A. dividicincta* Pisanty**

10' Gonocoxites with their inner margins parallel-sided, dorsal lobes more weakly developed. Gonostyli elongate, penis valves narrow, genital shape resembling a Greek lyre (Fig. 19O, P) (Levant).....**11 *A. oedicnema* group**

11 **(10).** Scutum shiny, strongly and relatively coarsely punctured, punctures with raised margins (Fig. 19B) (Levant, scrubland, widespread).....***A. oedicnema* Warncke**

11' Scutum finely shagreened, more weakly shiny, more weakly and finely punctured, punctures usually without raised margins (Fig. 19C) (northern Levant, scrubland, usually above 1000 m).....***A. cedricola* Wood**

12 **(9).** Gonostyli strongly elongate, dorsal gonocoxite lobe absent (Fig. 20D, E). Clypeus completely flat OR scutum with faint metallic tint. Body length 5.5–6.5 mm.....**13**

12' Gonostyli not so elongate, dorsal gonocoxite lobe absent or present (Figs 20F–V, 21A–K). Clypeus at least weakly domed. Scutum without metallic tint. Body length 4–9 mm ..... **14** ***A. minutula* group**
13 (12). Clypeus completely flat. F2–11 reddish ventrally. Gonostyli more or less straight (Fig. 20D). Scutum without metallic tint (Levant, mostly arid habitats) ..... ***A. yelkouan* Warncke**
13' Clypeus weakly domed. Flagellum entirely dark. Basal half of gonostylus strongly incurved, apical half parallel-sided (Fig. 20E). Scutum with faint metallic-green tint (Syria, Anti-Lebanon chain) ..... ***A. extenuata* Wood**
14 (12). F2–11 reddish-orange ventrally. Body length 4.5–6 mm **15**
14' F2–11 brown, grey or black throughout. Body length 4–9 mm **18**
15 (14). Dorsal gonocoxite lobe strongly developed, rounded (Fig. 20F, G) **16**
15' Dorsal gonocoxite lobe weak to absent (Fig. 20H, I) **17**

