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# ZOOTAXA

1865

**A taxonomic catalogue of the Palearctic bees of the tribe Osmiini  
(Hymenoptera: Apoidea: Megachilidae)**

STEFAN UNGRICHT, ANDREAS MÜLLER & SILVIA DORN



Magnolia Press  
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## A taxonomic catalogue of the Palaearctic bees of the tribe Osmiini (Hymenoptera: Apoidea: Megachilidae)

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## Abstract

This taxonomic catalogue covers all family-, genus- and species-group names of the Palaearctic bees of the tribe Osmiini as published by the end of 2006. As the taxonomy of the Palaearctic Osmiini is currently in a poor state, the primary goal of this catalogue is to provide a complete coverage of the widely dispersed and often not easily accessible taxonomic literature, thus laying the basis for further taxonomic work. We therefore refrain from proposing new synonyms, new names, new ranks or new combinations, and the taxa accepted here are based on a literature survey, generally adopting the most recent published opinion. The generic and subgeneric system proposed by Michener (2000) serves as a general backbone for this catalogue. We list six available family-group names, 93 available genus-group names and 935 available species-group names that currently split up into the valid names of two subtribes, 13 genera, 43 non-nominotypical subgenera, 604 species and 76 non-nominotypical subspecies. Starting with Linnaeus (1758), a total of 99 mainly European taxonomists contributed to the available species-group names by the end of 2006. Taxon accounts provide the reference to the original description, the name-bearing type(s), distribution, and literature sources for species identification. Apart from the extant taxa the catalogue also treats the extinct representatives of the osmiine bees following the tribal classification of Engel (2005).

**Key words:** Apiformes, classification, distribution, fossils, mason bees, nomenclature, osmiine bees, pollinators, synonymy, taxonomic history, types

## Introduction

“The Palearctic [bee] fauna is the most difficult in the world to study because of the lack of catalogues [...] combined with the great number of species, many of them named long ago [...]”

—Charles D. Michener (2000: 113)

## Rationale and scope of the catalogue

Objects without names cannot be communicated about in an unambiguous manner. Knowledge on taxa that has accumulated for centuries in particular will remain inaccessible without correct scientific names (Winston, 1999). The most important function of taxonomy (i.e., the assignment of organisms to taxa) and in particular of nomenclature (i.e., the naming of the recognized taxa) is simply the provision of a universal framework for information retrieval. As a vehicle for information exchange, nomenclature is one of the most basic tasks of systematic biology to ensure an up-to-date directory of valid names. In fact, taxonomy is rather unique in biology in that it is fundamentally retrospective, evaluating all previous works with nomenclatural bearing since Linnaeus’s *Systema Naturae* (1758), published 250 years ago.

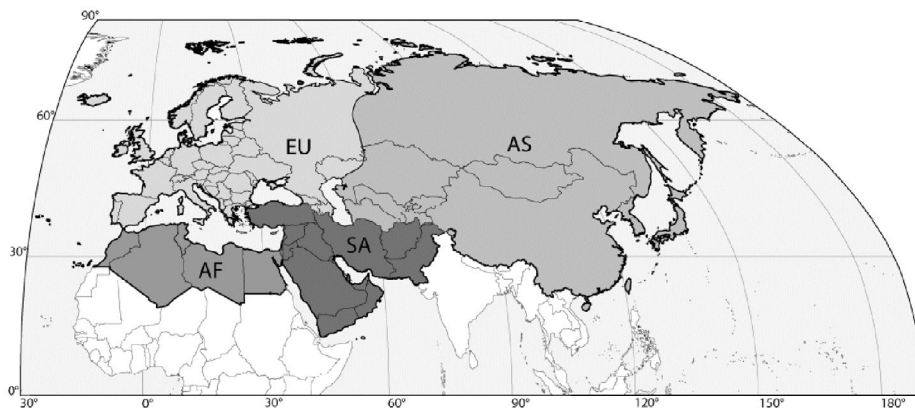
*Rationale of the catalogue*

The osmiine bees (Megachilidae, Osmiini), which comprise 20 genera and roughly 1100 species worldwide, occur on all continents except South America, Australia and Antarctica (Michener, 2000). They are especially diversified in mediterranean and desertic climates of southern Africa, southwestern North America and the Palaearctic. With 13 genera and about 600 described species the Palaearctic osmiine fauna is particularly diverse. The Osmiini are famous for their often spectacular and very diverse nest building behaviours as well as for their close relationships with flowering plants (Friese, 1923; Malyshev, 1937; Westrich, 1989; O'Toole and Raw, 1991; Müller *et al.*, 1997; Cane *et al.*, 2007; Praz *et al.*, 2008; Sedivy *et al.*, 2008). Several *Osmia* species in Europe (e.g., *O. cornuta*), Asia (e.g., *O. cornifrons*) and North America (e.g., *Osmia lignaria*) are commercially used to pollinate the flowers of fruit trees (Bosch and Kemp, 2002). The outstanding diversity with respect to both species number and biology renders the Osmiini a most suitable model group for the study of the evolution of nesting biology and flower preferences in bees in general. However, the taxonomy of the Palaearctic osmiine bees is currently in a poor state. Since the last comprehensive taxonomic treatment of the Osmiini more than a century ago (Ducke, 1900), many new species have been described and many names put into synonymy. Although several renowned bee taxonomists, such as T. Griswold, D.S. Peters, B. Tkalcu, K. Warncke and G. van der Zanden, revised some genera or subgenera, these revisions were mostly restricted to Europe or the western part of the Palaearctic. For many species-rich taxa (e.g., *Chelostoma*, *Heriades*, *Hoplitis* (*Anthocopa*), *Protosmia*) no modern revisions exist at all. Especially for those regions particularly rich in osmiine bee species (i.e., Turkey, the Middle East and Central Asia) a wealth of putative synonyms, unclear names and undescribed species seriously impede research on the osmiine bees. The present catalogue is intended as a first step to reduce this taxonomic impediment. By completely covering the widely dispersed and often inaccessible taxonomic literature as published to the end of 2006, a basis for future taxonomic work is laid. Since this catalogue is the result of a literature survey rather than our own revisionary work, we generally refrain from proposing new synonyms, new names, new ranks or new combinations. Catalogue and index go hand in hand: the account of every valid name in the catalogue is intended to provide a concise taxonomic history of that name, whereas the index provides access to all names including those not retained as valid. If the acceptance of a particular species or subspecies is contentious in the published literature, we generally follow the most recent opinion. However, we strive to disclose disagreeing concepts under the relevant taxon account in the catalogue. As a general backbone for the presented species data, we use the generic and subgeneric system proposed by Michener (2000), which in turn is based in part on Griswold (1985) and Griswold and Michener (1998). We slightly deviate from this system by following European authors in their circumscription of *Osmia* (*Allosmia*) versus *Osmia* (*Erythrosmia*). In addition, we keep *Hoplitis* (*Micreriades*) as a distinct subgenus separated from *Hoplitis* (*Alcidamea*) and treat *Nasutosmia* as a subgenus of *Osmia* rather than of *Hoplitis*. These three deviations are justified by morphological characters and by preliminary results of a molecular phylogenetic study of the Osmiini (C. Praz, A. Müller, B. Danforth, T. Griswold, A. Widmer and S. Dorn, unpublished). The assignment of the Palaearctic osmiine species to genus and subgenus rests upon our own taxonomic knowledge, recently published revisions or the original species descriptions, but not on the examination of the type specimens. The tribal classification of the extinct bee species follows Engel (2005). The distributional data given for each taxon are based on the surveyed literature supplemented with considerable unpublished data derived from our osmiine bee database. Literature data were excluded if there was a well-founded suspicion that the species identification was incorrect. Distributional data that are assumed to be doubtful (i.e., deserving confirmation) are indicated with a question mark. Many tentatively accepted taxa of this catalogue will probably prove to be synonyms when more specimens become available for study. On the other hand, many osmiine species still await description or discovery. Similarly, given the difficulties in identifying osmiine bees due to the poor taxonomic state and the lack of comprehensive keys, the current distributional data are expected to be incomplete and to contain errors. Future updates of this cata-

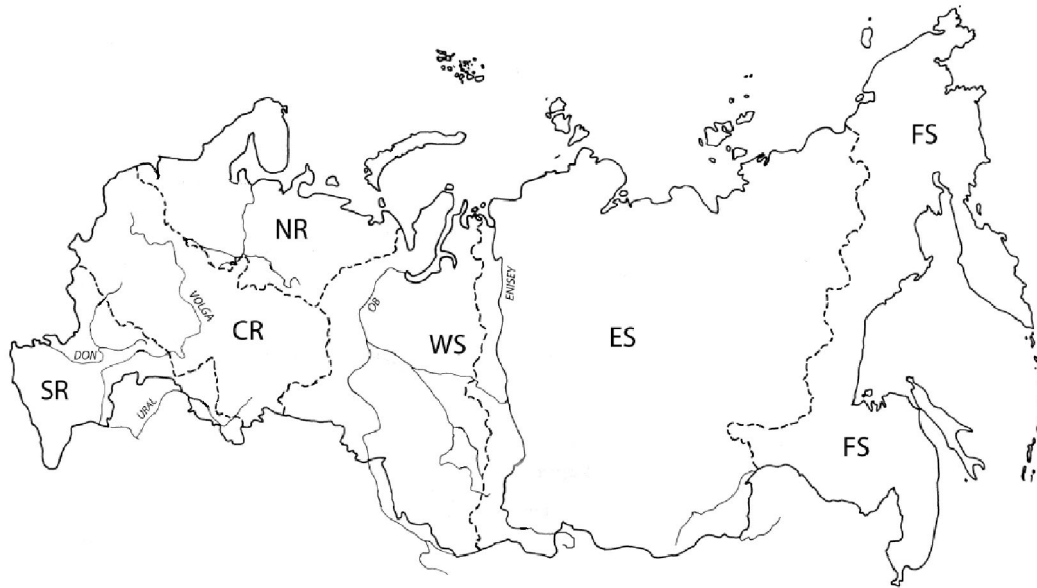
logue including corrections and additions will be provided on the webpage of the Entomological Collection at the ETH Zurich. While the majority of users will be more or less familiar with taxonomic customs, we nevertheless anticipate many to be unsure about the precise meaning of the nomenclatural terminology. Hence, we provide initial paragraphs on the sources and presentation of the catalogue as well as of the terms and conventions applied. This study, which includes fossil taxa, is the first comprehensive catalogue for the Palaearctic osmiine bees since the monumental work of Dalla Torre (1896). We aim to provide a concise but comprehensive taxonomic compendium that both facilitates exchange of information between researchers and stimulates further taxonomic research in the Osmiini—an important and most fascinating group of bees.

### *Scope of the catalogue*

This catalogue of the Palaearctic bees of the tribe Osmiini covers all included ranks in the family group, genus group and species group published by the end of 2006. Its scope largely follows the scope proposed for the now defunct Catalogue of Palaearctic Hymenoptera project (Papp, 1985), which has been adopted by several smaller-scale catalogues in the meantime. The Palaearctic faunal region comprises the main continental landmasses of temperate Eurasia, the Arabian Peninsula and northern Africa, as well as peripheral archipelagos such as the Azores in the west and Japan to the east. For pragmatic reasons, the precise delimitation of the Palaearctic region applied in this catalogue as well as the classification into the four rather artificial subregions Europe, Northern Africa, Northern Asia and Southwestern Asia (Figure 1) and the assessed geographical units listed in Table 1 are mainly political. However, biogeographically isolated island groups such as the Canary Islands are recorded separately, even if they are not politically independent. As a shorthand we apply the widely used international license plate codes for the areas representing independent countries (Table 1). Following Lelej (2002), the large areas of Russia (RUS) and China (RC) were additionally subdivided into six and seven areas respectively (Figure 2, 3). Similarly, isolated islands or archipelagos were also attributed distinct codes as for instance E(Ca) for the Canary Islands, politically part of Spain (E). Spelling of the standardized geographical entities conforms to the Times Comprehensive Atlas of the World (11<sup>th</sup> edn, 2003). The current country of historical type collection localities was inferred by reference to the Times Atlas of World History (4<sup>th</sup> edn, 1993) in cases of doubt. We treat all indigenous taxa known to occur in this region. Most problematic in this respect are the transition zone of the Himalayan range and southern China. There are several taxa described from northwestern India (e.g., *Noteriades himalayensis* GUPTA) not yet recorded from the Palaearctic zone as adopted in this catalogue but which might be expected to occur there (Gupta, 1993). Following the main catalogue we provide a list of the described fossil taxa placed in the Osmiini, even though the correct tribal, let alone generic identification based on fragmentary evidence, is often doubtful. Indeed, several extinct taxa have changed their placement within the Osmiini over the last decade. These taxa are listed and briefly discussed under *Incertae sedis* in the fossil taxa section.



**FIGURE 1.** Map of the Palaearctic region and its four subregions as used in this catalogue. **EU:** Europe. **AF:** Northern Africa. **AS:** Northern Asia. **SA:** Southwestern Asia.



**FIGURE 2.** Map of Russia and its six subunits as used in this catalogue. **SR:** Southern European Russia. **CR:** Central European Russia. **NR:** Northern European Russia. **WS:** Western Siberia. **ES:** Eastern Siberia. **FS:** Far Eastern Siberia. Map adapted from Lelej (2002).



**FIGURE 3.** Map of China (excluding Taiwan) and its seven subunits as used in this catalogue. **NW:** Northwestern China. **NO:** Northern China. **NE:** Northeastern China. **WP:** Western Chinese Plateau. **SW:** Southwestern China. **CE:** Central China. **SE:** Southeastern China. Map adapted from Lelej (2002).



**TABLE 1.** Geographic areas as used in this catalogue with their abbreviations and acronyms in bold: biogeographic regions of the world, subregions of the Palearctic (see Figure 1) and countries of the Palearctic with distinguished sub-units and islands and with the assigned subregional placement in parentheses.

<i>Biogeographic regions of the world</i>		<b>E(Ca)</b> (AF)	Canary Islands
		<b>EST</b> (EU)	Estonia
<b>Afr</b>	Afrotropic	<b>ET</b> (AF)	Egypt
<b>Aus</b>	Australian	<b>F</b> (EU)	France
<b>Nea</b>	Nearctic	<b>F(Co)</b> (EU)	Corsica
<b>Neo</b>	Neotropic	<b>FIN</b> (EU)	Finland
<b>Ori</b>	Oriental	<b>FL</b> (EU)	Liechtenstein
<b>Pal</b>	Palearctic	<b>GB</b> (EU)	United Kingdom
		<b>GE</b> (EU)	Georgia
		<b>GR</b> (EU)	Greece
<i>Subregions of the Palearctic</i>		<b>GR(Cr)</b> (EU)	Crete
		<b>H</b> (EU)	Hungary
<b>AF</b>	Northern Africa	<b>HR</b> (EU)	Croatia
<b>AS</b>	Northern Asia	<b>I</b> (EU)	Italy
<b>EU</b>	Europe	<b>I(Sa)</b> (EU)	Sardinia
<b>SA</b>	Southwestern Asia	<b>I(Si)</b> (EU)	Sicily
		<b>IL</b> (SA)	Israel and Palestine
		<b>IR</b> (SA)	Iran
<i>Countries of the Palearctic</i>		<b>IRL</b> (EU)	Ireland
		<b>IRQ</b> (SA)	Iraq
<b>A</b> (EU)	Austria	<b>IS</b> (EU)	Iceland
<b>AFG</b> (SA)	Afghanistan	<b>J</b> (AS)	Japan
<b>AL</b> (EU)	Albania	<b>JOR</b> (SA)	Jordan
<b>AND</b> (EU)	Andorra	<b>KP</b> (AS)	North Korea
<b>ARM</b> (EU)	Armenia	<b>KS</b> (AS)	Kyrgyzstan
<b>AZ</b> (EU)	Azerbaijan	<b>KWT</b> (SA)	Kuwait
<b>B</b> (EU)	Belgium	<b>KZ</b> (EU)/(AS)	Kazakhstan
<b>BG</b> (EU)	Bulgaria	<b>L</b> (EU)	Luxembourg
<b>BIH</b> (EU)	Bosnia and Herzegovina	<b>LAR</b> (AF)	Libya
<b>BRN</b> (SA)	Bahrain	<b>LT</b> (EU)	Lithuania
<b>BY</b> (EU)	Belarus	<b>LV</b> (EU)	Latvia
<b>CH</b> (EU)	Switzerland	<b>M</b> (EU)	Malta
<b>CY</b> (SA)	Cyprus	<b>MA</b> (AF)	Morocco
<b>CZ</b> (EU)	Czech Republic	<b>MD</b> (EU)	Moldova
<b>D</b> (EU)	Germany	<b>MGL</b> (AS)	Mongolia
<b>DK</b> (EU)	Denmark	<b>MK</b> (EU)	Macedonia
<b>DK(Fa)</b> (EU)	Faroe Islands	<b>N</b> (EU)	Norway
<b>DZ</b> (AF)	Algeria	<b>NL</b> (EU)	Netherlands
<b>E</b> (EU)/(AF)	Spain	<b>OM</b> (SA)	Oman
<b>E(Ba)</b> (EU)	Balearic Islands	<b>P</b> (EU)/(AF)	Portugal

.....continued



TABLE 1 (continued)

<b>P(Az)</b> (EU)	Azores	<b>RUS(NR)</b> (EU)	Northern European Russia
<b>P(Ma)</b> (AF)	Madeira	<b>RUS(SR)</b> (EU)	Southern European Russia
<b>PAK</b> (SA)	Pakistan	<b>RUS(WS)(AS)</b>	Western Siberia
<b>PL</b> (EU)	Poland	<b>S</b> (EU)	Sweden
<b>Q</b> (SA)	Qatar	<b>SA</b> (SA)	Saudi Arabia
<b>RC</b> (AS)	China	<b>SCG</b> (EU)	Serbia and Montenegro
<b>RC(CE)</b> (AS)	Central China	<b>SK</b> (EU)	Slovakia
<b>RC(NE)</b> (AS)	Northeastern China	<b>SLO</b> (EU)	Slovenia
<b>RC(NO)</b> (AS)	Northern China	<b>SYR</b> (SA)	Syria
<b>RC(NW)</b> (AS)	Northwestern China	<b>TJ</b> (AS)	Tajikistan
<b>RC(SE)</b> (AS)	Southeastern China	<b>TM</b> (AS)	Turkmenistan
<b>RC(SW)</b> (AS)	Southwestern China	<b>TN</b> (AF)	Tunisia
<b>RC(WP)</b> (AS)	Western Chinese Plateau	<b>TR</b> (EU)/(AS)	Turkey
<b>RL</b> (SA)	Lebanon	<b>TW</b> (AS)	Taiwan
<b>RO</b> (EU)	Romania	<b>UA</b> (EU)	Ukraine
<b>ROK</b> (AS)	South Korea	<b>UAE</b> (SA)	United Arab Emirates
<b>RUS</b> (EU)/(AS)	Russia	<b>UZ</b> (AS)	Uzbekistan
<b>RUS(CR)</b> (EU)	Central European Russia	<b>Y</b> (SA)	Yemen
<b>RUS(ES)</b> (AS)	Eastern Siberia	<b>Y(So)</b> (SA)	Slovenia
<b>RUS(FS)</b> (AS)	Far Eastern Siberia		

Additionally, the following more loosely defined or border-crossing geographic terms—covering certain mountain ranges, peninsulas and deserts—are used if a current country could not be attributed with certainty to the locality information given in the literature:

<b>Arabia</b> (SA)	for “Arabian Peninsula”, “Arabie”, “Arabien”
<b>Balkans</b> (EU)	for “Balkanhalbinsel”, “Balkans”, “Dalmatia”, “Jugoslawien”, “Yugoslavia”
<b>Caucasus</b> (EU)	for “Caucasus”, “Kaukasus”, “Transcaucasia”, “Transkaukasien”
<b>Central Asian Ranges</b> (AS)	for “Hindu Kush”, “Karakoram”, “Pamir”, “Tien Shan”
<b>Korea</b> (AS)	for “Corée”, “Korea”, “Korean Peninsula”
<b>Sahara</b> (AF)	for “North African Desert”, “Sahara”
<b>Turkestan</b> (AS)	for “Central Asia”, “Karakum Desert”, “Kyzylkum Desert”, “Mittelasien”, “Transcaspia”, “Turcestanica”, “Turkestan”

### Placement and classification of the Osmiini

This section briefly discusses the monophyletic taxa the osmiine bees are nested in from the superfamilial down to the tribal level (Table 2). The classification of bees has been in constant evolution since Linnaeus who recognized a single genus *Apis* covering all bees. While adopting the recent classification of Michener (2000), we emphasise that due to the instability of higher-level taxa much relevant information pertaining to what we now consider osmiine bees can be found under a wide variety of suprageneric names in past publications. In Table 3 we thus provide a chronological overview of the differing placements of the corresponding bee taxa within the seminal taxonomic publications. The figures for the number of currently known taxa as

given below largely follow Michener (2000) and Pulawski (2006) and refer to extant taxa only. Note that differing classifications may lead to very different figures of valid families and genera.