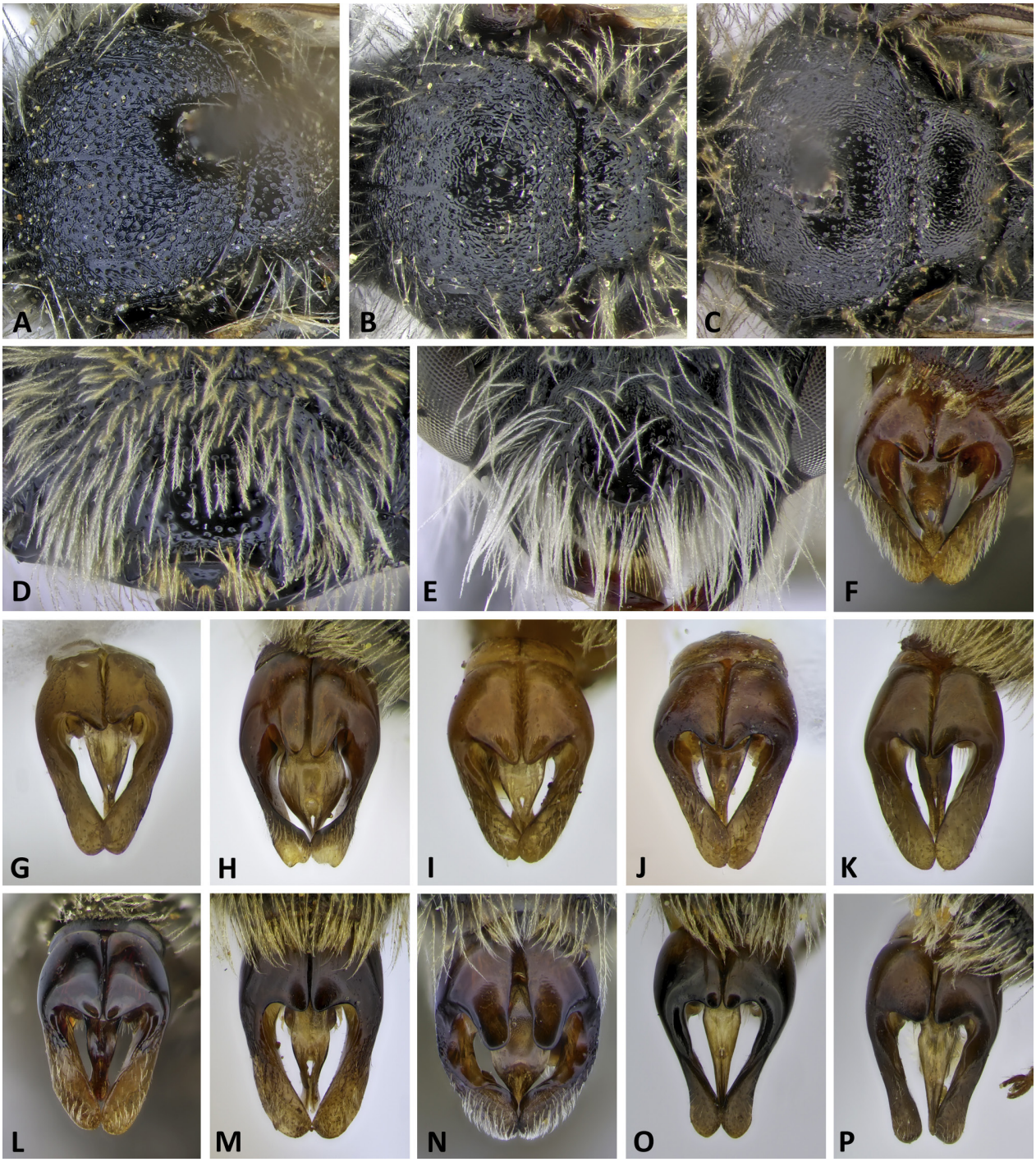

Figure 19. *Andrena* (*Micrandrena*) males, scuta and scutella (**A**–**C**), clypei (**D**–**E**) and genitalia (**F**–**P**). **A**, **M** *A. proxima*; **B**, **O** *A. oedicnema*; **C**, **P** *A. cedricola*; **D**, **F** *A. pandosa*; **E**, **H** *A. longibarbis*; **G** *A. decollata*; **I** *A. govinda*; **J** *A. leptura*; **K** *A. mariana*; **L** *A. kugleri*; **N** *A. dividicincta*.

16 (15). F1 about as long as 3, at most 1.1 times longer. Tergal hairbands relatively narrow. Genital capsule somewhat elongate, gonostyli whitish apically (Fig. 20F). Apex of S8 fishtail-shaped, distinctly notched, with ventral fan of spreading hairs which extends posteriorly beyond the apex of the sternum (Fig. 20W) (Levant, mostly arid habitats)..... ***A. tkalcui*** **Gusenleitner & Schwarz**

16' F1 at least 1.5 times longer than 3. Tergal hairbands broad, strongly extending onto disc of subsequent tergum (Fig. 17A). Genital capsule more rounded, gonostyli brown apically (Fig. 20G). Apex of S8 truncate, ventral surface with fan of hairs which does not extend beyond the apex of the sternum (Syrian desert)..... ***A. sulfurea*** **Wood**

17 (15). Scutum completely smooth (Fig. 15E). Tergal discs shagreened to smooth, usually distinctly punctured (Levant, semi-arid habitats)… ***A. calandra*** **Warncke**

17' Scutum and terga strongly shagreened and matt (Fig. 15F). Tergal punctation absent or very weak (southern Levant, scrubland)..... ***A. convexifrons*** **Wood**

18 (14). Apical margin of gonocoxite pointed, often produced into distinct dorsal lobe, never truncate (Fig. 20J–S). Body length 4.5–7 mm..... **19**

18' Apical margin of gonocoxite truncate to slightly rounded, without distinct dorsal lobe (Figs 20T–V, 21A–K). Body length 4–9 mm..... **28**

19 (18). F1 about as long as 3, at most 1.1 times longer. Genitalia simple, dorsal gonocoxite lobe small (Fig. 20J). Scutum and terga shagreened, tergal punctation very weak. Stigma yellowish-orange (Fig. 17M). Clypeus usually smooth apically. Body length 4.5–5.5 mm (Levant and Cyprus, widespread)..... ***A. spreta*** **Pérez**

19' F1 at least 1.3 times longer than 3. Other traits variable..... **20**

20 (19). Scutum smooth centrally. Dorsal gonocoxite lobe elongate and pointed, gonostyli simple, finger-shaped, penis valves relatively narrow (Fig. 20K). F1 as long as 2+3. Body length 5–5.5 mm (Israel and West Bank, scrubland, rare)..... ***A. friedmani*** **Pisanty sp. nov.**

20' Scutum shagreened across its whole surface. Genitalia different. Flagellomere proportions variable..... **21**

21 (20). Tergal discs distinctly punctured, distance between punctures 1–2 puncture diameters (Fig. 20A, B). Clypeus very smooth at least in apical half, strongly and coarsely punctured. Typically species of high mountains..... **22**

21' Tergal discs impunctate or very obscurely punctured, punctation hardly discernible from underlying shagreening. Apical half of clypeus at least weakly shagreened or transversely wrinkled, and/or weakly punctured. Found in diverse habitats..... **24**

22 (21). Gonostyli suddenly converging medially, with a resulting kink in both the inner and outer margins (Fig. 20L). Scutum relatively sparsely punctured, distance between punctures 1–2 puncture diameters. Body length 5.5–6 mm (central Levant, above 1900 m)..... ***A. alshaykh*** **Pisanty sp. nov.**

22' Gonostyli weakly, uniformly curved, without an obvious kink in either the inner or outer margins (Fig. 20M, N). Scutum densely punctured, distance between punctures 0.5–1 puncture diameter (Levant and Cyprus)..... **23**

23 (22). Terga strongly and densely punctate, punctures somewhat coarse and separated by <0.5–0.5 puncture diameters (Fig. 20A). Body length 5–6 mm (central Lebanon, at altitude)..... ***A. libanica*** **Wood sp. nov.**

23' Terga finely and slightly more sparsely punctate, punctures separated by 0.5–1 puncture diameters (Fig. 20B). Body length 6.5 mm (Cyprus, Troodos range)..... ***A. lindbergella*** **Pittioni**

24 (21). Outer margin of gonostylus with strong inward kink near apex (Fig. 20O–Q)..... **25**

24' Outer margin of gonostylus without strong inward kink near apex (Fig. 20R, S)..... **27**

25 (24). Scutum finely shagreened, punctation extremely weak, hardly discernible. Genitalia relatively slender (Fig. 20O). Body length 4.5–5 mm (Levant and Cyprus, scrubland)..... ***A. cervina*** **Warncke**

25' Scutum with strong grainy shagreening, at least some punctures distinct against this underlying sculpture. Genitalia broader (Fig. 20P, Q). Body length 5.5–6.5 mm..... **26**

26 (25). Dorsal gonocoxite lobes, when viewed together, broader than width of visible base of penis valves (Fig. 20P). Scutum posteromedially with shagreen slightly stronger, dull, punctures separated by 1–2 puncture diameters (northern Levant, scrubland)..... ***A. phoenicia*** **Pisanty sp. nov.**

26' Dorsal gonocoxite lobes, when viewed together, slightly narrower than width of visible base of penis valves (Fig. 20Q). Scutum posteromedially with shagreen slightly weaker, weakly shining, punctures more clearly visible, separated by 0.5–1 puncture diameters (Levant, scrubland)..... ***A. stolida*** **Warncke**

27 (24). Clypeus transversely striated at least in basal ½. F1 about as long as 2+3. Penis valves narrow, slightly broadening close to visible base (Fig. 20R). Body length 6–7 mm (Levant, scrubland)..... ***A. rugothorace*** **Warncke**

27' Clypeus not striated, at most with slight wrinkles basolaterally. F1 distinctly shorter than 2+3. Penis valves broad basally, occupying ½ space between gonostyli, strongly tapering to strong contraction at mid-point, apical half very narrow (Fig. 20S). Body length 5.5 mm (Levant, scrubland)..... ***A. lunaris*** **Pisanty & Wood**

28 (18). Discs of T2–4 smooth AND distinctly punctured, at least on apical half (Fig. 15G, H). Body length 5–9 mm..... **29**

28' Discs of T2–4 mostly shagreened throughout and/or obscurely punctured to impunctate. Body length 4–7 mm... **34**

29 (28). Ocelloccipital distance about 2 times the diameter of a lateral ocellus (Fig. 20C). Terga completely smooth (Fig. 15G), scutum fully shagreened. Body length 5.5 mm (northern Levant, scrubland)… ***A. magunta*** **Warncke**