**TABLE 2.** Placement of the Osmiini within the Apoidea based on Michener (2000) for the extant and Engel (2005) for the extinct taxa respectively. Included is furthermore the recently described fossil family Melittosphecidae (Poinar & Danforth, 2006). Spheciformes being demonstrably paraphyletic is given between quotation marks. † denotes exclusively fossil taxa.

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Digger wasps and bees	Superfamily <b>Apoidea</b> LATREILLE, 1802
	Series "Spheciformes"
Bees	Series <b>Apiformes</b>
	† Family Melittosphecidae POINAR & DANFORTH, 2006
	† Family Paleomelittidae ENGEL, 2001
	Family Stenotritidae COCKERELL, 1934
	Family Colletidae LEPELETIER, 1841
	Family Andrenidae LATREILLE, 1802
	Family Halictidae THOMSON, 1869
	Family Melittidae SCHENCK, 1860
	Family Apidae LATREILLE, 1802
Megachilid bees	Family <b>Megachilidae</b> LATREILLE, 1802
	Subfamily Fideliinae COCKERELL, 1932
	Subfamily <b>Megachilinae</b> LATREILLE, 1802
	† Tribe Glyptapini COCKERELL, 1909
	† Tribe Ctenoplectrellini ENGEL, 2001
	Tribe Lithurgini NEWMAN, 1834
	Tribe Anthidiini ASHMEAD, 1899
	Tribe Dioxyini COCKERELL, 1902
	Tribe Megachilini LATREILLE, 1802
Osmiine bees	Tribe <b>Osmiini</b> NEWMAN, 1834
	Subtribe Heriadina MICHENER, 1941
	Subtribe Osmiina NEWMAN, 1834

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**TABLE 3.** Chronological review of the accepted name and rank for bees as a whole as well as of the different suprageneric placements of the bee species and genera accepted as Osmiini in this catalogue. Only seminal works are listed here, ranging from Linnaeus (1758), the starting point of zoological nomenclature, to Michener (2000), the baseline work for this catalogue, as well as two very recent classifications.

Author	Bees	Rank			
	Name [specified rank]	Suprafamilial	Familial	Infraclassical	Tribal
<b>Linnaeus (1758)</b>	<i>Apis</i> [genus]	—	—	—	—
<b>Latreille (1802)</b>	—	Apiariae (Apiariae)	Megachiles	—	—
<b>Leach (1815)</b>	—	Apidae	—	—	—
<b>Lepeletier (1835, 1841)</b>	—	Solitary nesting bees	Gastrilegides	—	—
<b>Schenck (1861, 1869)</b>	—	—	—	Megachilidae	—
<b>Thomson (1872)</b>	Apidae [family]	—	Apidae	Solitariae	Megachilina
<b>Schmiedeknecht (1882)</b>	Apidae [family (sic)]	Gastrilegidae (Dasygastrae)	Megachilidae	—	—
<b>Taschenberg (1883)</b>	Anthophila	Anthophila	Apidae	Dasygastrae	—
<b>Dalla Torre (1896)</b>	Apidae [family]	—	Apidae	Megachilinae	—
<b>Ashmead (1899)</b>	Apoidea [superfamily]	Apoidea	Megachilidae	Osmiinae (Mason Bees)	—
<b>Robertson (1903, 1904)</b>	Anthophila	Apygidialia: Trypetoidea	Megachilidae	Osmiinae	Osmiini, Trypetini
<b>Friese (1911)</b>	Apidae [family]	—	Apidae	Megachilinae	—
<b>Börner (1919)</b>	Apidina (Anthophila) [superfamily]	Apidina (Anthophila)	Megachilidae	Osmiinae	—
<b>Schmiedeknecht (1930)</b>	Apidae (Anthophila) [family]	—	Apidae (Anthophila)	Megachilinae	—
<b>Michener (1941)</b>	—	—	Megachilidae	Osmiinae	Heriadini, Osmiini
<b>Michener (1944)</b>	—	—	Megachilidae	Megachilinae	Megachilini
<b>Warncke (1977)</b>	Apoidea [superfamily]	Apoidea	Apidae	Megachilinae	—
<b>Warncke (1986)</b>	Apidae [family]	—	Apidae	Megachilinae	—
<b>Michener (1979)</b>	—	—	Megachilidae	Megachilinae	Megachilini
<b>Michener (2000)</b>	Apiformes ['series']	Apoidea	Megachilidae	Megachilinae	Osmiini
<b>Engel (2005)</b>	Anthophila ['section']	Apoidea	Megachilidae	Megachilinae	Osmiini
<b>Melo &amp; Gonçalves (2005)</b>	Apidae [family]	—	Apidae	Megachilinae	Osmiini

Superfamily **Apoidea**

Worldwide 11 families, 691 genera, 25,874 species

**Apoidea** LATREILLE, 1802. Originally published in Latreille (1802a: 425) as Apiariae. Apoidea has priority over Sphecoidea published later the same year in Latreille (1802b: 331) as Sphégimae (Michener, 1986). Type genus: *Apis* LINNAEUS, 1758. Combining stem: Ap-.

Apoidea are a monophyletic and cosmopolitan group of aculeate Hymenoptera composed of the bees and the digger wasps (sphecid, sphecid or apoid wasps) (Michener, 2000). Throughout most of the 20<sup>th</sup> century, the digger wasps were usually treated as a single family Sphecidae believed to represent the sister group of the bees (Michener, 1944; Brothers, 1975; Bohart and Menke, 1976). However, in several recent studies they have been shown to be clearly paraphyletic with respect to the bees (Lomholdt, 1982; Alexander, 1990, 1992; Prentice, 1998; Melo 1999). For this reason, they have been divided into up to nine families by raising traditional subfamilies to family rank (Finnamore, 1993), but following new cladistic analyses a classification with only four families is currently favoured with the Crabronidae as sister to the monophyletic bees (Prentice, 1998; Brothers, 1999; Melo 1999). The superfamily can be distinguished morphologically by the striking synapomorphy of the pronotum being remote from the tegulae, a character which strongly links digger wasps and bees and separates them from the remaining aculeate hymenopterans (Gauld and Bolton, 1988).

Series **Apiformes**

Worldwide 7 families, 425 genera, 16,325 species

**Apiformes** is an unavailable, informally ranked name used for instance by Michener (1993, 2000). Engel (2005) gives preference to the name Anthophila over Apiformes.

With an estimated 20,000 to 30,000 species worldwide when including undescribed taxa (Michener, 2000), bees are by far the most species-rich aculeate group. Traditionally, bees have been treated as one family Apidae. To this day, many entomologists prefer the one-family classification (e.g., Lomholdt, 1982; Gauld and Bolton, 1988; Griswold *et al.*, 1995; Brothers, 1999; Melo and Gonçalves, 2005) as the bees are perceived as a highly homogeneous, albeit species-rich taxon. Later, several authors treated the bees as a superfamily Apoidea with up to 11 separate families (Michener, 1965; O'Toole and Raw, 1991) or as an informally ranked series Apiformes (Michener, 1993, 2000). Currently, Michener (2000) classifies the extant bees in seven families (Stenotritidae, Colletidae, Andrenidae, Halictidae, Melittidae, Megachilidae and Apidae) and some 1,200 different genera and subgenera. Two other bee families (Paleomelittidae and Melittosphecidae) are known only from the fossil record (Engel, 2001; Poinar and Danforth, 2006). Bees are believed to have evolved from predatory sphecid wasps. Morphologically, they represent a rather uniform lineage that uses pollen plus nectar or floral oils instead of paralysed insect or spider prey as protein source for their larvae. Indeed, many of the morphological characteristics of bees are probably a result of adaptations to the collection of these plant products. Bees are morphologically distinguishable from the digger wasps by the presence of branched or plumose hairs and by the enlarged basitarsi of the hind legs which are wider than the following tarsomeres. Bees are particularly diverse in dry and warm climates such as the Mediterranean basin, Central Asia, southern Africa and southwestern North America (Michener, 1979).

Family **Megachilidae**

Worldwide 95 genera, 3170 species

**Megachilidae** LATREILLE, 1802. Originally published by Latreille (1802b: 381) as Megachiles. Type genus: *Megachile* LATREILLE, 1802. Combining stem: Megachil-.

Traditionally, all bees were considered to belong to one large family, Apidae, and the megachilid bees were recognized at subfamily rank as Megachilinae (Gauld and Bolton, 1988). However, as indicated above, in recent years the traditional bee subfamilies have been elevated in rank and the megachilid bees are now widely considered to represent a distinct family formerly divided into the subfamilies Lithurginae and Mega-

chilinae (Michener, 1993) or, more recently, into the subfamilies Fideliinae and Megachilinae (Michener, 2000). The megachilid bees are one of the largest families of bees, represented in all six zoogeographic regions. They belong together with the Apidae to the long-tongued bees, which are characterized by the first two segments of the labial palpi being distinctly elongated and flattened. Morphologically, megachilid bees are perhaps the most uniform, distinct and hence easily recognizable family within the bees (Krombein *et al.*, 1979), but the inclusion of the Fideliinae renders the family more difficult to circumscribe (Roig-Alsina and Michener, 1993). Apart from specimens of the latter subfamily, megachilid bees are usually recognized in the field by their generally stout habitus and their large and almost quadrate head. Important diagnostic characters of the family are: (1) labrum rectangular, longer than wide and broadly articulated to the clypeus; (2) female scopa restricted to the underside of the metasoma; (3) subantennal sutures directed towards the outer margin of the antennal sockets (towards the middle in the Fideliinae); and (4) forewing with two submarginal cells (three in the Fideliinae). In the relatively few studies which analyzed the immature stages of the family (e.g., Rozen, 1973; McGinley, 1989), the megachilid bees again turned out to be a reasonably distinct group, characterized for example by the elongate, conspicuous body setae of the larvae (McGinley, 1987).

### Subfamily **Megachilinae**

Worldwide 92 genera, 3153 species

**Megachilinae** LATREILLE, 1802. Originally published by Latreille (1802b: 381) as Megachiles. Type genus: *Megachile* LATREILLE, 1802. Combining stem: Megachil-.

The subfamily Megachilinae comprises two extinct and five extant tribes (Michener, 2000; Engel, 2005). Among the recent tribes, the Lithurgini were consistently found to be sister to the other four tribes (e.g., Roig-Alsina and Michener, 1993), whereas the phylogenetic relationships of the latter were not resolved. The Megachilinae differ from the Fideliinae by (1) the presence of two submarginal cells, (2) the broad female mandibles with three or more teeth (except in the Dioxyini), (3) the absence of a pygidial plate (except in the Lithurgini where this structure is unusual), (4) the subantennal sutures directed towards the outer margin of the antennal sockets and (5) the characteristic stout and thick-headed appearance.

### Tribe **Osmiini**

Worldwide 20 genera, 1077 species

**Osmiini** NEWMAN, 1834. Originally published by Newman (1834: 401) as Osmiites. Type genus: *Osmia* PANZER, 1806. Combining stem: Osmi-.

Though the phylogenetic relationships of the Megachilinae tribes are not resolved with the exception of the Lithurgini, which are assumed to be sister to the remaining tribes, future studies might reveal a close relationship between the Megachilini and the Osmiini (Peters, 1972). The osmiine bees differ from most megachiline bees by the presence of a well-developed arolium, a pad-like median lobe between the tarsal claws of each leg, and the occurrence of metallic colours in some groups. However, while the tribe Megachilini is morphologically rather well defined, the tribe Osmiini is less clearly so. Indeed, morphological synapomorphies unequivocally demonstrating the monophyly of the Osmiini have remained elusive. Consequently, several authors suspected the tribe to be potentially paraphyletic with respect to the Megachilini and possibly also to the Anthidiini and Dioxyini (Engel, 1999, 2001; Michener, 2000). However, preliminary results of phylogenetic analyses using molecular markers indicate that at least the core genera of the Osmiini (*Ashemadiella*, *Atoposmia*, *Chelostoma*, *Haetosmia*, *Heriades*, *Hofferia*, *Hoplitis*, *Hoplosmia*, *Osmia*, *Othinosmia*, *Protosmia* and *Wainia*) represent a monophylum (C. Praz, A. Müller, B. Danforth, T. Griswold, A. Widmer and S. Dorn, unpublished). The placement of several small genera (*Afroheriades*, *Bekilia*, *Noteriades*, *Ochreriades* and *Pseudoheriades*) within the Osmiini, on the other hand, has to be regarded as tentative (Griswold, 1985; Michener, 2000). Many authors divide the Osmiini into two groups (Michener, 1941; Griswold, 1985; Griswold and Michener, 1998), which are treated as subtribes Heriagina and Osmiina in the present catalogue

(Table 4). However, as some genera, in particular *Protosmia*, *Othinosmia* or *Chelostoma*, show intermediate characters, these two groups are difficult to define accurately. Future phylogenetic studies are needed to elucidate the phylogenetic relationships of these genera. On a worldwide scale, Michener (2000) groups the extant osmiine bees in 20 different genera and 71 non-nominotypical subgenera (excl. *Micreriades*, see above) comprising nearly 1100 species including the still undescribed ones (Table 5). In the Palaearctic, 13 genera, 43 non-nominotypical subgenera (incl. *Micreriades*) and about 600 described species occur. Though we use the generic and subgeneric system of Michener (2000) as a backbone for this catalogue, we nevertheless emphasize that several authors have different views regarding the subdivision of the palaearctic osmiine bees into genera and subgenera. Among the more recent authors, Westrich and Dathe (1997) treat all osmiine bees as representatives of the single genus *Osmia*. Similarly, Warncke (1977–1992) solely accepts two genera, *Osmia* and *Bytinskia*, the latter containing a few cleptoparasitic species only. While the generic systems of Tkalcu (1967–2000) and Zanden (1958–1998) are very close to that of Michener (2000), notable differences with respect to the circumscription of the subgenera exist.

**TABLE 4.** Subtribal placement of the Osmiini genera of the world according to Michener (2000) with their indigenous distribution in the six biogeographic regions: Palaearctic (Pal), Nearctic (Nea), Afrotropic (Afr), Oriental (Ori), Neotropic (Neo), Australian (Aus). + present, (+) only marginally distributed in this region, – absent. Recent anthropogenic introductions were not considered for this table.

Taxon	Biogeographic region					
	Pal	Nea	Afr	Ori	Neo	Aus
<b>Osmiini</b>	+	+	+	+	(+)	–
<b>Osmiina<sup>1</sup></b>						
<i>Ashmeadiella</i> COCKERELL	–	+	–	–	(+)	–
<i>Atoposmia</i> COCKERELL	–	+	–	–	–	–
<i>Chelostoma</i> LATREILLE <sup>2</sup>	+	+	–	(+)	–	–
<i>Haetosmia</i> POPOV	+	–	(+)	–	–	–
<i>Hoplitis</i> KLUG	+	+	+	(+)	–	–
<i>Hoplosmia</i> THOMSON	+	–	–	–	–	–
<i>Ochreriades</i> MAVROMOUSTAKIS	+	–	+	–	–	–
<i>Osmia</i> PANZER	+	+	–	(+)	(+)	–
<i>Stenosmia</i> MICHENER	+	–	–	–	–	–
<i>Wainia</i> TKALCU	+	–	+	(+)	–	–
<b>Heriadinina<sup>1</sup></b>						
<i>Afroheriades</i> PETERS	–	–	+	–	–	–
<i>Bekilia</i> BENOIST <sup>3</sup>	–	–	+	–	–	–
<i>Heriades</i> SPINOLA	+	+	+	+	(+)	–
<i>Hofferia</i> TKALCU	+	–	–	–	–	–
<i>Noteriades</i> COCKERELL	–	–	+	+	–	–
<i>Othinosmia</i> MICHENER <sup>4</sup>	–	–	+	–	–	–
<i>Protosmia</i> DUCKE <sup>4</sup>	+	(+)	–	(+)	–	–
<i>Pseudoheriades</i> PETERS	+	–	+	+	–	–
<i>Stenoheriades</i> TKALCU	+	–	+	–	–	–
<i>Xeroheriades</i> GRISWOLD	–	+	–	–	–	–

<sup>1</sup> The two subtribes were also called *Osmia* genus-group and *Heriades* genus-group in Griswold (1985) and later *Osmia* group and *Heriades* group in Griswold & Michener (1998).

<sup>2</sup> The genus *Chelostoma* has traditionally been considered close to (e.g., Michener, 1941) or even identical with (e.g., Friese, 1911b) *Heriades* in the subtribe Heriadinina but it is now regarded as close to *Hoplitis* (*Alcidamea*) (Griswold, 1985; Griswold & Michener, 1998; Michener, 2000).

<sup>3</sup> *Bekilia*, a monotypic genus with uncertain affinities due to the lost type material, may belong to the Anthidiini close to *Afrostelis* rather than to the Osmiini (Griswold & Michener, 1998; Michener, 2000).

<sup>4</sup> Morphologically, the genera *Othinosmia* and *Protosmia* are intermediate and show relationships to both subtribes (Michener, 2000).

**TABLE 5.** Genera and subgenera of the Osmiini with the estimated number of extant species based on Michener (2000) and the present catalogue. Number of undescribed species in parentheses.

Taxon Genus and Subgenus	Species richness	
	Worldwide	Palearctic
<i>Afroheriades</i> PETERS	5 (+3)	-
<i>Ashmeadiella</i> COCKERELL	56	-
<i>Arogochila</i> MICHENER	18	-
<i>Ashmeadiella</i> COCKERELL	33	-
<i>Chilosima</i> MICHENER	2	-
<i>Cubitognatha</i> MICHENER	1	-
<i>Isosmia</i> MICHENER & SOKAL	2	-
<i>Atoposmia</i> COCKERELL	28	-
<i>Atoposmia</i> COCKERELL	12	-
<i>Eremosmia</i> MICHENER	14	-
<i>Hexosmia</i> MICHENER	2	-
<i>Bekilia</i> BENOIST	1	-
<i>Chelostoma</i> LATREILLE	52	43
<i>Ceraheriades</i> TKALCU	5	5
<i>Chelostoma</i> LATREILLE	12	12
<i>Eochelostoma</i> GRISWOLD	1	1
<i>Foveosmia</i> WARNCKE	26	18
<i>Gyrodromella</i> MICHENER	7	7
<i>Prochelostoma</i> ROBERTSON	1	-
<i>Haetosmia</i> POPOV	3	3
<i>Heriades</i> SPINOLA	110 (+24)	22
<i>Amboheriades</i> GRISWOLD	11	-
<i>Heriades</i> SPINOLA	45	9
<i>Michenerella</i> KROMBEIN	33 (+?)	12
<i>Neotrypetes</i> ROBERTSON	13 (+10)	-
<i>Pachyheriades</i> GRISWOLD	5 (+5)	-
<i>Rhopaloheriades</i> GRISWOLD	1	1
<i>Toxeriades</i> GRISWOLD	1 (+3)	-
<i>Tyttheriades</i> GRISWOLD	1 (+6)	-
<i>Hofferia</i> TKALCU	2	2
<i>Hoplitis</i> KLUG	348 (+2)	282
Subgeneric placement uncertain	1	1
<i>Acrosmia</i> MICHENER	3	-
<i>Alcidamea</i> CRESSON	60	51
<i>Annosmia</i> WARNCKE	31	31

.....continued



TABLE 5 (continued)

Taxon	Species richness	
	Worldwide	Palaeartic
<i>Anthocopa</i> LEPELETIER & SERVILLE	79	66
<i>Bytinskia</i> MAVROMOUSTAKIS	3 (+1)	3
<i>Chlidoplitis</i> GRISWOLD	7	7
<i>Coloplitis</i> GRISWOLD	2	2
<i>Cyrtosmia</i> MICHENER	1	-
<i>Dasyosmia</i> MICHENER	2	-
<i>Eurypariella</i> TKALCU	2 (+1)	2
<i>Exanthocopa</i> TKALCU	1	1
<i>Formicapis</i> SLADEN	3	3
<i>Hoplitina</i> COCKERELL	6	-
<i>Hoplitis</i> KLUG	50	50
<i>Jaxartinula</i> POPOV	2	2
<i>Kumobia</i> POPOV	4	4
<i>Megahoplitis</i> TKALCU	1	1
<i>Megalosmia</i> SCHMIEDEKNECHT	7	7
<i>Micreriades</i> MAVROMOUSTAKIS	9	9
<i>Microhoplitis</i> TKALCU	2	2
<i>Monumetha</i> CRESSON	6	1
<i>Pentadentosmia</i> WARNCKE	23	23
<i>Penteriades</i> MICHENER & SOKAL	2	-
<i>Platosmia</i> WARNCKE	9	9
<i>Prionohoplitis</i> TKALCU	7	7
<i>Proteriades</i> TITUS	22	-
<i>Robertsonella</i> TITUS	3	-
<b><i>Hoplosmia</i> THOMSON</b>	<b>19</b>	<b>19</b>
<i>Hoplosmia</i> THOMSON	6	6
<i>Odontanthocopa</i> TKALCU	12	12
<i>Paranthocopa</i> TKALCU	1	1
<b><i>Noteriades</i> COCKERELL</b>	<b>9 (+6)</b>	-
<b><i>Ochreriades</i> MAVROMOUSTAKIS</b>	<b>2</b>	<b>1</b>
<b><i>Osmia</i> PANZER</b>	<b>319 (+1)</b>	<b>189</b>
Subgeneric placement uncertain	3	3
<i>Acanthosmioides</i> ASHMEAD	22	-
<i>Allosmia</i> TKALCU	10	10
<i>Cephalosmia</i> SLADEN	5	-
<i>Diceratosmia</i> ROBERTSON	4 (+1)	-
<i>Erythrosmia</i> SCHMIEDEKNECHT	4	4
<i>Euthosmia</i> SINHA	1	-
<i>Helicosmia</i> THOMSON	77	72
<i>Hemiosmia</i> TKALCU	7	7
<i>Melanosmia</i> SCHMIEDEKNECHT	109	20