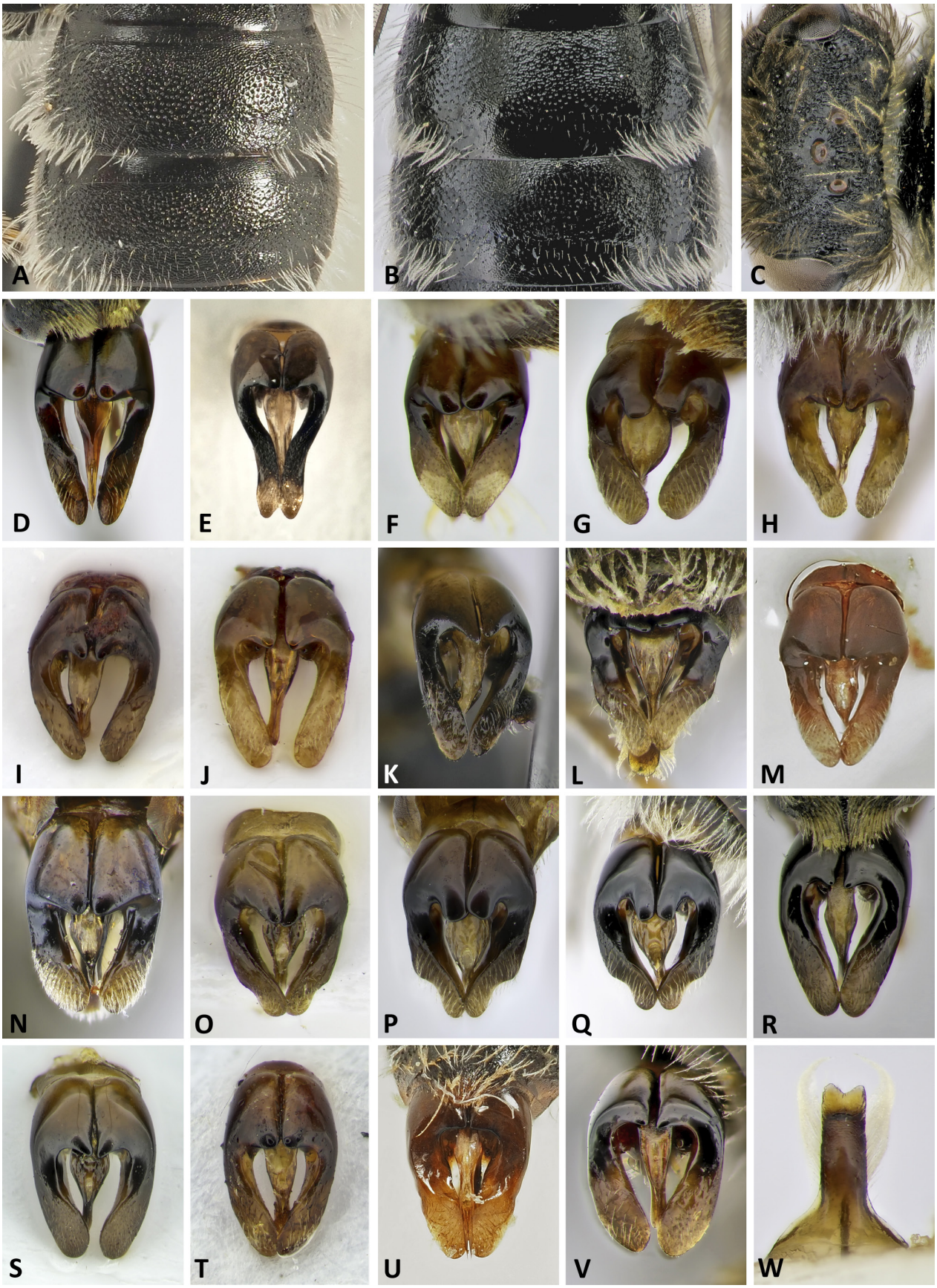

Figure 20. *Andrena* (*Micrandrena*) males, terga 2–3 (**A**, **B**), vertices (**C**), genitalia (**D**–**V**) and eighth sterna (**W**). **A**, **M** *A. libanica*; **B**, **N** *A. lindbergella*; **C**, **T** *A. magunta*; **D** *A. yelkouan*; **E** *A. extenuata*; **F**, **W** *A. tkalcui*; **G** *A. sulfurea*; **H** *A. calandra*; **I** *A. convexifrons*; **J** *A. spreta*; **K** *A. friedmani*; **L** *A. alshaykh*; **O** *A. cervina*; **P** *A. phoenicia*; **Q** *A. stolida*; **R** *A. rugothorace*; **S** *A. lunaris*; **U** *A. enslinella*; **V** *A. luscinia*.

29' Ocelloccipital distance more or less equal to the diameter of a lateral ocellus. Terga and scutum variable **30**

30 (29). F1 as long as 2+3 or slightly longer. Body length 8–9 mm. Genital capsule distinctive, gonostyli thick and robust, strongly contrasting extremely narrow penis valves, penis valves produced to very narrow stiletto-like points between broad flattened apical parts of gonostyli (Fig. 20U) (Levant, very rare) ..... ***A. enslinella*** **Stöckhert**

30' F1 distinctly shorter than 2+3. Body length 5–6.5 mm. Genital capsule different **31**

31 (30). Marginal zone of T2 and to a lesser extent T3 distinctly and finely punctured. Entire surface of terga completely smooth (Fig. 15H). Body length 5.5 mm (northern Levant, above 1200 m) ..... ***A. luscinia*** **Warncke**

31' T2–3 with marginal zones mostly impunctate. Surface of terga often with partly shagreened areas **32**

32 (31). Gonostyli almost parallel-sided, only slightly narrowing basally. Penis valves distinctly broader basally vs. apically (Fig. 21A). Terga relatively finely punctured. F1 usually 1.5–1.8 times longer than 2, rarely shorter than 3. Body length 5–6 mm (Levant, scrubland)..... ***A. chananaea*** **Pisanty & Wood sp. nov.** (in part)

32' Gonostyli with inner margins more strongly narrowing basally. Penis valves more uniformly narrow (Fig. 21B, C). Terga relatively coarsely punctured. Flagellomere proportions variable **33**

33 (32). 1st generation (black to dark facial hair) with clypeus densely punctate, often with transverse striations basally, clypeus generally dull. 2nd generation (pale facial hair) with clypeus densely punctate, punctures almost confluent, interspaces dull. F1 usually 1.0–1.2 times longer than 2, often shorter than 3. Body length 5–6.5 mm (Levant and Cyprus, scrubland, widespread) ..... ***A. alfkenelloides cardalia*** **Warncke** (in part)

33' 1st generation (black facial hair) with clypeus comparatively more sparsely punctate, therefore more strongly shining, never with transverse striations. 2nd generation (pale facial hair) with clypeus comparatively more sparsely punctate, punctures separated by up to 1 puncture diameter, interspaces polished and shining. F1 usually about 1.5 times longer than 2, rarely shorter than 3. Body length 6–6.5 mm (Lebanon, above 1300 m) ..... ***A. alfkenella*** **Perkins**

34 (28). Gonostyli with both inner and outer margins strongly curved inwards, apexes somewhat truncate. Penis valves broad, at maximum width (submedially) occupying more than ½ space between gonostyli (Fig. 21D). Scutum and terga shagreened, punctation weak. Body length 5–5.5 mm (Levant, scrubland) ..... ***A. sillata*** **Warncke**

34' Gonostyli not strongly curved inwards (Fig. 21A, B, E–K). Other traits variable **35**

35 (34). Penis valves narrow basally, slightly broadening medially close to visible base (Fig. 21E). F1 1.3–1.5 times as long as 3. Clypeus coarsely and very densely punctured, punctures almost confluent, with raised margins, clypeus surface mostly hidden by dense and long white pubescence. Scutum with strong grainy shagreening, some punctures with raised margins. Body length 5.5–6.5 mm (Levant, scrubland) ..... ***A. aspera*** **Pisanty & Wood sp. nov.**

35' Penis valves parallel-sided or tapering apically, not broadening above visible base (Fig. 21A, B, F–K). F1 at most 1.2 times as long as 3, and/or clypeus more sparsely punctured, and/or scutum punctation without raised margins **36**

36 (35). Discs of T1–3 distinctly to obscurely punctate, underlying surface shagreened and dull to partly smooth and shiny. Body length 5–7 mm **37**

36' Discs of T1–2 and often also T3 entirely impunctate, underlying surface shagreened. Body length 4–7 mm.....**39**

37 (36). Penis valves broad basally, occupying almost ½ the space between the gonostyli. Genital capsule with gonocoxites slightly inflated, not smoothly transitioning into gonostyli, base of penis valves slightly bulbous (Fig. 21F). Scutum relatively sparsely and irregularly punctured, distance between punctures 1–3 puncture diameters (northern Lebanon, at altitude) ..... ***A. minutuloides*** **Perkins** (in part)

37' Penis valves narrower basally, occupying <½ the space between the gonostyli (Fig. 21A, B). Scutum densely punctured, distance between punctures about 1 puncture diameter.....**38**

38 (37). Gonostyli almost parallel-sided, slightly narrowing basally. Penis valves distinctly broader basally vs. apically (Fig. 21A). Terga relatively finely punctured. F1 usually 1.5–1.8 times longer than 2, rarely shorter than 3 (Levant, scrubland) ..... ***A. chananaea*** **Pisanty & Wood sp. nov.** (in part)

38' Gonostyli with inner margin more strongly narrowing basally. Penis valves more uniformly narrow (Fig. 21B). Terga relatively coarsely punctured. F1 usually 1.0–1.2 times longer than 2, often shorter than 3 (Levant and Cyprus, scrubland)..... ***A. alfkenelloides cardalia*** **Warncke** (in part)

39 (36). Penis valves very broad basally, uniformly tapering all the way to needle-like apex, therefore shaped as a very elongated triangle (Fig. 21G). F1 1.3–1.4 times as long as 3. Scutum shagreened and dull, punctation extremely weak. Clypeus very shiny apically. Body length 5–6 mm (Israeli coastal plain) ..... ***A. tiaretta*** **Warncke**

39' Penis valves different, either narrower basally and/or not uniformly tapering apically and/or not needle-like apically (Fig. 21F, H–K). F1 usually 0.7–1.2 times as long as 3, rarely longer. Scutum usually more distinctly punctured... **40**

40 (39). Clypeus completely smooth at least in apical half. Body length 4–5.5 mm **41**

40' Clypeus weakly to strongly shagreened apically. Body length 4–7 mm.....**42**

41 (40). Penis valves relatively broad basally. Gonocoxites often slightly rounded apically (Fig. 21H). Scutellum shagreened, dull to weakly shiny centrally. Body length 4–5 mm (northern Levant, usually above 1000 m)..... ..... ***A. tringa*** **Warncke**

41' Penis valves narrower basally. Gonocoxites apically truncate (Fig. 21I). Scutellum shiny, often completely smooth. Body length 5–5.5 mm (Cyprus, scrubland) ..... ***A. aphroditae*** **Pisanty sp. nov.**