.....continued

TABLE 5 (continued)

Taxon	Species richness	
	Worldwide	Palearctic
<i>Metallinella</i> TKALCU	1	1
<i>Monosmia</i> TKALCU	1	1
<i>Mystacosmia</i> SNELLING	1	-
<i>Nasutosmia</i> GRISWOLD & MICHENER	2	2
<i>Neosmia</i> TKALCU	8	8
<i>Orientosmia</i> PETERS	1	1
<i>Osmia</i> PANZER	25	23
<i>Ozbekosmia</i> ZANDEN	1	1
<i>Pyrosmia</i> TKALCU	30	30
<i>Tergosmia</i> WARNCKE	6	6
<i>Trichinosmia</i> SINHA	1	-
<b><i>Othinosmia</i></b> MICHENER	<b>13</b>	-
<i>Afrosmia</i> GRISWOLD	1	-
<i>Megaloheriades</i> PETERS	7	-
<i>Othinosmia</i> MICHENER	5	-
<b><i>Protosmia</i></b> DUCKE	<b>26</b>	<b>24</b>
Subgeneric placement uncertain	2	2
<i>Chelostomopsis</i> COCKERELL	3	2
<i>Dolichosmia</i> GRISWOLD	1	-
<i>Nanosmia</i> GRISWOLD	7	7
<i>Protosmia</i> DUCKE	13	13
<b><i>Pseudoheriades</i></b> PETERS	<b>8 (+3)</b>	<b>2</b>
<b><i>Stenoheriades</i></b> TKALCU	<b>10 (+6)</b>	<b>5</b>
<b><i>Stenosmia</i></b> MICHENER	<b>10</b>	<b>10</b>
<b><i>Wainia</i></b> TKALCU	<b>10</b>	<b>2</b>
<i>Caposmia</i> PETERS	5	2
<i>Wainia</i> TKALCU	3	-
<i>Wainiella</i> GRISWOLD	2	-
<b><i>Xeroheriades</i></b> GRISWOLD	<b>1</b>	-
Total number of genera	<b>20</b>	<b>13</b>
Total number of non-nominotypical subgenera	<b>72</b>	<b>43</b>
Total number of species	<b>1032 (+45)</b>	<b>604</b>

According to our present knowledge (Friese, 1923; Malyshev, 1937; Krombein, 1967; Westrich, 1989; O'Toole and Raw, 1991; Müller *et al.*, 1997; Cane *et al.*, 2007), the majority of the Osmiini build their brood cells in preexisting cavities such as insect borings in dead wood, hollow plant stems, wall cracks or earth holes. Nesting in empty snail shells is widespread at least among the palaeartic osmiine bees and has probably independently evolved several times (Westrich, 1989; O'Toole and Raw, 1991; Müller, 1992, 1994). Other osmiine species excavate their brood cells in plant stems and rotten wood, dig them in the ground or glue them freely to stones, tree bark and similar substrates. As diverse as the nesting sites is the material used for brood cell construction. Depending on the species, brood cells consist of mud, pebbles, leaves, resin, flower petals, glandular secretions or mixtures of these products. Many osmiine bees are strictly dependent on certain plant species for pollen gathering (Krombein *et al.*, 1979; Westrich, 1989; Sedivy *et al.*, 2008). Among the Central European osmiine species, about 55% are supposed to be pollen specialists at the level of plant genus or plant family (Müller *et al.*, 1997). Important pollen sources for these oligolectic species are flowers of the Asteraceae, Fabaceae, Campanulaceae, Boraginaceae, Dipsacaceae and others. The intimate relationships of the osmiine bees to flowers is perhaps best exemplified by those species which are equipped with morphological tools on head or mouthparts for gathering pollen from anthers hidden below an upper lip or concealed within deep tubular flowers (Peters, 1974; Müller, 1995, 1996, 2006).

## Synopsis

### Taxonomic inventory of the Palaeartic Osmiini

#### *Historical development*

The first taxonomic treatment of the Palaeartic osmiine bees dates back to the end of the 19<sup>th</sup> century when Schmiedeknecht (1885–1886) provided the first monograph on the European representatives of the Osmiini. In 1896, Dalla Torre published his monumental catalogue of the Hymenoptera of the world, which is still an invaluable source for the taxonomic literature on the osmiine bees of the 18<sup>th</sup> and 19<sup>th</sup> century. The third landmark study in the taxonomic inventory of the Palaeartic Osmiini was the monograph of Ducke (1900) covering all Palaeartic species known by the end of the 19<sup>th</sup> century. With its extensive species descriptions and identification keys this monograph was the first comprehensive taxonomic treatment of the Palaeartic osmiine bees, and it has indeed remained the last up to this day. In the 20<sup>th</sup> century many new osmiine bee species were described and many names put into synonymy by taxonomists such as J.D. Alfken, R. Benoist, T.D.A. Cockerell, C. Ferton, H. Friese, T. Griswold, V. Haeseler, F.F. Kohl, G.A. Mavromoustakis, J. Pérez, D.S. Peters, V.B. Popov, E. Stanek, B. Tkalcu, K. Warncke, Y. Wu, G. van der Zanden and others. Though Griswold (1985) did not revise the *Heriades* group down to species level, he nevertheless included a list of all species belonging to this group. Zanden (1988b) summarized the taxonomic findings of these authors by providing a list of names of the Palaeartic osmiine species including synonyms and short distributional notes. Even though several taxa, such as *Chelostoma*, *Heriades*, *Hofferia*, *Protosmia* (*Chelostomopsis*) and *Stenoheriades*, were not addressed, this concise list represents the most recent synopsis of the Palaeartic osmiine bees. While a modern and comprehensive monograph covering all Palaeartic Osmiini is lacking, several osmiine genera or subgenera were partially or completely revised at species-group level. These revisions, which are generally restricted to Europe or the western part of the Palaeartic, are listed below for the different osmiine taxa.

*Revisions*

<i>Chelostoma</i>	Schletterer (1889)
<i>Chelostoma (Foveosmia)</i>	Warncke (1991c); Schwarz and Gusenleitner (2000)
<i>Haetosmia</i>	Peters (1974)
<i>Heriades</i>	Schletterer (1889)
<i>Hoplitis (Alcidamea)</i>	Warncke (1991h)
<i>Hoplitis (Annosmia)</i>	Warncke (1991e)
<i>Hoplitis (Bytinskia)</i>	Warncke (1991f)
<i>Hoplitis (Hoplitis)</i>	Morice (1901); Warncke (1992a)
<i>Hoplitis (Megalosmia)</i>	Warncke (1991h)
<i>Hoplitis (Pentadentosmia)</i>	Warncke (1991a)
<i>Hoplitis (Platosmia)</i>	Warncke (1990)
<i>Hoplitis (Prionohoplitis)</i>	Warncke (1991h)
<i>Hoplosmia</i>	Tkalcu (1974a)
<i>Ochreriades</i>	Griswold (1994b)
<i>Osmia (Helicosmia)</i>	Tkalcu (1975c); Warncke (1988a)
<i>Osmia (Hemiosmia)</i>	Tkalcu (1975b); Haeseler (2005)
<i>Osmia (Melanosmia)</i>	Tkalcu (1983)
<i>Osmia (Monosmia)</i>	Peters (1978a)
<i>Osmia (Neosmia)</i>	Tkalcu (1977a)
<i>Osmia (Orientosmia)</i>	Peters (1978a)
<i>Osmia (Osmia)</i>	Peters (1978a)
<i>Osmia (Pyrosmia)</i>	Zanden (1991a); Warncke (1992b)
<i>Osmia (Tergosmia)</i>	Warncke (1988b)
<i>Stenosmia</i>	Warncke (1991b)

*Current status and outlook*

In this catalogue, six available family-group names, 93 available genus-group names and 935 available species-group names are listed that currently split up into the valid names of two subtribes, 13 genera, 43 non-nominotypical subgenera, 604 species and 76 non-nominotypical subspecies. Starting with Linnaeus (1758), who described four osmiine bee species, a total of 99 mainly European taxonomists contributed to the available species-group names by the end of 2006. The taxonomists who described the highest number of species-group taxa are K. Warncke (99 valid names, 8 synonyms), F. Morawitz (73, 20), R. Benoist (52, 31), J. Pérez (51, 31), G. van der Zanden (52, 5), B. Tkalcu (52, 6), H. Friese (32, 14), Y. Wu (33, 0), G.A. Mavromoustakis (29, 3), J.D. Alfken (15, 9), V.B. Popov (16, 1) and D.S. Peters (16, 2). The most productive periods in terms of described osmiine species and subspecies were from 1870–1910 (207 valid names, 107 synonyms) and from 1970–2006 (264, 24), largely coincident with the creative careers of the above-mentioned taxonomists. The present situation of bee taxonomy of the Palaearctic region in general was discussed in some detail by Ebmer (1994) and O'Toole (1996), depicting a field in dire need of a coordinated effort to work up the old literature and close the innumerable gaps in our taxonomic knowledge. Unfortunately, the taxonomy of the Palaearctic osmiine bees is not in a better state than bee taxonomy in general. This is best exemplified by the fact that for 154 Palaearctic osmiine species (25% of the total) only one sex is currently known, as well as by the high number of species descriptions based solely on a single specimen. It must be expected that many tentatively accepted osmiine bee taxa of this catalogue will prove to be synonyms once more specimens become available for study. On the other hand, there exist many undescribed osmiine species and others undoubtedly

still await discovery. In addition, single osmiine species will certainly prove to represent multiple species complexes with the application of molecular methods (Packer and Taylor, 1997). Some osmiine genera and subgenera have been revised at species-group level (see above). However, most of these revisions only treat part of the taxon in question or are geographically limited. For other taxa, no recent revisions exist at all. Among the osmiine taxa most urgently needing revisional work are *Chelostoma*, *Heriades*, *Hoplitis* (*Hoplitis*), *Hoplitis* (*Anthocopa*) and *Protosmia* as well as some species groups within *Osmia* (*Helicosmia*). The present catalogue, which covers the taxonomic literature as published by the end of 2006, reflects the current taxonomic knowledge on the osmiine bees of the Palaearctic. It will also be available as an online version on the webpage of the Entomological Collection at the ETH Zurich. This online version will be regularly updated by including corrections and incorporating new taxonomic findings.

### Faunistic inventory of the Palaearctic Osmiini

Regional faunal works covering parts of the Palaearctic bees are rich and varied. They range from the most basic checklist (e.g., Romasenko, 1995b) to very detailed accounts (e.g., Westrich, 1989). The following list indicates those recent publications (generally published after 1950), which contain at least a nominally complete checklist of Osmiini taxa known from a region, island, country or substantial part of a large country. Many of these references also include keys, illustrations, distribution maps, or more or less detailed species accounts with ecological information. They are arranged in chronological order for each geographical entity.

#### Regions

Central Asia	Popov (1967a)
Central Europe	Warncke (1986); Rasmont <i>et al.</i> (1995); Schwarz <i>et al.</i> (1996); Banaszak and Romasenko (2001)
Europe	Polaszek (2005)
Iberian Peninsula	Diniz (1962)
Far Eastern Palaearctic	Romankova (1994, 1995)

#### Countries and Islands

Andorra	Zanden (1958)
Austria	Warncke (1986); Scheuchl (1996); Schwarz <i>et al.</i> (1996, 2005); Schwarz and Gusenleitner (1997, 1999, 2000)
Azores	Borges <i>et al.</i> (2005)
Belgium	Leclercq (1979); Warncke (1986); Rasmont <i>et al.</i> (1995); Pauly (1999)
Canary Islands	Peters (1975); Hohmann <i>et al.</i> (1993); Tkalcu (1993b)
Channel Islands	Richards (1979)
China	Wu (1965, 2006)
Corsica	Rasmont <i>et al.</i> (1995)
Cyprus	Mavromoustakis (1939b, 1948c, 1951, 1952, 1953, 1954c, 1955a, 1957b–c)
Czech Republic	Warncke (1986); Kocourek (1989)
Denmark	Warncke (1986)
Finland	Elfving (1968); Vikberg (1986)
France	Benoist (1929a, 1931); Rasmont <i>et al.</i> (1995)
Germany	Stöckhert (1954); Westrich (1984, 1989); Warncke (1986); Schwarz <i>et al.</i> (1995);

	Scheuchl (1996); Westrich and Dathe (1997, 1998); Dathe <i>et al.</i> (2001); Dathe and Blank (2004)
Greece	Mavromoustakis (1958, 1959)
Hungary	Móczár (1958)
Iceland	Petersen (1956)
Iran	Popov (1967b)
Ireland	Stelfox (1927, 1929, 1933)
Israel and Palestine	Mavromoustakis (1939c, 1948b)
Italy	Pagliano (1994, 1995)
Japan	Hirashima (1989)
Latvia	Grünwaldt (1939)
Lebanon	Mavromoustakis (1955b, 1956a, 1963)
Liechtenstein	Bieri (2002)
Lithuania	Monsevicius (1995, 2004)
Luxembourg	Warncke (1986); Rasmont <i>et al.</i> (1995)
Macedonia	Zanden (1984a)
Madeira	Fellendorf <i>et al.</i> (1999)
Mongolia	Tkalcu (1995)
Morocco	Nadig and Nadig (1932–1933)
Netherlands	Benno (1969); Warncke (1986); Peeters <i>et al.</i> (1999); Koel (2003)
Poland	Banaszak (1991); Banaszak <i>et al.</i> (2001); Bogdanowicz <i>et al.</i> (2006)
Portugal	Diniz (1960, 1962); Diniz (1989)
Russia	Osychnyuk <i>et al.</i> (1978); Osychnyuk <i>et al.</i> (1995); Romankova (1994, 1995)
Sardinia	Alfken (1937); Pagliano (1994, 1995)
Sicily	Pagliano (1994, 1995)
Slovakia	Warncke (1986); Kocourek (1989)
Slovenia	Gogala (1999, 2003)
Spain	Ceballos (1956); Diniz (1962); Zanden (1984b); Ortiz-Sánchez (2006)
Syria	Mavromoustakis (1956b)
Sweden	Janzon <i>et al.</i> (1991); Nilsson (2003)
Switzerland	Warncke (1986); Amiet (1991); Rasmont <i>et al.</i> (1995); Schwarz <i>et al.</i> (1996); Amiet <i>et al.</i> (2004)
Turkey	Warncke (1988a–b, 1990, 1991a–f, h, 1992b); Özbek and Zanden (1992a–b, 1996); Güler and Cagatay (2006)
Ukraine	Romasenko (1995)
United Kingdom	Fitton <i>et al.</i> (1978); Richards (1979)

## Sources

### Primary nomenclatural sources

Primary sources of the catalogue are the original descriptions of the taxa by their author(s), usually in a publication with the same authorship. In few instances the original descriptions were published in works of other authors or with other author combinations. In cases where references to primary sources could not be obtained, they are designated by [not seen] in the catalogue and are marked by a number sign # in the reference list. Furthermore, the *Official Lists and Indexes of Names and Works in Zoology* published by the Com-

*mission on Zoological Nomenclature* have been consulted for the rulings from 1915–2000 on the status of works, names and nomenclatural acts concerning Palaearctic Osmini. For rulings from 2001–2006 the online version of the list at [http://www.iczn.org/Official\\_Lists\\_Indexes\\_names2005.htm](http://www.iczn.org/Official_Lists_Indexes_names2005.htm) has been used.

## Secondary nomenclatural sources

With the advent of online bibliographical resources, most notably of the *Zoological Record*, it has become straightforward to keep abreast of new taxonomic descriptions. However, a comprehensive taxonomic catalogue necessitates the knowledge of past publications. Hence, the following secondary sources have been utilized: Michener (1986, 1997, 2000) and Engel (2005) for the family-group names; Sandhouse (1943), Pagliano and Scaramozzino (1990) and Michener (1997, 2000) for the genus-group names; Heer (1849, 1867), Handlirsch (1906–1908), Zeuner and Manning (1976), Carpenter (1992) and Engel (2001) for the fossil taxa. We further used the following more general reference works:

### Printed sources

- Annotated bibliography of Russian and Soviet publications on the bees* (Y.A. Pesenko and Y.V. Astafurova, 1 volume covering 1771–2002)
- Bibliotheca Entomologica* (H.A. Hagen, 2 volumes covering covering up to 1862)
- Bibliotheca Historico-Naturalis* (W. Engelmann, covering 1700–1846 )
- Bibliotheca Zoologica* (I: J.V. Carus, 2 volumes covering 1846–1860. II: O.W. Taschenberg, 8 volumes covering 1861–1880)
- Catalogus Hymenopterorum* (K.W. von Dalla Torre, volume 10 covering bees up to 1893)
- Index Animalium* (C.D. Sherborn, 2 sections covering 1758–1850, now available online, see below)
- Index Litteraturae Entomologicae* (I: W. Horn and S. Schenkling, 4 volumes covering up to 1863. II: W. Derksen and U. Scheiding, 4 volumes and 1 index volume covering up to 1900. III: R. Gaedike and O. Smetana, 2 supplement volumes)
- Index Zoologicus* (C.O. Waterhouse, 2 volumes, covering 1880–1910)
- Nomenclator Animalium* (F.E. Schulze, 5 volumes covering 1758–1926)
- Nomenclator Zoologicus* (I: S.H. Scudder, covering 1758–1882. II: S.A. Neave *et al.*, published in 10 volumes covering 1758–2004, now available online, see below)
- Zoological Record* (published annually, 1864 onward, 1978 onward available online, see below)

### Online sources

- BIOSIS Previews Database* (Thomson Scientific/Ovid, New York, U.S.A.)
- Index Animalium Database* (Smithsonian Institution Libraries)
- Life Sciences Collection Database* (CSA Illumina, Cambridge Scientific Abstracts)
- Nomenclator Zoologicus Database* (uBio, The Marine Biological Laboratory, Woods Hole, U.S.A.)
- Zoological Record Database* (1978 onward, BIOSIS, CSA Illumina, Cambridge Scientific Abstracts)
- The Insect and Spider Collections of the World* online version (N.L. Evenhuis and G.A. Samuelson, 2004) at <http://hbs.bishopmuseum.org/codens/> lists most type depositories and their acronyms.



## Conventions

### Glossary of nomenclatural terms

Nomenclature is the stepchild of systematic biology. In no small measure this is due to the often arcane rules stipulated by the nomenclatural codes and the difficult terminology. However, precision and consistency in the use of terms are of critical importance for the communication of taxonomic data. The following technical terms of the glossary are used throughout this catalogue and the understanding of their meaning is essential for the correct interpretation of the information provided in this work. All definitions are in accordance with the currently applicable International Code of Zoological Nomenclature (ICZN, 1999) except for those between quotation marks which do not have an official status. A key aspect for any user of data referring to taxa and thus involving scientific names, is that he is aware of the fundamental distinction between a *taxonomic concept* (what is subjectively thought to constitute a taxon by a particular taxonomist, based on a character analysis and subsequent classification of specimens) and its *taxonomic name* (what is objectively the correct name of such a recognized taxon, based ultimately on a designated type specimen and governed by the current version of the Code). Correspondingly, the basic difference between *taxonomic taxa* and *nominal taxa* (see below) is all too often neglected and confusion can consequently arise when discussing, for instance, biodiversity issues that rely on species richness measures.

Explanatory text in **bold** indicates **cross-referenced** entries within this glossary. For a more detailed discussion of the nomenclatural terms see the official website of the Code at <http://www.iczn.org/iczn/index.jsp>.

**available name:** A scientific animal name that conforms to the provisions of the **Code** and must hence be accounted for.

**Code:** Short for the International Code of Zoological Nomenclature, 4<sup>th</sup> edn, 1999. Contains mandatory rules (90 articles) as well as recommendations, examples and a glossary for the correct scientific naming of animals.

**combination:** The association of a genus- and a species-**rank** name (binomen) or that of a genus- plus species- plus sub-species-**rank** name (trinomen).

**Commission:** Short for the International Commission on Zoological Nomenclature, the author of the **Code**.

**emendation:** An intentional change in the original spelling of an **available name**.

**family group:** Taxa at the **rank** of superfamily (-oidea), family (-idae), subfamily (-inae), tribe (-ini) and any other **rank** below superfamily and above genus that may be required, such as subtribe. All family-group names are uninominal (i.e., consist of one word) and begin with an upper-case letter, for instance tribe Osmiini. In this catalogue we use non-italicized fonts for family-group names. A name established for a taxon at any **rank** in the family group is deemed to have been simultaneously established by the same author with the same **type genus** for taxa at all other **ranks** in the group.

**genus group:** Taxa at the **rank** of genus and subgenus. All genus-group names are uninominal (i.e., consist of one word) and begin with an upper-case letter, for instance subgenus *Osmia*. In this catalogue we use italicized fonts for all genus-group names. A name established for a taxon at either **rank** in the genus group is deemed to have been simultaneously established by the same author with the same **type species** for a taxon at the other **rank** in the group.

**holotype:** The single specimen designated or otherwise fixed as the name-bearing type of a **nominal** species or subspecies.

**homonyms:** Names of the same spelling but denoting different **nominal taxa**. Compare with **synonyms**.

**incertae sedis:** Names of uncertain taxonomic position (i.e., uncertain placement within a classification).

**lectotype:** A **syntype** designated as the single name-bearing type specimen subsequent to the establishment of a nominal species or subspecies.

**misapplication:** To apply a name in a sense which is not correct under the provisions of the **Code** (e.g. in a manner not in accord with the **name-bearing type**). See also **misidentification**. Compare with **synonyms**.

**misidentification:** To mistakenly attribute a specimen to a particular taxon. See also **misapplication**. Compare with **synonyms**.

**monotypic:** Used for (1) a species or subspecies which was described based on a single specimen (e.g., holotype by monotypy) or for (2) a genus or subgenus considered to include a single species (e.g., type-species by monotypy). Note that the term "monobasic" is used instead in numerous works of G. Sandhouse and C. D. Michener as well as several of their collaborators.

**name-bearing type:** Either the **type genus**, **type species**, **holotype**, **lectotype**, **syntype** series or **neotype** that provides

the objective standard for a **nominal taxon**.

**nomen dubium**: A name of uncertain application.

**nomen novum**: Replacement name for an already existing name (**nomen praeoccupatum**).

**nomen nudum**: A name not properly described according to the rules of the Code.

**nomen praeoccupatum**: An already existing name.

**nominal taxon**: Formal, objective taxon denoted by an **available name** and based on a **name-bearing type**. Compare with **taxonomic taxon**.

**nomotypical taxon**: The taxon at a subordinate rank within the family group, the genus group or the species group that contains the name-bearing type of the subdivided taxon.

**rank**: Nomenclatural level of the taxonomic hierarchy.

**species group**: Taxa at the **rank** of species and subspecies. All species-group names are **combinations**, namely either binominal (i.e., binomens consisting of two names, the generic and specific name) in the case of species (for instance *Osmia cornuta*), or trinominal (i.e., trinomens consisting of three names, the generic, specific and subspecific) in the case of subspecies (for instance *Osmia cornuta quasirufa*). In this catalogue we use italicized fonts for all species-group names. A name established for a taxon at either **rank** in the species group is deemed to have been simultaneously established by the same author with the same type for a taxon at the other **rank** in the group.

**synonyms**: Names of the same **rank** denoting the same **taxonomic taxon**. The earlier established (senior) synonym is given precedence over the later established (junior) synonym. Compare with **homonyms**, and **misidentification**.

**syntype**: Each specimen of a type series from which neither a **holotype** nor a **lectotype** has been designated.

**taxonomic taxon**: A subjective taxon representing a taxonomist's opinion with regards to contained individuals and **nominal taxa**. Denoted by the **valid name** determined from the **available names** of its included **nominal taxa**.

**type**: See **name-bearing type**.

**type genus**: The nominal genus that is the **name-bearing type** of a nominal **family-group taxon**.

**type species**: The nominal species that is the **name-bearing type** of a nominal **genus-group taxon**.

**valid name**: The oldest **available** (and not objectively or subjectively invalid) name of a **name-bearing type** that falls within a taxonomist's concept of a taxon. This is the correct name for a **taxonomic taxon**.

## Format of the catalogue

We use the traditional division into three parts: the catalogue proper, the name index and the bibliography, all arranged alphabetically. To increase legibility and as certain rules of nomenclature differ for names at different hierarchical levels the catalogue proper is again divided into three parts: family-group names, genus-group names and species-group names (see Glossary). The taxon accounts contain the (1) valid name, (2) the literature citations in chronological order, which reflect the history of the taxon, including changes in rank, delimitation and lectotypification, (3) the recorded distribution of the taxon using the geographical classification of Table 1, and (4) literature sources for species identification. References to taxon authors are in small capitals and references to citation authors are in Roman. The agreement of gender of the species-group name with the generic name as requested by the Article 31.2 of the Code is enforced throughout the catalogue and hence the gender ending is changed if necessary: *-a*, **feminine** for *Haetosmia*, *Hofferia*, *Hoplitis*, *Hoplosmia*, *Osmia*, *Protosmia*, *Stenosmia*, *Wainia*; *-us*, **masculine** for *Heriades*, *Ochreriades*, *Pseudoheriades*, *Stenoheriades*; *-um*, **neuter** for *Chelostoma*. A word of caution is necessary regarding the current location of the type specimens. For the present catalogue the location of types was exclusively inferred from the literature. In the early descriptions of new taxa generally no holotypes were selected from the original material. In such cases several type specimens may have been marked unspecifically as "types" and been distributed to different collections, where they may now be interpreted and labelled as holotype. This issue can, of course, only be tackled in a definitive manner with careful type revisions.

<i>Taxa</i>	Osmiini	family-group names are given in non-italicized type faces
	<i>Osmia bicornis</i>	genus- and species-group names are given in italic type faces (including invalid names)

## TERMS OF USE

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<i>Types</i>	<u>Type</u> ...	family-group and genus-group types (taxa)
	<u>Type</u> ...	species-group types (specimens)
<i>Authors</i>	Michener (2000)	reference authorships are given in Roman type faces
	MICHENER, 2000	taxon authorships are given in small capitals
<i>Distribution</i>	CH	country acronym for recorded localities (see Table 1)
	<u>CH</u>	country acronym for type localities
	CH?	country acronym for uncertain localities
	<del>CH</del>	country acronym for recorded localities which have been shown to be demonstrably incorrect by subsequent authors
<i>Remarks</i>	[...]	note by the authors of this catalogue
	[= ...]	currently accepted combination of a type species

## Abbreviations in the catalogue

### General

auct.	a name used in a differing sense by subsequent authors, that is, not in the sense as established by the original authorship
ed., eds	editor, editors
edn	edition
e.g.	for example (Latin: <i>exempli gratia</i> )
et al.	and the others (Latin: <i>et alii</i> )
fig., figs	figure, figures
ICZN	International Commission on Zoological Nomenclature (author of the International Code of Zoological Nomenclature published by the International Trust for Zoological Nomenclature)
i.e.	that is (Latin: <i>id est</i> )
in litt.	in an unpublished letter or electronic mail (Latin: <i>in litteris</i> )
p., pp.	page, pages
pl., pls	plate, plates
pt., pts	part, parts
ser.	series
sic	thus (i.e., spelled or used exactly the way provided)
vol., vols	volume, volumes

### Symbols

†	extinct taxon
#	original publication of a name not seen by the authors of the catalogue
♂/♀	one male/female specimen
♂♂/♀♀	several male/female specimens
♂(♂)/♀(♀)	male(s)/female(s) of unknown quantity

*Collections*

Acronym	Museum/Collection name	Country
AMNH	American Museum of Natural History, New York	United States
BMNH	The Natural History Museum, London	United Kingdom
DAAN	Department of Agriculture, Ministry of Agriculture and Natural Resources, Nicosia	Cyprus
DEI	Deutsches Entomologisches Institut, Müncheberg	Germany
DEZA	Dipartimento di Entomologia e Zoologia Agraria dell'Università, Portici	Italy
EMET	Ataturk Universitesi, Faculty of Agriculture, Entomology Museum, Erzurum	Turkey
ETHZ	Eidgenössische Technische Hochschule, Entomologische Sammlung, Zürich	Switzerland
FMNH	Finnish Museum of Natural History, Helsinki	Finland
GMUG	Universität Göttingen, Geowissenschaftliches Zentrum, Göttingen	Germany
HNHM	Hungarian Natural History Museum, Budapest	Hungary
IEGG	Università di Bologna, Istituto di Entomologia, Bologna	Italy
ISZP	Polish Academy of Sciences, Institute of Systematic Zoology, Krakow	Poland
IZCAS	Chinese Academy of Sciences, Institute of Zoology, Beijing	China
KUEC	Kyushu University, Fukuoka	Japan
LSUK	Linnean Society, London	United Kingdom
MHNG	Muséum d'Histoire Naturelle, Genève	Switzerland
MICN	Museo Insular de Ciencias Naturales, Canary Islands, Tenerife	Spain
MLUH	Martin-Luther-Universität, Wissenschaftsbereich Zoologie, Halle	Germany
MNHN	Muséum Nationale d'Histoire Naturelle, Paris	France
MSDB	Museo di Storia Naturale, Torino	Italy
MSNG	Museo Civico di Storia Naturale, Genova	Italy
MTD	Museum für Tierkunde, Dresden	Germany
MZLS	Musée Zoologique, Lausanne	Switzerland
MZLU	Lund University, Lund	Sweden
NHMB	Naturhistorisches Museum, Basel	Switzerland
NMBE	Naturhistorisches Museum, Bern	Switzerland
NMPC	National Museum (National History), Prague	Czech Republic
NMW	Naturhistorisches Museum, Wien	Austria
OLML	Oberösterreichisches Landesmuseum, Linz	Austria
OUMNH	University Museum of Natural History, Oxford	United Kingdom
RMNH	Nationaal Natuurhistorisch Museum Naturalis, Leiden	The Netherlands
SEMC	University of Kansas, Snow Entomological Museum, Lawrence	United States
SMFD	Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt am Main	Germany
SMNG	Staatliches Museum für Naturkunde, Görlitz	Germany
SMNK	Staatliches Museum für Naturkunde, Karlsruhe	Germany
SMNS	Staatliches Museum für Naturkunde, Stuttgart	Germany
SOFM	National Museum of Natural History, Sofia	Bulgaria
UASK	Ukrainian Academy of Sciences, Institute of Zoology, Kiev	Ukraine
USNM	National Museum of Natural History, Washington	United States
UWCP	University of Wroclaw, Wroclaw	Poland
UZIU	Uppsala University, Uppsala	Sweden
ZIN	Russian Academy of Sciences, Zoological Institute, St. Petersburg	Russia
ZMHB	Museum für Naturkunde der Humboldt-Universität, Berlin	Germany
ZMUC	University of Copenhagen, Zoological Museum, Copenhagen	Denmark
ZMUM	Moscow State University, Moscow	Russia
ZSM	Zoologische Staatssammlung, München	Germany

*Distribution*

For a complete list of the geographical distribution abbreviations and acronyms used, see Table 1.

## Family-group names

The family-group names are arranged alphabetically by subtribe, and chronologically within each valid name. Michener (2000) and Engel (2005) were used as standard references for the validity, rank and synonymy of family-group level taxa. The family-group names listed below are, with the exception of *Osmiini*, not used extensively in the current literature and the suprageneric classification of the *Osmiini* is indeed far from settled. For an overview of the placement of the currently valid genera into the two subtribal taxa accepted by Michener (2000) see Table 4.

### Tribe **Osmiini** NEWMAN, 1834

- 1834 **Osmiini** NEWMAN, *Entomological Magazine*, 2: 401 [as *Osmiites* NEWMAN]. Type genus: *Osmia* PANZER, 1806. Combining stem: *Osmi-*.—Synonymy with *Megachilini* LATREILLE, 1802 in Michener (1986: 226).
- 1837 **Chelostomini** KIRBY, in: Richardson (Ed.), *Fauna Boreali-Americana*, pt. 4, p. 270 [as *Chelostomidae* KIRBY]. Type genus: *Chelostoma* LATREILLE, 1809. Combining stem: *Chelostom-*.—Synonymy with *Megachilini* LATREILLE, 1802 in Michener (1986: 226). Synonymy in Engel (2005: 32).
- 1903 **Trypetini** ROBERTSON, *Transactions of the American Entomological Society*, 29: 164. NOMEN PRAEOCCUPATUM [not *Trypedidae* LOEW, 1861 (Diptera)]. Type genus: *Trypetes* SCHENCK, 1861. NOMEN PRAEOCCUPATUM [not *Trypetes* SCHÖNHERR, 1836 (Coleoptera)]. Combining stem: *Trypet-*.
- 1941 **Heriadini** MICHENER, *American Midland Naturalist*, 26: 152. Type genus: *Heriades* SPINOLA, 1808. Combining stem: *Heriad-*.—Synonymy with *Megachilini* LATREILLE, 1802 in Michener (1986: 226).
- 2000 **Hoplitini** NOBILE & TOMARCHIO, *Bollettino dell'Accademia Gioenia di Scienze Naturali*, 33: 46. NOMEN NUDUM according to Engel (2005: 32). Type genus: *Hoplitis* KLUG, 1807. Combining stem: *Hoplit-*.

### Osmiini subtribe **Heriadina** MICHENER, 1941

- 1903 **Trypetina** ROBERTSON, *Transactions of the American Entomological Society*, 29: 164 [as *Trypetini* ROBERTSON]. NOMEN PRAEOCCUPATUM [not *Trypedidae* LOEW, 1861 (Diptera)]. Type genus: *Trypetes* SCHENCK, 1861. NOMEN PRAEOCCUPATUM [not *Trypetes* SCHÖNHERR, 1836 (Coleoptera)]. Combining stem: *Trypet-*.
- 1941 **Heriadina** MICHENER, *American Midland Naturalist*, 26: 152 [as *Heriadini* MICHENER]. Type genus: *Heriades* SPINOLA, 1808. Combining stem: *Heriad-*.

### Osmiini subtribe **Osmiina** NEWMAN, 1834

- 1834 **Osmiina** NEWMAN, *Entomological Magazine*, 2: 401 [as *Osmiites* NEWMAN]. Type genus: *Osmia* PANZER, 1806. Combining stem: *Osmi-*.
- 1837 **Chelostomina** KIRBY, in: Richardson (Ed.), *Fauna Boreali-Americana*, pt. 4, p. 270 [as *Chelostomidae* KIRBY]. Type genus: *Chelostoma* LATREILLE, 1809. Combining stem: *Chelostom-*.—Synonymy in Engel (2005: 32).
- 2000 **Hoplitina** NOBILE & TOMARCHIO, *Bollettino dell'Accademia Gioenia di Scienze Naturali*, 33: 46 [as *Hoplitini* NOBILE & TOMARCHIO]. NOMEN NUDUM according to Engel (2005: 32). Type genus: *Hoplitis* KLUG, 1807. Combining stem: *Hoplit-*.

## Genus-group names

The genus-group names are arranged alphabetically by genus and subgenus, and chronologically within each valid name. Griswold and Michener (1998) and Michener (2000) were used as standard references for the validity, rank and synonymy of genus-group taxa. We slightly deviate from their generic and subgeneric system by keeping *Hoplitis* (*Micreriades*) as a distinct subgenus separated from *Hoplitis* (*Alcidamea*) and by treating *Nasutosmia* as a subgenus of *Osmia* rather than of *Hoplitis*. Both deviations are justified by morphological characters and by preliminary results of a molecular phylogenetic study of the Osmiini (C. Praz, A. Müller, B. Danforth, T. Griswold, A. Widmer and S. Dorn, unpublished). All alternative published opinions concerning synonymy, rank and generic placement are disclosed citing one reference only (not necessarily the earliest). Michener (2000) further accepts the following extralimital genera within the osmiine bees restricted to areas outside the Palaearctic and therefore not treated here: *Afroheriades* PETERS, *Ashmeadiella* COCKERELL, *Atoposmia* COCKERELL, *Bekilia* BENOIST, *Noteriades* COCKERELL, *Othinosmia* MICHENER and *Xeroheriades* GRISWOLD. Further, note that several genus-group names are typified by extralimital taxa which are consequently not listed in the following section on species-group names. For an overview of all currently accepted genera and subgenera of the world see Table 5.

Genus *Chelostoma* LATREILLE, 1809 Palaeartic | Nearctic | (Oriental)

1809 *Chelostoma* LATREILLE, Genera Crustaceorum et Insectorum [...], vol. 4, p. 161 [as genus]. Type species: *Apis maxillosa* LINNAEUS, 1767 [= *Chelostoma florissomne* (LINNAEUS, 1758)], by monotypy.—Synonymy with *Heriades* SPINOLA, 1808 in Friese (1911b). Synonymy with *Osmia* PANZER, 1806 in Warncke (1977–1992).

*Chelostoma* subgenus *Ceraheriades* TKALCU, 1984 Palaeartic

1984 *Ceraheriades* TKALCU, Annotationes Zoologicae et Botanicae (Bratislava), 158: 5 [as subgenus of *Archeriades* PETERS, now considered to be a synonym of the Afrotropic genus *Afroheriades* PETERS (Michener, 2000: 435)]. Type species: *Archeriades petersi* TKALCU, 1984 [= *Chelostoma petersi* (TKALCU, 1984)], by original designation.

*Chelostoma* subgenus *Chelostoma* LATREILLE, 1809 Palaeartic

1809 Automatically established nominotypical subgeneric taxon (original description and type species are identical with those of genus *Chelostoma* LATREILLE).

*Chelostoma* subgenus *Eochelostoma* GRISWOLD, 1998 (Palaeartic) | Oriental

1998 *Eochelostoma* GRISWOLD, in: Griswold and Michener, Journal of the Kansas Entomological Society, 70: 216 [as subgenus of *Chelostoma* LATREILLE]. Type species: *Heriades aureocinctus* BINGHAM, 1897 [= *Chelostoma aureocinctum* (BINGHAM, 1897)], by original designation.

*Chelostoma* subgenus *Foveosmia* WARNCKE, 1991 Palaeartic | Nearctic

1991 *Foveosmia* WARNCKE, Linzer Biologische Beiträge, 23: 267 [as subgenus of *Osmia* PANZER]. Type species:



*Heriades foveolatus* MORAWITZ, 1868 [= *Chelostoma foveolatum* (MORAWITZ, 1868)], by original designation.

*Chelostoma* subgenus ***Gyrodromella*** MICHENER, 1997 Palaeartic | (Nearctic) [Introduced]

- 1872 ***Gyrodroma*** THOMSON, Skandinaviens Hymenoptera, vol. 2, p. 259 [as genus]. NOMEN PRAEOCCUPATUM [not *Gyrodroma* KLUG, 1807 (Hymenoptera)]. Type species: *Heriades nigricornis* NYLANDER, 1848 [= *Chelostoma rapunculi* (LEPELETIER, 1841)], by designation of Cockerell (1925: 205).
- 1997 ***Gyrodromella*** MICHENER, Scientific papers. Natural History Museum. The University of Kansas, 1: 27 [as subgenus of *Chelostoma* LATREILLE]. NOMEN NOVUM with same type species for preoccupied *Gyrodroma* THOMSON, 1872 [not *Gyrodroma* KLUG, 1807 (Hymenoptera)].

Genus ***Haetosmia*** POPOV, 1952 Palaeartic | (Afrotropic)

- 1952 ***Haetosmia*** POPOV, Trudy Zoologicheskova Instituta, Akademii Nauk SSSR, 10: 104 [as subgenus of *Anthocopa* LEPELETIER & SERVILLE]. Type species: *Osmia latipes* MORAWITZ, 1875 [= *Haetosmia brachyura* (MORAWITZ, 1875)], by monotypy.—Accepted as subgenus of *Osmia* PANZER in Peters (1974: 293).

Genus ***Heriades*** SPINOLA, 1808 Palaeartic | Nearctic | Afrotropic | Oriental | (Neotropic)

- 1808 ***Heriades*** SPINOLA, Insectorium Liguriaie [...], vol. 2, p. 7 [as genus]. Type species: *Apis truncorum* LINNAEUS, 1758 [= *Heriades truncorum* (LINNAEUS, 1758)], by designation of Latreille (1810: 439).—Synonymy with *Osmia* PANZER, 1806 in Warncke (1977–1992).