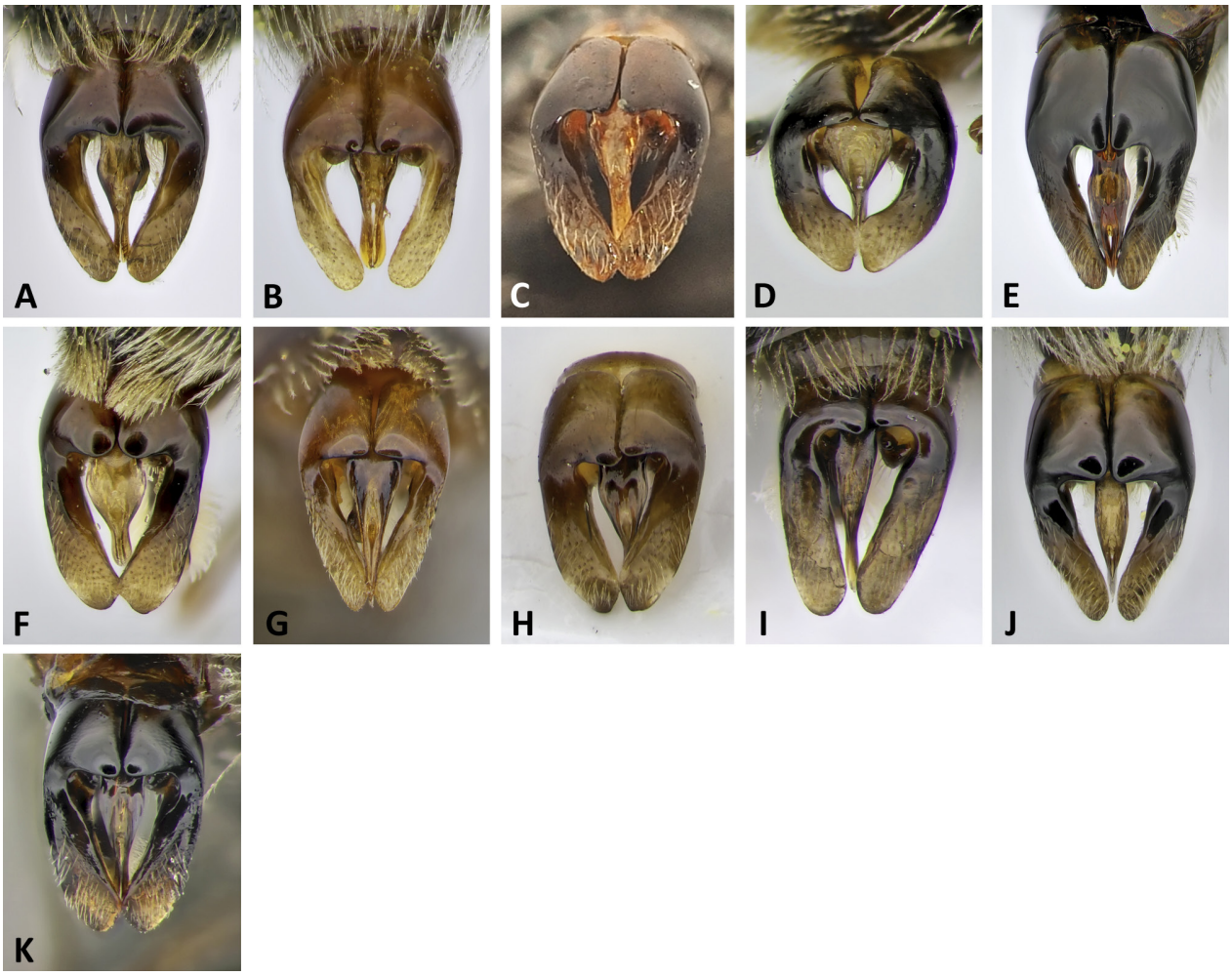

Figure 21. *Andrena* (*Micrandrena*) male genitalia. **A** *A. chananaea*; **B** *A. alfkenelloides cardalia*; **C** *A. alfkenella*; **D** *A. sillata*; **E** *A. aspera*; **F** *A. minutuloides*; **G** *A. tiaretta*; **H** *A. tringa*; **I** *A. aphroditae*; **J** *A. hebraica*; **K** *A. paganettina*.

42 (40). T1–3 marginal zones mostly smooth. Penis valves broad basally, occupying almost ½ the space between the gonostyli. Genital capsule with gonocoxites slightly inflated, not smoothly transitioning into gonostyli, base of penis valves slightly bulbous (Fig. 21F). Scutum finely shagreened and weakly shiny (1st generation) to polished and shiny (2nd generation), punctures separated by 1–3 puncture diameters. Body length 5–7 mm (northern Lebanon, at altitude)..... ***A. minutuloides* Perkins** (in part)

42' T1–3 marginal zones mostly shagreened. Penis valves narrower basally (Fig. 21J, K). Scutum shagreened. Body length 4–6 mm.....**43**

43 (42). Outer margins of gonostyli converging apically, with slight inward kink at mid-length (Fig. 21J). Clypeus without wrinkles. Disc of T3 usually shiny apically. Body length 5–6 mm (Levant, scrubland)..... ..... ***A. hebraica* Pisanty & Wood sp. nov.**

43' Outer margins of gonostyli uniformly arched, without inward kink (Fig. 21K). Clypeus often with transverse wrinkles on basal half. Disc of T3 entirely shagreened and matt. Body length 4–5 mm (Levant, scrubland)..... ..... ***A. paganettina* Warncke**

3.1.6. Species removed from list of Levant and Cyprus

3.1.6.1. *Andrena* (*Micrandrena*) *fumida* Pérez, 1895

Remarks. See Pisanty et al. 2022b.

3.1.6.2. *Andrena* (*Micrandrena*) *minutula* (Kirby, 1802)

Andrena dargia Warncke, 1965: 65–66, ♀ [Greece: OLML] **syn. nov.**

Remarks. Material of *Andrena chananaea* **sp. nov.** from Lebanon was confused with *A. minutula* (Wood et al. 2020; Boustani et al. 2021), as the two species are impos-

sible to differentiate in the female sex. Other records of *A. minutula* from the Levant are extremely old (Magretti 1890; Zavattari 1905), and during this time most of the species concepts of *Micrandrena* did not yet exist, so it is impossible to know what these records truly refer to. The distribution maps in the worldwide *Andrena* checklist of Gusenleitner & Schwarz (2002), which were drawn by Warncke, mention *A. minutula* also from Cyprus (as subspecies *A. m. dargia*, cited in Varnava et al. 2020). Nevertheless, our examination of thousands of specimens, together with generous DNA barcoding, could not find any material corresponding to *A. minutula* in our entire study region. We therefore exclude this taxon entirely from the Levant and Cyprus.