*Heriades* subgenus ***Heriades*** SPINOLA, 1808 Palaeartic | Afrotropic | Oriental

- 1808 Automatically established nominotypical subgeneric taxon (original description and type species are identical with those of genus *Heriades* SPINOLA).
- 1861 ***Trypetes*** SCHENCK, Jahrbücher des Vereins für Naturkunde im Herzogthum Nassau, 14: 89 [as genus]. NOMEN PRAEOCCUPATUM [not *Trypetes* SCHÖNHERR, 1836 (Coleoptera)]. Type species: *Apis truncorum* LINNAEUS, 1758 [= *Heriades truncorum* (LINNAEUS, 1758)], by monotypy.
- 1895 ***Eriades*** SPINOLA, in: Dalla Torre and Friese, Entomologische Nachrichten (Berlin), 21: 69 [as genus]. UNJUSTIFIED EMENDATION of *Heriades* SPINOLA, 1808.
- 1987 ***Orientalheriades*** GUPTA, Reichenbachia (Dresden), 25: 68 [as subgenus of *Heriades* SPINOLA]. Type species: *Heriades orientalis* GUPTA, 1987, by original designation, Oriental.—Accepted at genus rank in Gupta (1993: 92).—Synonymy in Michener (2000: 442).

*Heriades* subgenus ***Michenerella*** KROMBEIN, 1950 Palaeartic | Afrotropic | Oriental

- 1950 ***Michenerella*** KROMBEIN, Proceedings of the Hawaiian Entomological Society, 14: 122 [as subgenus of *Heriades* SPINOLA]. Type species: *Heriades paganensis* YASUMATSU, 1942, by original designation, Oriental.
- 1955 ***Eutrypetes*** POPOV, Entomologicheskoe Obozrenie, 34: 280 [as subgenus of *Heriades* SPINOLA]. Type species: *Heriades turcomanicus* POPOV, 1955, by original designation.—Synonymy in Michener (2000: 443).



- Heriades* subgenus *Rhopaloheriades* GRISWOLD & MICHENER, 1998 Palaeartic
- 1998 *Rhopaloheriades* GRISWOLD & MICHENER, Journal of the Kansas Entomological Society, 70: 237 [as subgenus of *Heriades* SPINOLA]. Type species: *Heriades clavicornis* MORAWITZ, 1875, by original designation.
- Genus *Hofferia* TKALCU, 1984 Palaeartic
- 1984 *Hofferia* TKALCU, Annotationes Zoologicae et Botanicae (Bratislava), 158: 10 [as genus]. Type species: *Chelostoma schmiedeknechti* SCHLETTERER, 1889 [= *Hofferia schmiedeknechti* (SCHLETTERER, 1889)], by original designation.
- Genus *Hoplitis* KLUG, 1807 Palaeartic | Nearctic | Afrotropic | (Oriental)
- 1807 *Hoplitis* KLUG, Magazin für Insektenkunde, 6: 225 [as genus]. Type species: *Apis adunca* PANZER, 1798 [= *Hoplitis adunca* (PANZER, 1798)], by monotypy.—Synonymy with *Osmia* PANZER, 1806 in Warncke (1977–1992).
- Hoplitis* subgenus *Alcidamea* CRESSON, 1864 Palaeartic | Nearctic
- 1864 *Alcidamea* CRESSON, Proceedings of the Entomological Society of Philadelphia, 2: 385 [as genus]. Type species: *Alcidamea producta* CRESSON, 1864 [= *Hoplitis producta* (CRESSON, 1864)], by designation of Michener (1941: 158), Nearctic.
- 1872 *Acanthosmia* THOMSON, Skandnaviens Hymenoptera, vol. 2, p. 233 [as subgenus of *Osmia* PANZER]. No species included, 15 species included in Schmiedeknecht (1885: 20). Type species: *Osmia montivaga* MORAWITZ, 1872 [= *Hoplitis mitis* (NYLANDER, 1852)], by designation of Sandhouse (1943: 522).—Synonymy in Michener (2000: 449).
- 1872 *Liosmia* THOMSON, Skandnaviens Hymenoptera, vol. 2, p. 233, p. 254 [as subgenus of *Osmia* PANZER]. No species included, seven species included in Zanden (1988b: 122). Type species: *Osmia claviventris* THOMSON, 1872 [= *Hoplitis claviventris* (THOMSON, 1872)], by designation of Michener (1941: 159).—Synonymy in Michener (2000: 449).
- 1885 *Tridentosmia* SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 21 [887] [as subgenus of *Osmia* PANZER]. Type species: *Osmia tridentata* DUFOR & PERRIS, 1840 [= *Hoplitis tridentata* (DUFOR & PERRIS, 1840)], by designation of Michener (1941: 159).—Synonymy in Michener (2000: 449).
- 1916 *Autochelostoma* SLADEN, The Canadian Entomologist, 48: 270 [as genus]. Type species: *Autochelostoma canadensis* SLADEN, 1916 [= *Hoplitis producta* (CRESSON, 1864)], by original designation and monotypy.—Synonymy in Michener (2000: 449).
- Hoplitis* subgenus *Annosmia* WARNCKE, 1991 Palaeartic | (Afrotropic)
- 1991 *Annosmia* WARNCKE, Linzer Biologische Beiträge, 23: 307 [as subgenus of *Osmia* PANZER]. Type species: *Osmia annulata* LATREILLE, 1811 [= *Hoplitis annulata* (LATREILLE, 1811)], by original designation.

*Hoplitis* subgenus *Anthocopa* LEPELETIER & SERVILLE, 1825 Palaeartic | Afrotropic | (Oriental)

- 1825 *Anthocopa* LEPELETIER & SERVILLE, Encyclopédie Méthodique, Histoire Naturelle. Insectes, vol. 10, p. 314 [as genus]. Type species: *Apis papaveris* LATREILLE, 1799 [= *Hoplitis papaveris* (LATREILLE, 1811)], by monotypy.
- 1860 *Phyllotoma* DUMÉRIL, Mémoires de l'Académie des Sciences de l'Institut de France (Paris), 31: 842 [as genus]. NOMEN PRAEOCCUPATUM [not *Phyllotoma* LEACH, 1819 (Coleoptera); not *Phyllotoma* FALLÉN, 1829 (Hymenoptera)]. Type species: *Apis papaveris* LATREILLE, 1799 [= *Hoplitis papaveris* (LATREILLE, 1799)], by designation of Michener (1941: 160).
- 1872 *Pseudosmia* RADOSZKOWSKI, Horae Societatis Entomologicae Rossicae (St. Petersburg), 8, Bulletin: xviii [as genus]. No species included, nine species included in Radoszkowski (1874c: 152). Type species: *Megachile cristata* FONSCOLOMBE, 1846 (not DUFOR, 1841) [= *Hoplitis cristatula* (ZANDEN, 1990)], by designation of Cockerell (1922: 6).—Synonymy in Michener (2000: 450).
- 1874 *Pseudo-Osmia* RADOSZKOWSKI, Bulletin de la Société Impériale des Naturalistes de Moscou, 46[47]: 137 [as genus]. UNJUSTIFIED EMENDATION of *Pseudosmia* RADOSZKOWSKI, 1872.
- 1874 *Pseudoosmia* RADOSZKOWSKI, Bulletin de la Société Impériale des Naturalistes de Moscou, 48: 152 [as genus]. UNJUSTIFIED EMENDATION of *Pseudosmia* RADOSZKOWSKI, 1872.
- 1885 *Arctosmia* SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 21 [887] [as subgenus of *Osmia* PANZER]. Type species: *Megachile villosa* SCHENCK, 1853 (not FABRICIUS, 1775) [= *Hoplitis villosa* (SCHENCK, 1853)], by monotypy.—Synonymy in Michener (2000: 450).
- 1885 *Furcosmia* SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 22 [888] [as subgenus of *Osmia* PANZER]. Type species: *Apis papaveris* LATREILLE, 1799 [= *Hoplitis papaveris* (LATREILLE, 1799)], by designation of Cockerell (1922: 6).—Synonymy in Michener (2000: 450).
- 1886 *Pseudocosmia* RADOSZKOWSKI, Horae Societatis Entomologicae Rossicae (St. Petersburg), 20: 14 [as genus]. UNJUSTIFIED EMENDATION of *Pseudosmia* RADOSZKOWSKI, 1872.
- 1935 *Lithosmia* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 188 [as subgenus of *Osmia* PANZER]. Type species: *Megachile villosa* SCHENCK, 1853 (not FABRICIUS, 1775) [= *Hoplitis villosa* (SCHENCK, 1853)], by designation and synonymization with subgenus *Arctosmia* SCHMIEDEKNECHT in Sandhouse (1943: 565).—Synonymy with subgenus *Arctosmia* SCHMIEDEKNECHT previously in Alfken (1935c: 314). Synonymy in Michener (2000: 442).
- 1943 *Glossosmia* MICHENER, Annals of the Entomological Society of America, 36: 84 [as subgenus of *Osmia* PANZER]. Type species: *Osmia singularis* MORAWITZ, 1875 [= *Hoplitis singularis* (MORAWITZ, 1875)], by original designation.—Synonymy in Michener (2000: 450).

*Hoplitis* subgenus *Bytinskia* MAVROMOUSTAKIS, 1954 Palaeartic | (Afrotropic)

- 1954 *Bytinskia* MAVROMOUSTAKIS, Bulletin of the Research Council of Israel, 4: 269 [as genus]. Type species: *Bytinskia erythrogastra* MAVROMOUSTAKIS, 1954 [= *Hoplitis erythrogastra* (MAVROMOUSTAKIS, 1954)], by original designation.

*Hoplitis* subgenus *Chlidoplitis* GRISWOLD, 1998 Palaeartic

- 1998 *Chlidoplitis* GRISWOLD, in: Griswold and Michener, Journal of the Kansas Entomological Society, 70: 223 [as subgenus of *Hoplitis* KLUG]. Type species: *Hoplitis heinrichi* ZANDEN, 1980, by original designation.

- Hoplitis* subgenus *Coloplitis* GRISWOLD, 1998 Palaeartic
- 1998 *Coloplitis* GRISWOLD, in: Griswold and Michener, Journal of the Kansas Entomological Society, 70: 223 [as subgenus of *Hoplitis* KLUG]. Type species: *Hoplitis premordica* GRISWOLD, 1998, by original designation.
- Hoplitis* subgenus *Eurypariella* TKALCU, 1995 Palaeartic
- 1995 *Eurypariella* TKALCU, Entomologische Abhandlungen (Dresden), 57: 111 [as genus]. Type species: *Osmia denudata* MORAWITZ, 1880 [= *Hoplitis denudata* (MORAWITZ, 1880)], by original designation.
- Hoplitis* subgenus *Exanthocopa* TKALCU, 1993 Palaeartic
- 1993 *Exanthocopa* TKALCU, Bulletin de la Société Entomologique de Mulhouse, July–September: 55 [as subgenus of *Anthocopa* LEPELETIER & SERVILLE]. Type species: *Osmia oxypyga* BENOIST, 1927 [= *Hoplitis oxypyga* (BENOIST, 1927)], by original designation.
- Hoplitis* subgenus *Formicapis* SLADEN, 1916 Palaeartic | Nearctic
- 1916 *Formicapis* SLADEN, The Canadian Entomologist, 48: 271 [as genus]. Type species: *Formicapis clypeata* SLADEN, 1916 [= *Hoplitis robusta* (NYLANDER, 1848)], by monotypy.
- Hoplitis* subgenus *Hoplitis* KLUG, 1807 Palaeartic | (Nearctic) [Introduced]
- 1807 Automatically established nominotypical subgeneric taxon (original description and type species are identical with those of genus *Hoplitis* KLUG).
- 1872 *Ctenosmia* THOMSON, Skandinaviens Hymenoptera, vol. 2, p. 233 [as subgenus of *Osmia* PANZER]. Type species: *Apis adunca* PANZER, 1798 [= *Hoplitis adunca* (PANZER, 1798)], by designation and synonymization in Michener (1941: 158).—Synonymy in Michener (2000: 453).
- Hoplitis* subgenus *Jaxartinula* POPOV, 1963 Palaeartic
- 1963 *Jaxartinula* POPOV, Zoologicheskii Zhurnal (Moscow), 42: 865 [as genus]. Type species: *Jaxartinula malyshevi* POPOV, 1963 [= *Hoplitis malyshevi* (POPOV, 1963)], by original designation.
- Hoplitis* subgenus *Kumobia* POPOV, 1962 Palaeartic
- 1962 *Kumobia* POPOV, Trudy Zoologicheskogo Instituta Akademija Nauk SSSR, 30: 300 [as genus]. Type species: *Osmia tenuicornis* MORAWITZ, 1875 [= *Hoplitis tenuicornis* (MORAWITZ, 1875)], by original designation.
- Hoplitis* subgenus *Megahoplitis* TKALCU, 1993 Palaeartic
- 1993 *Megahoplitis* TKALCU, Bulletin de la Société Entomologique de Mulhouse, July–September: 55 [as subgenus of *Hoplitis* KLUG]. Type species: *Osmia tigrina* MORAWITZ, 1872 [= *Hoplitis tigrina* (MORAWITZ, 1872)], by orig-

inal designation.

*Hoplitis* subgenus ***Megalosmia*** SCHMIEDEKNECHT, 1885 Palaeartic

- 1885 ***Megalosmia*** SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 23 [889] [as subgenus of *Osmia* PANZER]. Type species: *Osmia grandis* MORAWITZ, 1872 [= *Hoplitis fulva* (EVERSMANN, 1852)], by designation of Sandhouse (1943: 568).
- 1995 ***Calohoplitis*** TKALCU, Entomologische Abhandlungen (Dresden), 57: 129 [as subgenus of *Hoplitis* KLUG]. Type species: *Osmia laboriosa* SMITH, 1878 [= *Hoplitis laboriosa* (SMITH, 1878)], by original designation.—Synonymy in Michener (2000: 454).

*Hoplitis* subgenus ***Micreriades*** MAVROMOUSTAKIS, 1958 Palaeartic

- 1958 ***Micreriades*** MAVROMOUSTAKIS, The Annals and Magazine of Natural History, ser. 13, 1: 444 [as subgenus of *Heriades* SPINOLA]. Type species: *Heriades parnesicus* MAVROMOUSTAKIS, 1958 [= *Hoplitis parnesica* (MAVROMOUSTAKIS, 1958)], by original designation.—Synonymy with subgenus *Alcidamea* CRESSON, 1864 in Michener (2000: 449).

*Hoplitis* subgenus ***Microhoplitis*** TKALCU, 1993 Palaeartic

- 1993 ***Microhoplitis*** TKALCU, Veröffentlichungen des Übersee-Museum Bremen (Naturwissenschaften), 12: 811 [as subgenus of *Osmia* PANZER]. Type species: *Osmia hohmanni* TKALCU, 1993 [= *Hoplitis zandeni* (TEUNISSEN & VAN ACHTERBERG, 1992)], by original designation.

*Hoplitis* subgenus ***Monumetha*** CRESSON, 1864 (Palaeartic) | Nearctic

- 1864 ***Monumetha*** CRESSON, Proceedings of the Entomological Society of Philadelphia, 2: 387 [as genus]. Type species: *Chelostoma albifrons* KIRBY, 1837 [= *Hoplitis argentifrons* (CRESSON, 1864)], by designation of Titus (1904: 26), Nearctic.
- 1864 ***Andronicus*** CRESSON, Proceedings of the Entomological Society of Philadelphia, 2: 384 [as genus]. Type species: *Andronicus cylindricus* CRESSON, 1864 (not GIRAUD, 1857) [= *Hoplitis spoliata* (PROVANCHER, 1888)], by monotypy, Nearctic.—Synonymy in Michener (2000: 455).
- 1916 ***Chlorosmia*** SLADEN, The Canadian Entomologist, 48: 270 [as genus]. Type species: *Osmia fulgida* CRESSON, 1864 [= *Hoplitis fulgida* (CRESSON, 1864)], by monotypy, Nearctic.—Synonymy in Michener (2000: 455).

*Hoplitis* subgenus ***Pentadentosmia*** WARNCKE, 1991 Palaeartic | (Afrotropic)

- 1991 ***Pentadentosmia*** WARNCKE, Entomofauna (Ansfelden), 12: 14 [as subgenus of *Osmia* PANZER]. Type species: *Osmia quinquespinosa* FRIESE, 1899 [= *Hoplitis quinquespinosa* (FRIESE, 1899)], by original designation.

*Hoplitis* subgenus ***Platosmia*** WARNCKE, 1990 Palaeartic

- 1990 ***Platosmia*** WARNCKE, Entomofauna (Ansfelden), 11: 482 [as subgenus of *Osmia* PANZER]. Type species: *Osmia platalea* WARNCKE, 1990 [= *Hoplitis platalea* (WARNCKE, 1990)], by original designation.

- Hoplitis* subgenus *Prionhoplitis* TKALCU, 1993 Palaeartic
- 1993 *Prionhoplitis* TKALCU, Bulletin de la Société Entomologique de Mulhouse, July–September: 55 [as subgenus of *Hoplitis* KLUG]. Type species: *Osmia curvipes* MORAWITZ, 1871 [= *Hoplitis curvipes* (MORAWITZ, 1871)], by original designation.
- Genus *Hoplosmia* THOMSON, 1872 Palaeartic
- 1872 *Hoplosmia* THOMSON, Skandinaviens Hymenoptera, vol. 2, p. 233 [as subgenus of *Osmia* PANZER]. No species included, six species included in Schmiedeknecht (1885: 23). Type species: *Apis spinulosa* KIRBY, 1802 [= *Hoplosmia spinulosa* (KIRBY, 1802)], by designation of Michener (1941: 161).
- Hoplosmia* subgenus *Hoplosmia* THOMSON, 1872 Palaeartic
- 1872 Automatically established nominotypical subgeneric taxon (original description and type species are identical with those of genus *Hoplosmia* THOMSON).
- Hoplosmia* subgenus *Odontanthocopa* TKALCU, 1974 Palaeartic
- 1974 *Odontanthocopa* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 71: 125 [as subgenus of *Anthocopa* LEPELETIER & SERVILLE]. Type species: *Osmia bidentata* MORAWITZ, 1876 [= *Hoplosmia bidentata* (MORAWITZ, 1876)], by original designation.
- 1974 *Odonterythrosmia* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 71: 131 [as subgenus of *Anthocopa* LEPELETIER & SERVILLE]. Type species: *Osmia fallax* PÉREZ, 1895 [= *Hoplosmia fallax* (PÉREZ, 1895)], by original designation.—Synonymy in Michener (2000: 458).
- Hoplosmia* subgenus *Paranthocopa* TKALCU, 1974 Palaeartic
- 1974 *Paranthocopa* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 71: 132 [as subgenus of *Anthocopa* LEPELETIER & SERVILLE]. Type species: *Osmia pinguis* PÉREZ, 1895 [= *Hoplosmia pinguis* (PÉREZ, 1895)], by original designation.
- Genus *Ochreriades* MAVROMOUSTAKIS, 1956 Palaeartic | Afrotropic
- 1956 *Ochreriades* MAVROMOUSTAKIS, Eos (Madrid), 32: 226 [as genus]. Type species: *Heriades fasciatus* FRIESE, 1899 [= *Ochreriades fasciatus* (FRIESE, 1899)], by original designation.
- Genus *Osmia* PANZER, 1806 Palaeartic | Nearctic | (Oriental) | (Neotropic)
- 1806 *Osmia* PANZER, Apis Calendarum, Hymenoptera 2, vol. 6, p. 230 [as genus]. Type species: *Apis bicornis* LINNAEUS, 1758 [= *Osmia bicornis* (LINNAEUS, 1758)], by designation of Latreille (1810: 439).

- Osmia* subgenus *Allosmia* TKALCU, 1974 Palaeartic
- 1974 *Allosmia* TKALCU, Beiträge zur Entomologie (Berlin), 24: 331 [as subgenus of *Osmia* PANZER]. Type species: *Osmia rufohirta* LATREILLE, 1811, by original designation.
- Osmia* subgenus *Erythrosmia* SCHMIEDEKNECHT, 1885 Palaeartic
- 1885 *Erythrosmia* SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 20 [886] [as subgenus of *Osmia* PANZER]. Type species: *Osmia andrenoides* SPINOLA, 1808, by designation of Cockerell (1922: 6).
- Osmia* subgenus *Helicosmia* THOMSON, 1872 Palaeartic | Nearctic | (Oriental)
- 1872 *Helicosmia* THOMSON, Skandinavien Hymenoptera, vol. 2, p. 233 [as subgenus of *Osmia* PANZER]. No species included, seven species included in Schmiedeknecht (1885: 22). Type species: *Apis aurulenta* PANZER, 1799 [= *Osmia aurulenta* (PANZER, 1799)], by designation of Michener (1941: 163).
- 1885 *Chalcosmia* SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 20 [886] [as subgenus of *Osmia* PANZER]. Type species: *Apis fulviventris* PANZER, 1798 (not SCOPOLI, 1763) [= *Osmia niveata* (FABRICIUS, 1804)], by designation of Sandhouse (1939: 13).—Synonymy in Michener (2000: 464).
- 1903 *Gnathosmia* ROBERTSON, Transactions of the American Entomological Society, 29: 165 [as genus]. Type species: *Osmia georgica* CRESSON, 1878, by original designation and monotypy, Nearctic.—Synonymy with subgenus *Chalcosmia* SCHMIEDEKNECHT, 1885 in Sandhouse (1939: 13).—Synonymy in Michener (2000: 464).
- 1950 *Cryptosmia* YASUMATSU & HIRASHIMA, Mushi (Fukuoka), 21: 14 [as subgenus of *Osmia* PANZER]. Type species: *Osmia satoi* YASUMATSU & HIRASHIMA, 1950, by original designation.—Synonymy in Michener (2000: 464).
- Osmia* subgenus *Hemiosmia* TKALCU, 1975 Palaeartic
- 1975 *Hemiosmia* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 72: 34 [as subgenus of *Osmia* PANZER]. Type species: *Osmia argropyga* PÉREZ, 1879, by original designation.
- 1979 *Exosmia* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 76: 321 [as subgenus of *Osmia* PANZER]. Type species: *Osmia difficilis* MORAWITZ, 1875, by original designation.—Synonymy in Michener (2000: 464).
- Osmia* subgenus *Melanosmia* SCHMIEDEKNECHT, 1885 Palaeartic | Nearctic
- 1885 *Melanosmia* SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 19 [885] [as subgenus of *Osmia* PANZER]. Type species: *Osmia fuciformis* LATREILLE, 1811 [= *Osmia xanthomelana* (KIRBY, 1802)], by designation of Sandhouse (1939: 33).
- 1899 *Nothosmia* ASHMEAD, Transactions of the American Entomological Society, 26: 75 [as genus]. Type species: *Osmia distincta* CRESSON, 1864, by original designation, Nearctic.—Synonymy in Michener (2000: 465).
- 1903 *Centrosmia* ROBERTSON, Transactions of the American Entomological Society, 29: 165, 166 [as genus]. Type species: *Osmia bucephala* CRESSON, 1864, by original designation and monotypy, Nearctic.—Synonymy in Michener (2000: 465).
- 1903 *Leucosmia* ROBERTSON, Transactions of the American Entomological Society, 29: 166, 171 [as genus]. Type species: *Osmia albiventris* CRESSON, 1864, by original designation and monotypy, Nearctic.—Synonymy with



subgenus *Nothosmia* ASHMEAD, 1899 in Hurd (1979: 2039). Synonymy in Michener (2000: 465).

- 1903 ***Monilosmia*** ROBERTSON, Transactions of the American Entomological Society, 29, 166, 171 [as genus]. Type species: *Osmia canadensis* CRESSON, 1864 [= *Osmia simillima* SMITH, 1853], by original designation and monotypy, Nearctic.—Synonymy in Michener (2000: 465).
- 1903 ***Xanthosmia*** ROBERTSON, Transactions of the American Entomological Society, 29: 166, 171 [as genus]. Type species: *Osmia cordata* ROBERTSON, 1902, by original designation and monotypy, Nearctic.—Synonymy with subgenus *Nothosmia* ASHMEAD, 1899 in Hurd (1979: 2039). Synonymy in Michener (2000: 465).
- 1958 ***Chenosmia*** SINHA, University of Kansas Science Bulletin, 39: 233 [as genus]. Type species: *Osmia penstemonis* COCKERELL, 1906, by original designation, Nearctic.—Synonymy in Michener (2000: 465).

*Osmia* subgenus ***Metallinella*** TKALCU, 1966 Palaeartic

- 1966 ***Metallinella*** TKALCU, Acta Entomologica Bohemoslovaca (Praha), 63: 200 [as genus]. Type species: *Osmia atrocaerulea* SCHILLING, 1849 [= *Osmia brevicornis* (FABRICIUS, 1798)], by original designation.—Synonymy with Nearctic subgenus *Cephalosmia* SLADEN, 1916 in Warncke (1991d: 283).

*Osmia* subgenus ***Monosmia*** TKALCU, 1974 Palaeartic

- 1974 ***Monosmia*** TKALCU, Beiträge zur Entomologie (Berlin), 24: 337 [as subgenus of *Osmia* PANZER]. Type species: *Osmia apicata* SMITH, 1853, by original designation.

*Osmia* subgenus ***Nasutosmia*** GRISWOLD & MICHENER, 1998 Palaeartic

- 1998 ***Nasutosmia*** GRISWOLD & MICHENER, Journal of the Kansas Entomological Society, 70: 225 [as subgenus of *Hoplitis* KLUG]. Type species: *Osmia nasuta* FRIESE, 1899, by original designation.

*Osmia* subgenus ***Neosmia*** TKALCU, 1974 Palaeartic

- 1974 ***Neosmia*** TKALCU, Beiträge zur Entomologie (Berlin), 24: 333 [as subgenus of *Osmia* PANZER]. Type species: *Osmia gracilicornis* PÉREZ, 1895, by original designation.

*Osmia* subgenus ***Orientosmia*** PETERS, 1978 Palaeartic

- 1978 ***Orientosmia*** PETERS, Senckenbergiana Biologica (Frankfurt), 58: 332 [as subgenus of *Osmia* PANZER]. Type species: *Osmia maxillaris* MORAWITZ, 1875, by original designation.

*Osmia* subgenus ***Osmia*** PANZER, 1806 Palaeartic | Nearctic

- 1806 Automatically established nominotypical subgeneric taxon (original description and type species are identical with those of genus *Osmia* PANZER).
- 1807 ***Amblys*** KLUG, Magazin für Insektenkunde, 6: 198 [as genus]. Type species: *Apis bicornis* LINNAEUS, 1758 [= *Osmia bicornis* (LINNAEUS, 1758)], by designation of Latreille (1811: 577).—Synonymy in Michener (2000: 467).



- 1872 *Ceratosmia* THOMSON, Skandinaviens Hymenoptera, vol. 2, p. 232 [as subgenus of *Osmia* PANZER]. Type species: *Apis bicornis* LINNAEUS, 1758 [= *Osmia bicornis* (LINNAEUS, 1758)], by designation of Sandhouse (1939: 9).—Synonymy in Michener (2000: 467).
- 1885 *Aceratosmia* SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 19 [885] [as subgenus of *Osmia* PANZER]. Type species: *Osmia emarginata* LEPELETIER, 1841, by designation of Sandhouse (1939: 9).—Synonymy in Michener (2000: 467).
- 1900 *Pachyosmia* DUCKE, Bericht des Naturwissenschaftlich-Medizinischen Vereins in Innsbruck, 25: 18 [as subgenus of *Osmia* PANZER]. Type species: *Apis rufa* LINNAEUS, 1758 [= *Osmia bicornis* (LINNAEUS, 1758)], by designation of Sandhouse (1939: 9).—Synonymy in Michener (2000: 467).

*Osmia* subgenus *Ozbekosmia* ZANDEN, 1994

Palaeartic

- 1993 *Heterosmia* TKALCU, Bulletin de la Société Entomologique de Mulhouse, July–September: 56 [as subgenus of *Osmia* PANZER]. NOMEN NUDUM according to Michener (2000: 468).
- 1994 *Ozbekosmia* ZANDEN, Reichenbachia (Dresden), 30: 168 [as subgenus of *Osmia* PANZER]. Type species: *Osmia avosetta* WARNCKE, 1988, by original designation.

*Osmia* subgenus *Pyrosmia* TKALCU, 1975

Palaeartic

- 1975 *Pyrosmia* TKALCU, Acta Rerum Naturalium Musei Nationalis Slovaci Bratislava, 21: 182 [as subgenus of *Osmia* PANZER]. Type species: *Osmia ferruginea* LATREILLE, 1811, by original designation.
- 1988 *Caerulosmia* ZANDEN, Zoologische Mededelingen (Leiden), 62: 123 [as subgenus of *Osmia* PANZER]. NOMEN NUDUM according to Michener (2000: 468).
- 1988 *Viridosmia* WARNCKE, Entomofauna (Ansfelden), 9: 5 [as subgenus of *Osmia* PANZER]. Type species: *Osmia saxicola* DUCKE, 1899, by original designation.—Synonymy in Michener (2000: 468).
- 1989 *Caerulosmia* ZANDEN, Entomologische Abhandlungen (Dresden), 53: 83 [as subgenus of *Osmia* PANZER]. Type species: *Osmia gallarum* SPINOLA, 1808, by original designation.—Synonymy in Michener (2000: 468).

*Osmia* subgenus *Tergosmia* WARNCKE, 1988

Palaeartic

- 1988 *Tergosmia* WARNCKE, Entomofauna (Ansfelden), 9: 390 [as subgenus of *Osmia* PANZER]. Type species: *Osmia tergestensis* DUCKE, 1897, by original designation.

Genus *Protosmia* DUCKE, 1900

Palaeartic | (Nearctic) | (Oriental)

- 1900 *Protosmia* DUCKE, Bericht des Naturwissenschaftlich-Medizinischen Vereins in Innsbruck, 25: 12 [as subgenus of *Osmia* PANZER]. Type species: *Heriades glutinosus* GIRAUD, 1871 [= *Protosmia glutinosa* (GIRAUD, 1871)], by designation of Michener (1943: 86) and Sandhouse (1943: 592).

*Protosmia* subgenus *Chelostomopsis* COCKERELL, 1925

Palaeartic | (Nearctic)

- 1925 *Chelostomopsis* COCKERELL, Proceedings of the California Academy of Sciences, 14: 205 [as genus]. Type species: *Chelynia rubifloris* COCKERELL, 1898 [= *Protosmia rubifloris* (COCKERELL, 1898)], by original designation, Nearctic.

- 1936 *Raphidostoma* COCKERELL, The Pan-Pacific Entomologist, 12: 133 [as genus]. Type species: *Raphidostoma ceanothi* COCKERELL, 1936 [= *Protosmia rubifloris* (COCKERELL, 1898)], by original designation, Nearctic.—Synonymy in Michener (2000: 470).

*Protosmia* subgenus *Nanosmia* GRISWOLD, 1998

Palearctic

- 1998 *Nanosmia* GRISWOLD, in: Griswold and Michener, Journal of the Kansas Entomological Society, 70: 241 [as subgenus of *Protosmia* DUCKE]. Type species: *Protosmia asensioi* GRISWOLD & PARKER, 1987, by original designation.

*Protosmia* subgenus *Protosmia* DUCKE, 1900

Palearctic

- 1900 Automatically established nominotypical subgeneric taxon (original description and type species are identical with those of genus *Protosmia* DUCKE).

- 1943 *Rhodostmia* MICHENER, Annals of the Entomological Society of America, 36: 85 [as subgenus of *Anthocopa* LEPELETIER & SERVILLE]. Type species: *Osmia paradoxa* FRIESE, 1899 [= *Protosmia paradoxa* (FRIESE, 1899)], by original designation.—Synonymy in Michener (2000: 471).

Genus *Pseudoheriades* PETERS, 1970

Palearctic | Afrotropic | Oriental

- 1970 *Pseudoheriades* PETERS, Entomologische Zeitschrift, 80: 153 [as genus]. Type species: *Heriades moricei* FRIESE, 1897 [= *Pseudoheriades moricei* (FRIESE, 1897)], by original designation.

- 1993 *Spinasternella* GUPTA & SHARMA, in: Gupta, Taxonomic studies on the Megachilidae of North-western India, p. 104 [p. 110 in the 1999 reprint] [as genus]. Type species: *Spinasternella mevatus* GUPTA, 1993 [= *Pseudoheriades mevatus* (GUPTA, 1993)], by original designation, Oriental.—Synonymy in Michener (2000: 471).

Genus *Stenoheriades* TKALCU, 1984

Palearctic | Afrotropic

- 1984 *Stenoheriades* TKALCU, Annotationes Zoologicae et Botanicae (Bratislava), 158: 1 [as subgenus of *Pseudoheriades* PETERS]. Type species: *Pseudoheriades hofferi* TKALCU, 1984 [= *Stenoheriades hofferi* (TKALCU, 1984)], by original designation.

Genus *Stenosmia* MICHENER, 1941

Palearctic

- 1941 *Stenosmia* MICHENER, American Midland Naturalist, 26: 165 [as genus]. Type species: *Osmia flavicornis* MORAWITZ, 1877 [= *Stenosmia flavicornis* (MORAWITZ, 1877)], by original designation.

Genus *Wainia* TKALCU, 1980

Palearctic | Afrotropic | (Oriental)

- 1980 *Wainia* TKALCU, Annotationes Zoologicae et Botanicae (Bratislava), 135: 1 [as genus]. Type species: *Wainia lonavlae* TKALCU, 1980, by original designation, Oriental.

*Wainia* subgenus *Caposmia* PETERS, 1984

Palaeartic | Afrotropic

- 1984 *Caposmia* PETERS, Entomofauna (Ansfelden), 5: 378 [as subgenus of *Osmia* PANZER]. Type species: *Osmia braunsi* PETERS, 1984 [= *Wainia braunsi* (PETERS, 1984)], by original designation, Afrotropic.
- 1991 *Eremoplosmia* ZANDEN, Reichenbachia (Dresden), 28: 164 [as subgenus of *Anthocopa* LEPELETIER & SERVILLE]. Type species: *Osmia eremoplana* MAVROMOUSTAKIS, 1949 [= *Wainia eremoplana* (MAVROMOUSTAKIS, 1949)], by original designation.—Accepted as subgenus of *Osmia* PANZER in Griswold and Michener (1998: 229, 231, 234) by mistake [see their erratum].—Synonymy in Michener (2000: 473).

## Species-group names

The species-group names are arranged alphabetically by genus and subgenus, and chronologically within each valid name. The agreement of gender of the species-group name with the generic name as requested by the Article 31.2 of the Code is enforced throughout the catalogue and hence the gender ending is changed if necessary. Griswold and Michener (1998) and Michener (2000) were used for the placement of the species-group taxa into the accepted genus-group taxa. We slightly deviate from their system by following European authors in the circumscription of *Osmia* (*Allosmia*) versus *Osmia* (*Erythrosmia*). In addition, we keep *Hoplitis* (*Micreriades*) as a distinct subgenus separated from *Hoplitis* (*Alcidamea*) and treat *Nasutosmia* as a subgenus of *Osmia* rather than of *Hoplitis*. These three deviations are justified by morphological characters and by preliminary results of a molecular phylogenetic study of the Osmiini (C. Praz, A. Müller, A. Widmer, B. Danforth, T. Griswold and S. Dorn, unpublished). All alternative published opinions concerning synonymy, rank as well as generic and subgeneric placement are disclosed citing one reference only (not necessarily the earliest). Extralimital genera of the Osmiini restricted to areas outside the Palaeartic and therefore not treated here are *Afroheriades* PETERS, *Ashmeadiella* COCKERELL, *Atoposmia* COCKERELL, *Bekilia* BENOIST, *Noteriades* COCKERELL, *Othinosmia* MICHENER and *Xeroheriades* GRISWOLD. For an overview of all currently accepted genera and subgenera of the world see Table 5. For details regarding genera and subgenera see the section on genus-group names.

Genus *Chelostoma* LATREILLE

Palaeartic subgenera: 5 Palaeartic species: 43

*Chelostoma* subgenus *Ceraheriades* TKALCU

Palaeartic species: 5

*carinoclypeatum* WU, 1993

*Chelostoma* (*Ceraheriades*)

- 1993 *Chelostoma carinoclypeatum* WU, Insects of the Hengduan Mountains Region, vol. 2, p. 1392, p. 1419. Type material: Holotype ♀, “Sichuan: Xiangchen, 3000 m” [China], IZCAS (Beijing); paratypes ♀♀.

**Distribution**—Northern Asia: RC(SW).

**Identification**—Keys, Descriptions: Wu (2006). **Note**: Male unknown.

*lamellum* WU, 1993

*Chelostoma* (*Ceraheriades*)

- 1993 *Chelostoma lamellum* WU, Insects of the Hengduan Mountains Region, vol. 2, p. 1390, p. 1418. Type material: Holotype ♂, “Sichuan: Xiangcheng, 3000 m” [China], IZCAS (Beijing); paratypes ♂♂, ♀♀.

**Distribution**—Northern Asia: RC(SW).

**Identification**—Keys, Descriptions: Wu (2006).

*longilabrare* WU, 2004

*Chelostoma (Ceraheriades)*

2004 *Chelostoma (Ceraheriades) longilabraris* WU, Acta Zootaxonomica Sinica, 29: 535. **Type material**: Holotype ♀, “Xizang, Mengkang (29.6°N, 98.5°E), 3250 m”, IZCAS (Beijing).

**Distribution**—Northern Asia: RC(WP).

**Identification**—Keys, Descriptions: Wu (2006). **Note**: Male unknown.

*petersi* (TKALCU, 1984)

*Chelostoma (Ceraheriades)*

1984 *Archeriades (Ceraheriades) petersi* TKALCU, Annotationes Zoologicae et Botanicae (Bratislava), 158: 5. **Type material**: Holotype ♀, “Kina S. Kansu, Sven Hedin Exp. Ctr. Asien” [China], ZMHB (Berlin). **Type species** of *Ceraheriades* TKALCU.

**Distribution**—Northern Asia: RC(NO).

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Misapplication**: *Heriades schmiideknechti* in Alfken (1936b: 7) is *Chelostoma petersi* (TKALCU). **Note**: Male unknown.

*sublamellum* WU, 1993

*Chelostoma (Ceraheriades)*

1993 *Chelostoma sublamellum* WU, Insects of the Hengduan Mountains region, vol. 2, p. 1391, p. 1418. **Type material**: Holotype ♀, “Yunnan: Dêqên, 2500–3180 m” [China], IZCAS (Beijing); paratypes ♂, ♀.

**Distribution**—Northern Asia: RC(SW).

**Identification**—Keys, Descriptions: Wu (2006).

*Chelostoma* subgenus *Chelostoma* LATREILLE

Palearctic species: 12

*carinocaudatum* WU, 2004

*Chelostoma (Chelostoma)*

2004 *Chelostoma (Chelostoma) carinocaudata* WU, Acta Zootaxonomica Sinica, 29: 534. **Type material**: Holotype ♀, “Yunnan, Zhongdian Tuyingcun (27.7°N, 99.7°E), 2700 m” [China], IZCAS (Beijing).

**Distribution**—Northern Asia: RC(SW).

**Identification**—Keys, Descriptions: Wu (2006). **Note**: Male unknown.

*carinulum* PÉREZ, 1895

*Chelostoma (Chelostoma)*

1895 *Chelostoma carinula* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 19. **Type material**: Syntypes ♂(♂), ♀(♀) [Algeria], MNHN (Paris).—Combination *Heriades carinulus* (PÉREZ) in Friese (1911b: 19).

**Distribution**—Northern Africa: DZ, MA, TN.

**Identification—Keys, Descriptions:** Friese (1898).

*diodon* SCHLETTERER, 1889

*Chelostoma (Chelostoma)*

1889 *Chelostoma diodon* SCHLETTERER, Zoologisches Jahrbuch für Systematik, 4: 627. Type material: Syntypes ♂(♂), ♀(♀), “Amasia” [Turkey], NMW (Wien).—Combination *Heriades diodon* (SCHLETTERER) in Dalla Torre (1896: 376).

**Distribution—Europe:** GR. **Southwestern Asia:** CY, IL, JOR, SYR, TR.

**Identification—Keys, Descriptions:** Friese (1898).

– subspecies *cypriacum* (MAVROMOUSTAKIS, 1951)

1951 *Eriades diodon cypriaca* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 4: 350. Type material: Holotype ♀, “Yerasa” [Cyprus], DAAN (Nicosia); paratypes ♂♂, ♀♀.

**Distribution—Southwestern Asia:** CY.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *diodon* SCHLETTERER, 1889

1889 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution— Europe:** GR. **Southwestern Asia:** IL, JOR, SYR, TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*dolosum* (BENOIST, 1935)

*Chelostoma (Chelostoma)*

1935 *Heriades dolosa* BENOIST, Bulletin de la Société Entomologique de France, 40: 279. Type material: ♀(♀), “Asie mineure: Brousse” [Turkey], MNHN (Paris).

**Distribution—Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*edentulum* PÉREZ, 1895

*Chelostoma (Chelostoma)*

1895 *Chelostoma edentulum* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 20. Type material: ♀(♀), “Alger” [Algeria], MNHN (Paris).—Combination *Heriades edentulus* (PÉREZ) in Friese (1911b: 22).