Warncke (1965) described *Andrena dargia* from Greece, closely related to *A. minutula*. Later in his life he seemed to have regarded it as a subspecies of the latter (Gusenleitner & Schwarz 2002), but he never published the revised status. It has now been possible to generate molecular barcodes from across Greece, including from southern regions, geographically overlaying the locus typicus of *A. dargia* in Delphi. These sequences indeed fall within the broad West Palaearcitc molecular concept of *A. minutula*. Morphologically, the type specimen of *A. dargia* conforms to the species concept of *A. minutula*; the scutum is densely punctate with punctures separated by 0.5–1 puncture diameters, the terga are at most obscurely punctate, the tergal margins are only very slightly depressed, the tergal margins laterally have thin apical hair fringes, the propodeal triangle is entirely rugose, the facial foveae are not noticeably broadened or narrowed, the head is not noticeably broadened or elongate, and the clypeus is dull and moderately punctate. In this context, it is appropriate to treat *A. dargia* as a junior synonym of *A. minutula* **syn. nov.**

Material examined. HOLOTYPE (*A. dargia* Warncke): GREECE ● 1♀; Delphi; 11 Apr. 1963; Kl. Warncke leg.; OLML. – **non-type material: GREECE** ● 1♀; Eastern Macedonia and Thrace, Drama, Volakas, 2.6 km S of Volakas; 41.2933° N 24.0065° E; 1150 m a.s.l.; 24 May 2023; T. Wood leg.; BOLD accession no. WPATW1299-23; TJWC ● 1♀; Kefalonia [Cephalonia], Ainos Mt., summit; 1600 m a.s.l.; 17 Jun. 2016; L. Friedman leg.; BOLD accession no. ANDGP023-25; SMNHTAU 252333 ● 1♀; Megapolis [Megalopolis] (Peloponn. Arkadia); 11 Apr. 1988; H. Teunissen leg.; BOLD accession no. BGENL1421-24; RMNH RMNH.INS.1266077 ● 1♀; Rte Sparti-Tripolis, Pelop.; 12 Apr. 1988; H. Teunissen leg.; BOLD accession no. BGENL1422-24; RMNH RMNH.INS.1266079 ● 1♀; Taygetos Mts, 1200 m, Peloponnese; 20 May 1987; H. Teunissen leg.; BOLD accession no. BGENL1420-24; RMNH RMNH.INS.1266076. – **MOROCCO** ● 1♀; Drâa-Tafilalet, Ouarzazate, Sour, 1 km N; 31.1321° N –7.5946° W; 13 Apr. 2022; T. Wood leg.; BOLD accession no. WPATW596-22; TJWC ● 1♀; Fès-Meknès, Ifrane, R707, 8 km SE of Ifrane; 33.47° N –5.04° W; 1800 m a.s.l.; 24 May 2022; T. Wood leg.; BOLD accession no. WPATW595-22; TJWC ● 1♀; Souss-Massa, Tafraoute, Iguissle (3 km E Tanalt); 29.7730° N –9.1233° W; c. 1500 m a.s.l.; 21 Mar. 2022; T. Wood leg.; BOLD accession no. WPATW512-22; TJWC. – **SPAIN** ● 1♀; Aldeanueva de Atienza; 41.1658° N –3.0980° W; m a.s.l.; 9 Jul. 2021; T. Wood leg.; BOLD accession no. WPATW328-21; TJWC ● 1♀; PN Sierra de las Nieves, mountain peak S of Pinsapo Escalereta; 36.6621° N –5.0362° W; 30 May 2021; T. Wood leg.; BOLD accession no. WPATW238-21; TJWC.

3.1.6.3. *Andrena* (*Micrandrena*) *purpurascens* Pérez, 1895

Remarks. This North African species was mentioned from the West Bank by Alfken (1935), but the material was reidentified as *A. iliaca* by Warncke (1969).

3.1.6.4. *Andrena* (*Micrandrena*) *pusilla* Pérez, 1903

Remarks. Bodenheimer (1937) mentions this species from Palestine, without specimen data. *Andrena pusilla* is not known outside Europe (Wood 2023a), and the record most probably refers to the closely related *A. spreta*.

3.1.6.5. *Andrena* (*Micrandrena*) *rugulosa* Stöckhert, 1935

Remarks. As material reported from Lebanon by Boustani et al. (2021) has now been described as *A. libanica*, *A. rugulosa* can be removed from the Levantine fauna; it remains a species widely distributed across Europe and Turkey to the Caucasus.

Material examined. TURKEY ● 2♀; Osmania [Osmaniye], Küllü; 1640 m a.s.l.; 9 Jun. 2006; M. Kafka leg.; BOLD accession nos. ANDGP014-25, ANDGP022-25; OLML.