**Distribution— Europe:** E, P. **Northern Africa:** DZ, MA, TN.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*emarginatum* (NYLANDER, 1856)*Chelostoma* (*Chelostoma*)

- 1856 *Heriades emarginata* NYLANDER, Memoires de la Société des Sciences Naturelles de Cherbourg, 4: 109. Type material: Syntypes ♂(♂), ♀(♀), “Gallia meridionali” [France], MNHN (Paris).
- 1871 *Heriades appendiculata* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 8: 209. Type material: ♂(♂), “Calabria” [Italy], ZIN (St. Petersburg).—Synonymy in Warncke (1986: 73).
- 1872 *Heriades angustata* CHEVRIER, Mittheilungen der Schweizerischen Entomologischen Gesellschaft, 3: 505. Type material: Syntypes ♀♀, “Environs de Nyon” [Switzerland], MHNG (Genève) or NHMB (Basel).—Combination *Chelostoma angustatum* (CHEVRIER) in Schletterer (1889: 629).—Synonymy in Frey-Gessner (1905: 103).
- 1872 *Heriades intermedia* CHEVRIER, Mittheilungen der Schweizerischen Entomologischen Gesellschaft, 3: 506. Type material: Holotype ♀, “Environs de Nyon” [Switzerland], MHNG (Genève) or NHMB (Basel).—Synonymy with *Chelostoma foveolatum* (MORAWITZ) in Schletterer (1889: 636), rejected by Frey-Gessner (1905: 103). Synonymy with *Chelostoma emarginatum* (NYLANDER) in Frey-Gessner (1905: 103).
- 1879 *Chelostoma quadrifidum* KRIECHBAUMER, Entomologische Nachrichten (Berlin), 5: 312. Type material: Holotype ♂, “um Bozen” [Italy].—Synonymy with *Heriades appendiculatus* MORAWITZ in Dalla Torre (1896: 374).—Synonymy with *Chelostoma emarginatum* (NYLANDER) in Schwarz *et al.* (1996: 116).
- 1890 *Chelostoma incertum* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 44: 189. Type material: Syntypes ♂(♂), ♀(♀), “Bogan” [France], MNHN (Paris).—Combination *Heriades incertus* (PÉREZ) in Dalla Torre (1896: 378).—Synonymy in Benoist (1928d: 108).
- 1935 *Heriades ursina* BENOIST, Bulletin de la Société Entomologique de France, 40: 280. Type material: Lectotype ♂(♂), “Transcaucasie: Lenkoran” [Azerbaijan], MNHN (Paris).—Synonymy in Schwarz *et al.* (1996: 116).

**Distribution**—Europe: A, AZ, BG, BIH, CH, CZ, E, E, GR, H, HR, I, I(Si), MK, P, RO, SK, SLO. **Southwestern Asia**: IR, TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Benoist (1929a); Friese (1898); Scheuchl (1996); Schletterer (1889).

*florisomne* (LINNAEUS, 1758)*Chelostoma* (*Chelostoma*)

- 1758 *Apis florisomnis* LINNAEUS, Systema Naturae, 10<sup>th</sup> edn, vol. 1, p. 577. Type material: Lectotype ♂, by designation of Day (1979: 62), “in Europa” [Sweden], LSUK (London). Type species of *Chelostoma* LATREILLE.—Combination *Heriades florisomnis* (LINNAEUS) in Dalla Torre (1896: 376).
- 1767 *Apis maxillosa* LINNAEUS, Systema Naturae, 12<sup>th</sup> edn, vol. 1, p. 954. Type material: Holotype ♀, “in Europa” [Sweden], LSUK (London).—Combination *Chelostoma maxillosa* (LINNAEUS) in Latreille (1809: 162).—Synonymy in Kirby (1802: 252).
- 1841 *Chelostoma culmorum* LEPELETIER, Histoire Naturelle des Insectes, Hyménoptères, vol. 2, p. 408 [not seen]. Type material: Syntypes ♂(♂), ♀(♀).—Combination *Heriades florisomnis culmorum* (LEPELETIER) in Dalla Torre (1896: 377).—Synonymy in Schwarz *et al.* (1996: 116).
- 1932 *Heriades parumcristatus* ALFKEN, Konowia, 11: 113. Type material: Holotype ♀, “Ebelsbach am Main” [Germany], ZMHB (Berlin); paratypes ♂♂, ♀♀.—Synonymy with *Heriades maxillosus* (LINNAEUS) in Benoist (1945: 28).

**Distribution**—Europe: A, AL, B, BG, BIH, CH, CZ, D, DK, E, F, FIN, FL, GB, GE, GR, H, HR, I, L, LT, LV, NL, P, PL, RO, RUS, S, SK, SLO, UA. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1929a); Friese (1898); Medvedeva (1978); Scheuchl (1996); Schletterer (1889). **Misapplication**: In many older publications *Chelostoma florisomne* auct. [not (LINNAEUS,



1758)] is *Chelostoma campanularum* (KIRBY).

*grande* (NYLANDER, 1852)

*Chelostoma* (*Chelostoma*)

1852 *Heriades grandis* NYLANDER, Notiser ur Sällskapetets pro Fauna et Flora Fennica Förhandlingar, vol. 2, p. 277.

Type material: ♀(♀), “Helvetia” [Switzerland].

**Distribution**—**Europe**: A, CH, F, FL, GR, H, I, RO, RUS?, SCG?, SLO.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1929a); Friese (1898); Medvedeva (1978); Scheuchl (1996); Schletterer (1889).

*lucens* (BENOIST, 1928)

*Chelostoma* (*Chelostoma*)

1928 *Heriades lucens* BENOIST, Annales de la Société Entomologique de France, 97: 418. Type material: Syntypes

♀♀, “Asie mineure: Taurus” [Turkey], MNHN (Paris).

**Distribution**— **Europe**: BG, GR. **Southwestern Asia**: CY, IL, RL, TR.

**Identification**—**Keys, Descriptions**: Mavromoustakis (1951: 353–354).

*mocsaryi* SCHLETTERER, 1889

*Chelostoma* (*Chelostoma*)

1889 *Chelostoma mocsaryi* SCHLETTERER, Zoologisches Jahrbuch für Systematik, 4: 622. Type material: Syntypes ♂♂, “Dalmatien (Spalato), Süd-Russland (Krim), Kleinasien (Amasia, Aphrodisias), [Croatia, Ukraine, Turkey], NMW (Wien) and HNHM (Budapest).—Combination *Heriades mocsaryi* (SCHLETTERER) in Dalla Torre and Friese (1895: 69).

**Distribution**—**Europe**: BG, F, GR, HR, I, I(Si), RUS(SR), SLO, UA; Caucasus. **Southwestern Asia**: IL, TR.

**Identification**—**Keys, Descriptions**: Banaszak and Romasenko (2001); Benoist (1928e: 120, 1929a); Friese (1898); Medvedeva (1978).

*transversum* (FRIESE, 1897)

*Chelostoma* (*Chelostoma*)

1897 *Eriades transversus* FRIESE, Entomologische Nachrichten (Berlin), 23: 193. Type material: Syntypes ♂♂, “Graecia” [Greece], ZMHB (Berlin).

**Distribution**—**Europe**: BG, GR. **Southwestern Asia**: TR?.

**Identification**—**Keys, Descriptions**: Friese (1898).

*xizangense* WU, 1982

*Chelostoma* (*Chelostoma*)

1982 *Chelostoma xizangensis* WU, Insects of Xizang, vol. 2, p. 406, p. 424. Type material: Holotype ♀, “Xizang: Mangkam” [China], IZCAS (Beijing).

**Distribution**—**Northern Asia**: RC(WP).

**Identification**—**Keys, Descriptions**: Wu (2006). **Note**: Male unknown.

*Chelostoma* subgenus *Eochelostoma* GRISWOLD

Palearctic species: 1

*aureocinctum* (BINGHAM, 1897)

*Chelostoma* (*Eochelostoma*)

1897 *Heriades aureocincta* BINGHAM, The Fauna of British India including Ceylon and Burma. Hymenoptera, vol. 1, p. 508. Type material: Syntypes ♀♀, “Sikhim, 6000 ft.; Ta-u plateau, Tenasserim, 4000 ft.” [India; Burma], BMNH (London), ZMHB (Berlin). Type species of *Eochelostoma* GRISWOLD.

**Distribution**—Northern Asia: RC(SW). **Extralimital**: Oriental (India, Burma, Thailand).

**Identification**—Keys, Descriptions: Wu (2006).

*Chelostoma* subgenus *Foveosmia* WARNCKE

Palearctic species: 18

*bytinskii* (MAVROMOUSTAKIS, 1948)

*Chelostoma* (*Foveosmia*)

1948 *Heriades bytinskii* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 1: 179. Type material: Holotype ♂, “Jerusalem” [Israel], DAAN (Nicosia).—Combination *Osmia* (*Foveosmia*) *bytinskii* (MAVROMOUSTAKIS) in Warncke (1991c: 273).

**Distribution**—Southwestern Asia: IL, JOR, RL, TR.

**Identification**—Keys, Descriptions: Mavromoustakis (1954a: 96); Warncke (1991c).

*campanularum* (KIRBY, 1802)

*Chelostoma* (*Foveosmia*)

1791 *Apis florissomnis minima* CHRIST, Naturgeschichte, Klassifikation und Nomenclatur der Insekten, p. 197. NOMEN PRAEOCCUPATUM [not *Apis minima* PODA, 1761]. Type material: No original material known, [Germany].—Synonymy in Schwarz *et al.* (1996: 115) [not *Apis minima* PODA, 1761].

1802 *Apis Campanularum* KIRBY, Monographia Apum Angliae, vol. 2, p. 256. Type material: Lectotype ♀, by designation of Tkalcu (1967: 94), [United Kingdom]; paralectotype ♂.—Combination *Megachile campanularum* (KIRBY) in Latreille (1805: 52). Combination *Anthophora campanularum* (KIRBY) in Illiger (1806: 121). Combination *Heriades campanularum* (KIRBY) in Spinola (1808: 198).

**Distribution**—Europe: A, AL, B, BG, CH, CZ, D, DK, E, F, FIN, FL, GB, GE, GR, HR, I, I(Si), L, LT, LV, MK, NL, P, PL, RUS, S, SK, SLO, UA. Northern Africa: DZ. Southwestern Asia: TR.

**Extralimital**: Nearctic (Canada, USA) [Introduced].

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1929a); Eickwort (1980: 318); Friese (1898); Medvedeva (1978); Scheuchl (1996); Schletterer (1889); Schwarz and Gusenleitner (1999: 211–213); Schwarz and Gusenleitner (2000: 154–160); Stöckert (1929: 117–118). **Misapplication**: In many older publications *Chelostoma florissomme* auct. [not (LINNAEUS, 1758)] is *Chelostoma campanularum* (KIRBY).

*distinctum* (STÖCKHERT, 1929)

*Chelostoma* (*Foveosmia*)

1929 *Eriades distinctus* STÖCKHERT, Deutsche Entomologische Zeitschrift, 1929: 113. Type material: Syntypes ♂, ♀, “Pappenheim” [Germany], Stöckert Collection.

- 1935 *Heriades cantabrica* BENOIST, Bulletin de la Société Entomologique de France, 40: 279. Type material: Lectotype ♂, by designation of Zanden (1990: 52), “Espagne: province de Santander, Près de Potes sur les pentes des Picos de Europa” [Spain], MNHN (Paris).—Combination *Osmia cantabrica* (BENOIST) in Warncke (1988c: 104).—Synonymy in Warncke (1986: 73).

**Distribution**—Europe: A, B, BIH, BG, CH, CZ, D, E, F, FL, GR, H, HR, I, L, LT, LV, MK, NL, PL, RO, RUS, SCG, SK, SLO, UA; Caucasus. **Southwestern Asia**: TK.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Medvedeva (1978); Scheuchl (1996); Schwarz and Gusenleitner (1999: 211–213); Schwarz and Gusenleitner (2000: 154–160).

*forcipatum* (BENOIST, 1928)

*Chelostoma (Foveosmia)*

- 1928 *Heriades forcipata* BENOIST, Bulletin du Muséum d'Histoire Naturelle Paris, 34: 334. Type material: Lectotype ♂, by designation by Baker (Warncke, 1991c: 275), “Taurus” [Turkey], MNHN (Paris).—Combination *Osmia (Foveosmia) forcipata* (BENOIST) in Warncke (1991c: 275).

**Distribution**—Europe: GR. **Southwestern Asia**: IL, TR.

**Identification**—**Keys, Descriptions**: Warncke (1991c).

*foveolatum* (MORAWITZ, 1868)

*Chelostoma (Foveosmia)*

- 1868 *Heriades foveolata* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 5: 152. Type material: Syntypes ♂♂, “im Magnan-Thale” [France], “auch bei Lugano und Montreux” [Switzerland], ZIN (St. Petersburg). Type species of *Foveosmia* WARNCKE.—Combination *Osmia (Foveosmia) foveolata* (MORAWITZ) in Warncke (1991c: 275).

**Distribution**—Europe: AL, BIH, BG, CH, D, E, E, GE, GR, H, HR, I, P, PL, RUS, SK, SLO, UA. **Northern Africa**: ~~TN~~. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1929a); Friese (1898); Medvedeva (1978); Warncke (1991c); Scheuchl (1996); Schletterer (1889); Schwarz and Gusenleitner (2000: 154–160).

*galeridum* (WARNCKE, 1991)

*Chelostoma (Foveosmia)*

- 1991 *Osmia (Foveosmia) galerida* WARNCKE, Linzer Biologische Beiträge, 23: 274. Type material: Holotype ♂, “Anamuryon/Icel” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—**Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*garrulum* (WARNCKE, 1991)

*Chelostoma (Foveosmia)*

- 1991 *Osmia (Foveosmia) garrula* WARNCKE, Linzer Biologische Beiträge, 23: 270. Type material: Holotype ♀, “20 km W Sarikamis/Kars, in 2200 m” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—**Southwestern Asia**: TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*hellenicum* (BENOIST, 1938)

*Chelostoma (Foveosmia)*

1938 *Heriades hellenica* BENOIST, Bulletin de la Société Entomologique de France, 43: 87. **Type material:** Syntypes ♂(♂), ♀(♀), “Graecia” [Greece], MNHN (Paris).

**Distribution—Europe:** GR.

**Identification—Keys, Descriptions:** Schwarz and Gusenleitner (2000: 154–160).

*isabellinum* (WARNCKE, 1991)

*Chelostoma (Foveosmia)*

1991 *Osmia (Foveosmia) isabellina* WARNCKE, Linzer Biologische Beiträge, 23: 272. **Type material:** Holotype ♀, “10 km W Uludere/Hakkari” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution—Southwestern Asia:** IL, TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*josefi* SCHWARZ & GUSENLEITNER, 2000

*Chelostoma (Foveosmia)*

2000 *Chelostoma josefi* SCHWARZ & GUSENLEITNER, Entomofauna (Ansfelden), 21: 160. **Type material:** Holotype ♂, “Hakkari: 22 km S Beytisebap, 1300m” [Turkey], Schwarz Collection (Ansfelden); paratypes ♂, ♀♀.

**Distribution—Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*laticaudum* (BENOIST, 1938)

*Chelostoma (Foveosmia)*

1938 *Heriades laticauda* BENOIST, Bulletin de la Société Entomologique de France, 43: 86. **Type material:** Holotype ♂, “Graecia” [Greece], MNHN (Paris).—Combination *Osmia (Foveosmia) laticauda* (BENOIST) in Warncke (1991c: 277).

1948 *Heriades enslini* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 1: 177. **Type material:** Holotype ♂, “Nauplia” [Greece], DAAN (Nicosia).—Synonymy in Warncke (1991c: 277).

**Distribution—Europe:** GR.

**Identification—Keys, Descriptions:** Mavromoustakis (1954a: 96–97); Warncke (1991c).

*maidli* (BENOIST, 1935)

*Chelostoma (Foveosmia)*

1935 *Heriades Maidli* BENOIST, Bulletin de la Société Entomologique de France, 40: 279. **Type material:** ♂(♂), “Asie mineure: Olympa, Broussa” [Turkey], MNHN (Paris).—Combination *Osmia (Foveosmia) maidli* (BENOIST) in Warncke (1991c: 276).

**Distribution—Southwestern Asia:** SYR, TR.

**Identification—Keys, Descriptions:** Benoist (1938: 87); Warncke (1991c).

– subspecies *maidli* (BENOIST, 1935)

1935 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *seidenstueckeri* MAVROMOUSTAKIS, 1954

1954 *Chelostoma seidenstueckeri* MAVROMOUSTAKIS, Eos (Madrid), 30: 95. Type material: Holotype ♂, “Homs” [Syria], DAAN (Nicosia).—Combination *Osmia (Foveosmia) maidli seidenstueckeri* (MAVROMOUSTAKIS) in Warncke (1991c: 276).

**Distribution—Southwestern Asia:** SYR.

**Identification—Keys, Descriptions:** Warncke (1991c). **Note:** Female unknown.

*palaestinum* (BENOIST, 1935)

*Chelostoma (Foveosmia)*

1935 *Heriades palaestina* BENOIST, Bulletin de la Société Entomologique de France, 40: 277. Type material: Holotype ♀, “Palestine: Bethléem” [Palestine], MNHN (Paris).—Combination *Osmia (Foveosmia) palaestina* (BENOIST) in Warncke (1991c: 274).

1935 *Heriades Pici* BENOIST, Bulletin de la Société Entomologique de France, 40: 279. Type material: ♂(♂), “Palestine: Bethléem” [Palestine], MNHN (Paris).—Synonymy in Warncke (1991c: 274).

**Distribution—Southwestern Asia:** IL, RL, TK.

**Identification—Keys, Descriptions:** Mavromoustakis (1955b: 335–336); Warncke (1991c).

*schlettereri* (FRIESE, 1899)

*Chelostoma (Foveosmia)*

1899 *Osmia schlettereri* FRIESE, Entomologische Nachrichten (Berlin), 21: 327. Type material: Syntypes ♂♂, ♀♀, “Bethlehem” [Palestine], ZMHB (Berlin).—Combination *Osmia (Foveosmia) schlettereri* FRIESE in Warncke (1991c: 276).

**Distribution—Europe:** GR. **Southwestern Asia:** IL, SYR, TR.

**Identification—Keys, Descriptions:** Mavromoustakis (1954a: 97, 1955b: 335); Warncke (1991c).

*styriacum* SCHWARZ & GUSENLEITNER, 1999

*Chelostoma (Foveosmia)*

1999 *Chelostoma styriacum* SCHWARZ & GUSENLEITNER, Entomofauna (Ansfelden), 20: 211. Type material: Holotype ♂, “Steiermark, Dietersdorf bei Fürstenfeld, 260 m” [Austria], Schwarz Collection (Ansfelden); paratypes ♂♂.

**Distribution**—Europe: A, BG, GR, H, SCG, SLO. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Schwarz and Gusenleitner (2000: 154–160).

*subnitidum* (BENOIST, 1935)

*Chelostoma (Foveosmia)*

1935 *Heriades subnitida* BENOIST, Bulletin de la Société Entomologique de France, 40: 278. **Type material**: ♀(♀), “Asie Mineure: Taurus” [Turkey], MNHM (Paris).

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*torquillum* (WARNCKE, 1991)

*Chelostoma (Foveosmia)*

1991 *Osmia (Foveosmia) torquilla* WARNCKE, Linzer Biologische Beiträge, 23: 271. **Type material**: Holotype ♀, “Suvari-Halil-Pass in 2300 m östl. Beytüssebap/Hakkari” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*ventrale* SCHLETTERER, 1889

*Chelostoma (Foveosmia)*

1889 *Chelostoma ventrale* SCHLETTERER, Zoologisches Jahrbuch für Systematik, 4: 633. **Type material**: Syntypes ♂(♂), ♀(♀), “Nord-Ungarn (S. a. Uihely)” [Hungary], ZMHB (Berlin).—Combination *Heriades ventralis* (SCHLETTERER) in Dalla Torre and Friese (1895: 69).

1935 *Heriades brevifurca* BENOIST, Bulletin de la Société Entomologique de France, 40: 280. **Type material**: Holotype ♂, “Asie mineure: Taurus” [Turkey], MNHN (Paris).—**New synonymy** based on type material.

**Distribution**—Europe: A, BG, CZ, H, HR, PL, RO, SCG, SK, SLO, UA; E, F. **Southwestern Asia**: SYR, TR.

**Identification**—**Keys, Descriptions**: Banaszak and Romasenko (2001); Friese (1898); Medvedeva (1978); Schwarz and Gusenleitner (1999: 211–213); Schwarz and Gusenleitner (2000: 154–160); Stöckert (1929: 116–117).

*Chelostoma* subgenus *Gyrodromella* MICHENER

Palearctic species: 7

*confusum* (BENOIST, 1934)

*Chelostoma (Gyrodromella)*

1934 *Heriades confusa* BENOIST, Bulletin de la Société Entomologique de France, 39: 158. **Type material**: Syntypes ♂(♂), ♀(♀), “Environ d'Alger” [Algeria], MNHM (Paris).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*handlirschi* SCHLETTERER, 1889

*Chelostoma (Gyrodromella)*

1889 *Chelostoma handlirschi* SCHLETTERER, Zoologisches Jahrbuch für Systematik, 4: 624. **Type material**: Syntypes



♂(♂), ♀(♀), “Nord-Italien, Ungarn (Mehadia), Kleinasien” [Italy, Romania, Turkey], NMW (Wien) and HNHM (Budapest).—Combination *Heriades handlirschi* (SCHLETTERER) in Dalla Torre and Friese (1895: 69).