3.1.6.6. *Andrena* (*Micrandrena*) *simontornyella* Noskiewicz, 1939

Remarks. Warncke (1969), Grace (2010), Wood et al. (2020) and Boustani et al. 2021 mention this species from Israel and/or Lebanon. The single female mentioned by Wood et al. and Boustani et al. was reidentified as *A. aspera* **sp. nov.** We could not locate any of the specimens mentioned by Warncke, but we assume he also confused this species with similar local taxa such as *A. aspera*, *A. cervina*, *A. phoenicia* **sp. nov.** or *A. stolida*.

Material examined. GREECE ● 1♀; Lampeia; 30 May 2023; S. Flaminio leg.; BOLD accession no. WPATW1456-23; TJWC. – **SPAIN** ● 1♀; Balaguer, Camarasa, Aiguabarreig Segre-Noguera Pallaresa; 41.8758° N 0.8508° E; 11 May 2021; T. Wood leg.; BOLD accession no. WPATW108-21; TJWC ● 1♀; Madrona, 500 m NE, Arroyo del Hocino; 40.9006° N –4.1559° W; 15 May 2021; T. Wood leg.; BOLD accession no. WPATW157-21; TJWC.

3.2. Species removed from subgenus *Andrena* (*Micrandrena*)

3.2.1. *Andrena* (*incertae sedis*) *immaculata* Warncke, 1975

Material examined. ISRAEL ● 1♀; Yiftach; 21 Apr. 2015; O. Winberger leg.; pan trap; BOLD accession no. ANDIL173-22; SMNHTAU 184687.

3.2.2. *Andrena* (*incertae sedis*) *protuber* Pisanty, 2022

Remarks. First record from the West Bank.

Material examined. ISRAEL ● 1♂; Har Hermon; 33.2994° N 35.7675° E; 1645 m a.s.l.; sweeping; 16 Apr. 2021; G. Pisanty leg.; BOLD accession no. ANDIL126-22; SMNHTAU 361398 ● 1♀; Sasa; 20 Apr. 2015; O. Winberger leg.; pan trap; BOLD accession no. ANDIL042-22; SMNHTAU 184788. – **WEST BANK** ● 4♀; Itamar, 5kmE, ThreeSeas' Lookout; 860 m a.s.l.; 5 Mar. 2021; L. Friedman leg.; SMNHTAU 357699, 357700, 357705, 357706 ● 1♂; ibid.; SMNHTAU 357703 ● 1♀; ibid.; BOLD accession no. ANDIL491-25; SMNHTAU 357698.

3.3. Additional examined species

3.3.1. *Andrena* (*Micrandrena*) *povolnyi* Warncke, 1974 stat. nov.

Andrena (*Micrandrena*) *spreta* ssp. *povolnyi* Warncke, 1974c: 167, ♀♂ [Afghanistan: MMBC].

Remarks. Judged by the often subtle morphological differences between *A. spreta*, *A. tiaretta*, *A. aphroditae* **sp. nov.** and *A. hebraica* **sp. nov.**, all of which clearly merit species status as supported by molecular barcoding, we believe *A. s. povolonyi* also differs sufficiently from nominate *A. spreta* to warrant species status (see also diagnosis section of *A. hebraica* Pisanty & Wood **sp. nov.**). The species is currently only known from Afghanistan.

Material examined. PARATYPES: AFGHANISTAN ● 1♀; O. Afghanistan, Prov. Nengrahar, Darunta; 580 m a.s.l.; 28 Mar. 1967; D. Povolný et coll. leg.; OLML ● 1♀; O. Afghanistan, Prov. Nengrahar, Jalalabad; 560 m a.s.l.; 9 Mar. [19]66; Povolný & Tenora leg.; OLML ● 2♂; O. Afghanistan, Prov. Nengrahar, Laghman; 860 m a.s.l.; 24 Feb. [19]66; Povolný & Tenora leg.; OLML ● 1♂; ibid.; 10 Mar. [19]66.

3.3.2. *Andrena* (*Micrandrena*) *querquedula* Warncke, 1975

Material examined. IRAN ● 1♀; Fars province, Yasuj, Sarb-e Taveh; 2030 m a.s.l.; 4 May 2016; M. Kafka leg.; BOLD accession no. ANDGP020-25; OLML.

3.3.3. *Andrena* (incertae sedis) *pavonia* Warncke, 1974

Remarks. First record from the Levant.

Material examined. ISRAEL ● 1♂; Holot Mash'abbim; 30.999° N 34.7578° E; 13 Feb. 2022; G. Pisanty leg.; sweeping, BOLD accession no. ANDIL497-25; SMNHTAU 384336 ● 1♀; ibid.; 18 Feb. 2022; pan trap; BOLD accession no. ANDIL500-25; SMNHTAU 384613.

4. Author contributions

Conceptualization: GP, TJWC. Data curation: GP, RS, TJWC. Formal analysis: GP, TJWC. Funding acquisition: SC, TJWC. Investigation: GP, RS, TM, TJWC. Methodology: GP, TJWC. Project administration: GP, TJWC. Resources: GP, SC, TJWC. Software: not applicable. Supervision: GP, TJWC. Validation: GP, TJWC. Visualization: GP. Writing – original draft: GP, TJWC. Writing – review & editing: GP, RS, TM, SC, TJWC.

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