**Distribution**—Europe: A?, BG?, MK?, H?, I, RO, SK?. **Southwestern Asia**: TK.

**Identification**—Keys, Descriptions: Friese (1898).

*hebraeum* (BENOIST, 1935)

*Chelostoma (Gyrodromella)*

1935 *Heriades hebraea* BENOIST, Bulletin de la Société Entomologique de France, 40: 280. **Type material**: Holotype ♂, “Palestine: Jérusalem” [Israel], MNHN (Paris).

**Distribution**—Southwestern Asia: IL, TK.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*nasutum* PÉREZ, 1895

*Chelostoma (Gyrodromella)*

1895 *Chelostoma nasutum* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 20. **Type material**: Syntypes ♂(♂), ♀(♀), “Ze'niet” [Algeria], MNHN (Paris).—Combination *Chelostoma (Chelostoma) nasutum* PÉREZ Michener (2000: 40).

1897 *Eriades truncatus* FRIESE, Entomologische Nachrichten (Berlin), 23: 193. **Type material**: ♂(♂), “Algier” [Algeria], ZMHB (Berlin).—Synonymy in Benoist (1928d: 108).

**Distribution**—Europe: BG, E, F, GR. **Northern Africa**: DZ. **Southwestern Asia**: TR?.

**Identification**—Keys, Descriptions: Friese (1898).

*orientale* SCHLETTERER, 1890

*Chelostoma (Gyrodromella)*

1890 *Chelostoma orientale* SCHLETTERER, Entomologische Nachrichten (Berlin), 16: 236. **Type material**: Holotype ♀, “Araxes-Thal” [Armenia], NMW (Wien).—Combination *Heriades orientalis* (SCHLETTERER) in Friese (1911b: 23).

**Distribution**—Europe: ARM. **Southwestern Asia**: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*proximum* SCHLETTERER, 1889

*Chelostoma (Gyrodromella)*

1889 *Chelostoma proximum* SCHLETTERER, Zoologisches Jahrbuch für Systematik, 4: 643. **Type material**: Holotype ♂, “Transkaukasien (Kussari)” [Azerbaijan], NMW (Wien).—Combination *Heriades proximus* (SCHLETTERER) in Dalla Torre (1896: 379). Combination *Chelostoma (Chelostoma) proximum* SCHLETTERER in Wu (2006: 83).

**Distribution**—Europe: AZ, RUS, UA; Caucasus; F **Northern Asia**: RC, RUS(FS), TM. **Southwestern Asia**: IR, TR.

**Identification**—Keys, Descriptions: Banaszak and Romasenko (2001); Friese (1898); Medvedeva (1978); Romankova (1995); Schletterer (1889); Wu (2006).

*rapunculi* (LEPELETIER, 1841)*Chelostoma* (*Gyrodromella*)

- 1798 *Apis fuliginosa* PANZER, Faunae Insectorum Germanicae, 56: 16. NOMEN PRAEOCCUPATUM [not *Apis fuliginosa* SCOPOLI, 1770; not *Apis fuliginosa* CHRIST, 1791].
- 1841 *Heriades rapunculi* LEPELETIER, Histoire Naturelle des Insectes, vol. 2, p. 406 [not seen]. Type material: ♀(♀), [France].
- 1848 *Heriades nigricornis* NYLANDER, Notiser ur Sällskapetets pro Fauna et Flora Fennica Förhandlingar, vol. 1, p. 269. Type material: Syntypes ♂(♂), ♀(♀), “in Fennia” [Finland]. Type species of *Gyrodromella* MICHENER.—Synonymy in Benoist (1928d: 107).
- 1852 *Chelostoma inerme* EVERSMANN, Bulletin de la Société Impériale des Naturalistes de Moscou, 25, 74. Type material: Syntypes ♂(♂), ♀(♀), “in promont. Uralensib., in provinciis Orenburgensi et Simbirscensi” [Russia], ZIN (St. Petersburg).—Synonymy in Schwarz *et al.* (1996: 116).
- 1872 *Heriades casularum* CHEVRIER, Mittheilungen der Schweizerischen Entomologischen Gesellschaft, 3: 505. Type material: Syntypes ♀♀, “Environs de Nyon” [Switzerland], MHNG (Genève) or NHMB (Basel).—Synonymy with *Heriades nigricornis* NYLANDER in Schletterer (1889: 641).
- 1928 *Osmia* (*Acanthosmia*) *archanensis* COCKERELL, The Annals and Magazine of Natural History (London), ser. 10, 1: 353. Type material: Holotype ♀, “Archan” [Russia], BMNH (London).—Synonymy with *Chelostoma fuliginosum* (PANZER) in Tkalcu (1967: 94).
- 1928 *Osmia* (*Acanthosmia*) *platyodonta* COCKERELL, The Annals and Magazine of Natural History (London), ser. 10, 1: 352. Type material: Holotype ♂, “Irkutsk” [Russia], BMNH (London).—Synonymy with *Chelostoma fuliginosum* (PANZER) in Tkalcu (1967: 94).

**Distribution**—**Europe**: A, AND, B, BG, CH, CZ, D, DK, E, E, FIN, FL, GE, GR, H, HR, I, I(Si), L, LT, LV, MK, NL, P, PL, RUS, S, SCG, SK, SLO, UA. **Northern Africa**: DZ, MA. **Northern Asia**: KS, KZ, RUS(FS), TM, UZ. **Southwestern Asia**: TR. **Extralimital**: Nearctic (Canada, USA) [Introduced].

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1929a); Eickwort (1980: 318); Friese (1898); Medvedeva (1978); Romankova (1995); Scheuchl (1996); Schletterer (1889).

Genus *Haetosmia* POPOV

Palaeartic subgenera: – Palaeartic species: 3

*brachyura* (MORAWITZ, 1875)*Haetosmia*

- 1875 *Osmia brachyura* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 97. Type material: ♂(♂), “in deserto Kisilkum” [Turkestan].—Combination *Anthocopa* (*Haetosmia*) *brachyura* (MORAWITZ) in Zanden (1988b: 119).
- 1875 *Osmia latipes* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 97. Type material: ♀(♀), “in deserto Kisilkum” [Turkestan]. Type species of *Haetosmia* POPOV.—Combination *Anthocopa* (*Haetosmia*) *latipes* (MORAWITZ) in Popov (1952b: 103).—Synonymy in Peters (1974: 293).

**Distribution**—**Northern Asia**: TM, UZ?; Turkestan. **Southwestern Asia**: AFG, PAK; H, TR.

**Identification**—**Keys, Descriptions**: Ducke (1900); Peters (1974); Popov (1952b: 103).

– subspecies *altera* (PETERS, 1974)

1974 *Osmia (Haetosmia) brachyura altera* PETERS, Senckenbergiana Biologica (Frankfurt), 55: 294. Type material: Holotype ♀, “Gulbahar, 1700 m” [Afghanistan], SMFD (Frankfurt); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: AFG, PAK.

**Identification**—Keys, Descriptions: Peters (1974).

– subspecies *brachyura* (MORAWITZ, 1875)

1875 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Northern Asia: TM, UZ?; Turkestan.

**Identification**—Keys, Descriptions: Peters (1974).

*circumventa* (PETERS, 1974)

*Haetosmia*

1974 *Osmia (Haetosmia) circumventa* PETERS, Senckenbergiana Biologica (Frankfurt), 55: 297. Type material: Holotype ♂, “Gran Canaria, Maspalomas, Dünen” [Canary Islands], SMFD (Frankfurt); paratypes ♂♂, ♀♀.—Combination *Anthocopa (Haetosmia) circumventa* (PETERS) in Zanden (1988b: 119).

**Distribution**—Northern Africa: E(Ca), ET, LAR, MA. **Southwestern Asia**: UAE. **Extralimital**: Afrotropic (Sudan).

**Identification**—Keys, Descriptions: Peters (1974, 1975: 54–55).

*vehti* (PETERS, 1974)

*Haetosmia*

1974 *Osmia (Haetosmia) vehti* PETERS, Senckenbergiana Biologica (Frankfurt), 55: 294. Type material: Holotype ♂, “Teheran-Evin, Institutsgeleände” [Iran], SMFD (Frankfurt); paratypes ♂♂, ♀♀.—Combination *Anthocopa (Haetosmia) vehti* (PETERS) in Zanden (1988b: 119).

**Distribution**—Europe: GR. **Southwestern Asia**: IL, IR, TR.

**Identification**—Keys, Descriptions: Mavromoustakis (1954b: 267–268, as *Osmia latipes* var.); Peters (1974).

Genus *Heriades* SPINOLA

Palearctic subgenera: 3 Palearctic species: 22

*Heriades* subgenus *Heriades* SPINOLA

Palearctic species: 9

*cancavus* WU, 1982

*Heriades (Heriades)*

1982 *Heriades cancavus* WU, Insects of Xizang, vol. 2, p. 406, p. 424. Type material: Holotype ♂, “Xizang: Chagyab, 3600 m” [China], IZCAS (Beijing).

**Distribution**—Northern Asia: RC(WP).

**Identification**—Keys, Descriptions: Wu (2006). **Note**: Female unknown.

*crenulatus* NYLANDER, 1856*Heriades (Heriades)*

1856 *Heriades crenulatus* NYLANDER, Memoires de la Société des Sciences Naturelles de Cherbourg, 4: 111. Type material: ♀(♀), “prope Parisios” [France].

**Distribution**—Europe: A, BG, BIH, CH, CZ, D, E, E(Ba), E, GR, H, HR, I, I(Sa), I(Si), M, MK, P, PL, RO, RUS, SK, SLO, UA; Caucasus.

**Northern Africa**: DZ, MA, TN. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1929a); Friese (1898); Medvedeva (1978); Scheuchl (1996); Schletterer (1889).

*fertoni* BENOIST, 1938*Heriades (Heriades)*

1938 *Heriades Fertoni* BENOIST, Bulletin de la Société Entomologique de France, 43: 85. Type material: ♀(♀), “Dellys” [Algeria], MNHN (Paris).

**Distribution**—Northern Africa: DZ.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*hierosolomitus* BENOIST, 1935*Heriades (Heriades)*

1935 *Heriades hierosolomita* BENOIST, Bulletin de la Société Entomologique de France, 40: 277. Type material: ♀(♀), “Palestine: Jérusalem” [Israel], MNHN (Paris).

**Distribution**—Southwestern Asia: IL.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*labiatus* PÉREZ, 1895*Heriades (Heriades)*

1895 *Heriades labiatus* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 21. Type material: ♀(♀), [Algeria], MNHN (Paris).

**Distribution**—Europe: E. **Northern Africa**: DZ.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*parvulus* BINGHAM, 1897*Heriades (Heriades)*

1897 *Heriades parvula* BINGHAM, The Fauna of British India including Ceylon and Burma, Hymenoptera, vol. 1, p. 508. Type material: ♀(♀), “Rangoon, Burma” [Burma], BMNH (London).

1925 *Heriades binghami* DOVER, The Annals and Magazine of Natural History (London), ser. 9, 15: 230. NOMEN NOVUM with same type specimen for presumptively preoccupied *Heriades parvulus* BINGHAM, 1897 [not unavailable *Megachile parvula* CAMERON, 1896].

**Distribution**—Northern Asia: RC(SW). **Extralimital**: Oriental (Burma).

**Identification**—**Keys, Descriptions**: Wu (2006). **Note**: Male unknown.

*rubicolus* PÉREZ, 1890

*Heriades* (*Heriades*)

- 1890 *Heriades rubicola* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 44: 190. Type material: Syntypes ♂(♂), ♀(♀), “Bordeaux, Toulouse” [France], MNHN (Paris).
- 1892 *Heriades copetica* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 26: 149. Type material: Holotype ♂, “Germab” [Kazakhstan], ZIN (St. Petersburg).—Synonymy in Zanden (1994a: 170).
- 1931 *Heriades crenulatus aurantifer* COCKERELL, The Entomologist (London), 64: 159. Type material: Lectotype ♀, by designation of Zanden (1994a: 170), “Asni” [Morocco], BMNH (London); paralectotype ♂.—Synonymy in Zanden (1994a: 170).

**Distribution**—Europe: A, BG, CH, E, E(Ba), E, GR, HR, I, I(Sa), M, MK, P, SK, SLO. Northern Africa: DZ, MA, TN. Northern Asia: KZ, TM. Southwestern Asia: CY, IL, TR.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Benoist (1929a); Friese (1898); Popov (1960b: 254–255).

*truncorum* (LINNAEUS, 1758)

*Heriades* (*Heriades*)

- 1758 *Apis truncorum* LINNAEUS, Systema Naturae, 10<sup>th</sup> edn, vol. 1, p. 575. Type material: Lectotype ♀, by designation of Kirby (1802: 259) [see also Day (1979: 75)], “in Europa” [Sweden], LSUK (London). Type species of *Heriades* SPINOLA.—Combination *Hylaeus truncorum* (LINNAEUS) in Fabricius (1793: 305). Combination *Megachile truncorum* (LINNAEUS) in Walckenaer (1802: 135). Combination *Anthophora truncorum* (LINNAEUS) in Fabricius (1804: 379). Combination *Anthidium truncorum* (LINNAEUS) in Panzer (1806: 252). Combination *Trachusa truncorum* (LINNAEUS) in Jurine (1807: 252). Combination *Trypetes truncorum* (LINNAEUS) in Schenck (1861: 347).
- 1802 *Apis xanthogastris* SCHRANK, Fauna Boica, vol. 2, p. 381. Type material: ♀(♀), “um Ingolstadt” [Germany].—Synonymy in Warncke (1986: 115).
- 1841 *Osmia punctatissima* LEPELETIER, Histoire Naturelle des Insectes, Hyménoptères, vol. 2, p. 329 [not seen]. Type material: Lectotype ♂, by designation of Peters (1971: 51), “environs de Paris” [France], MNHN (Paris).—Synonymy in Benoist (1931: 44).
- 1889 *Heriades mordax* SCHLETTERER, Zoologisches Jahrbuch für Systematik, 4: 661. Type material: Holotype ♀, [North Africa?], ZMHB (Berlin).—Synonymy in Schwarz *et al.* (1996: 115).

**Distribution**—Europe: A, AL, ARM, B, BG, CH, CZ, D, DK, E, F, FIN, FL, GE, GB, GR, H, HR, I, I(Sa), I(Si), L, LT, LV, MK, NL, P, PL, RO, RUS, S, SK, SLO, UA. Northern Africa: DZ. Northern Asia: KS, KZ, RUS(FS). Southwestern Asia: CY, IL, SYR, TR.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1929a); Friese (1898); Medvedeva (1978); Romankova (1995); Scheuchl (1996); Schletterer (1889).

*wilmattae* COCKERELL, 1931

*Heriades* (*Heriades*)

- 1931 *Heriades wilmattae* COCKERELL, The Entomologist (London), 64: 159. Type material: Lectotype ♀, by designation of Zanden (1994a: 169), “Arround” [Morocco], BMNH (London).
- 1931 *Heriades politulus* COCKERELL, The Entomologist (London), 64: 160. Type material: Lectotype ♀, by designation of Zanden (1994a: 169), “Ifrane” [Morocco], BMNH (London).—Synonymy in Zanden (1994a: 169).

**Distribution**—Northern Africa: MA.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*Heriades* subgenus *Michenerella* KROMBEIN

Palearctic species: 12

*alfkeni* BENOIST, 1938

*Heriades (Michenerella)*

1938 *Heriades Alfkeni* BENOIST, Bulletin de la Société Entomologique de France, 43: 85. Type material: ♂(♂), “Turkestan: Tartugai près de Perowsk” [Kazakhstan], MNHN (Paris).

**Distribution—Northern Asia:** KZ.

**Identification—Keys, Descriptions:** Popov (1955: 283–284). **Note:** Female unknown.

*ammodendri* POPOV, 1960

*Heriades (Michenerella)*

1960 *Heriades (Eutrypetes) ammodendri* POPOV, Trudy Zoologicheskogo Instituta Akademija Nauk SSSR (Leningrad [St. Petersburg]), 27: 256. Type material: Syntypes ♀♀, “Orta-Kuyu (Karakum desert)”, “River Kirpili, 100 km northeast Gyzylarbat” [Turkmenistan], ZIN (St. Petersburg).

**Distribution—Northern Asia:** TM.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*dalmaticus* MAIDL, 1922

*Heriades (Michenerella)*

1922 *Eriades (Trypetes) dalmaticus* MAIDL, Annalen des Naturhistorischen Museums in Wien, 35: 93. Type material: Holotype ♀, “Spalato” [Croatia], NMW (Wien).—Combination *Heriades (Eutrypetes) dalmaticus* MAIDL in Mavromoustakis (1958: 443).

**Distribution—Europe:** BG, GR, HR, I(Si), M. **Southwestern Asia:** CY, IL, SYR, RL, TR.

**Identification—Keys, Descriptions:** Mavromoustakis (1958: 443).

– subspecies *dalmaticus* MAIDL, 1922

1922 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** BG, GR, HR, I(Si), M. **Southwestern Asia:** IL, SYR, RL, TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *troodicus* MAVROMOUSTAKIS, 1951

1951 *Eriades dalmatica troodica* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 4: 352. Type material: Holotype ♀, “Mt. Troodos, open slopes, 5500 ft.” [Cyprus], DAAN (Nicosia); paratypes ♀♀.



**Distribution**—Southwestern Asia: CY.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*discrepans* BENOIST, 1938

*Heriades (Michenerella)*

1938 *Heriades discrepans* BENOIST, Bulletin de la Société Entomologique de France, 43: 88. Type material: ♀(♀), “La Calle” [Algeria], MNHN (Paris).

**Distribution**—Northern Africa: DZ, MA, TN.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*hissaricus* POPOV, 1955

*Heriades (Michenerella)*

1955 *Heriades (Eutrypetes) hissarica* POPOV, Entomologicheskoe Obozrenie, 34: 285. Type material: Syntypes ♀♀, “Kondara, 1100 m” [Tajikistan], ZIN (St. Petersburg); paratypes ♀♀.

**Distribution**—Northern Asia: TJ. Southwestern Asia: TR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*latipes* POPOV, 1960

*Heriades (Michenerella)*

1960 *Heriades (Eutrypetes) latipes* POPOV, Entomologicheskoe Obozrenie, 39: 427. Type material: Syntypes ♂♂, ♀♀, “Tartugai”, “Baigakum near Juleck” [Kazakhstan], ZIN (St. Petersburg).

**Distribution**—Northern Asia: KZ.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*longicornis* POPOV, 1960

*Heriades (Michenerella)*

1960 *Heriades longicornis* POPOV, Entomologicheskoe Obozrenie, 39: 424. Type material: Syntypes ♂♂, ♀, “Tartugai” [Kazakhstan], ZIN (St. Petersburg).

**Distribution**—Northern Asia: KZ.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*punctuliferus* SCHLETTERER, 1889

*Heriades (Michenerella)*

1889 *Heriades punctulifera* SCHLETTERER, Zoologisches Jahrbuch für Systematik, 4: 670. Type material: Syntypes ♂♂, “Adalia in Kleinasien” [Turkey], ZMHB (Berlin).

1928 *Heriades syriaca* BENOIST, Bulletin du Muséum d'Histoire Naturelle Paris, 34: 335. Type material: Holotype ♀, “Ksana” [Syria], MNHN (Paris).—Synonymy in Zanden (1995: 429).

**Distribution**—Europe: GR. Southwestern Asia: SYR, TR.

**Identification**—**Keys, Descriptions:** Friese (1898).

*sauteri* COCKERELL, 1911*Heriades (Michenerella)*

- 1911 *Heriades sauteri* COCKERELL, The Annals and Magazine of Natural History (London), ser. 8, 7: 314. Type material: Syntypes ♂(♂), ♀(♀), “Formosa” [Taiwan], ZMHB (Berlin), San Francisco.—Combination *Heriades (Heriades) sauteri* COCKERELL in Wu (2006: 77).

**Distribution**—Northern Asia: RC(SW), TW.

**Identification**—Keys, Descriptions: Wu (2006).

*shestakovi* POPOV, 1960*Heriades (Michenerella)*

- 1960 *Heriades (Eutrypetes) shestakovi* POPOV, Trudy Zoologicheskogo Instituta Akademija Nauk SSSR (Leningrad [St. Petersburg]), 27: 257. Type material: Syntypes ♂♂, ♀♀, “Uch-Aji in the Bairam-Alpine region”, “Farab, 8 km from Chardzhou” [Turkmenistan], ZIN (St. Petersburg).

**Distribution**—Northern Asia: TM.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*turcomanicus* POPOV, 1955*Heriades (Michenerella)*

- 1955 *Heriades (Eutrypetes) turcomanica* POPOV, Entomologicheskoe Obozrenie, 34: 281. Type material: Syntypes ♂♂, ♀, “Southern Turkmenistan, Iman-Baba” [Turkmenistan], ZIN (St. Petersburg).

**Distribution**—Northern Asia: TM.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*yunnanensis* WU, 1993*Heriades (Michenerella)*

- 1993 *Heriades yunnanensis* WU, Insects of the Hengduan Mountains Region, vol. 2, p. 1389, p. 1418. Type material: Holotype ♂, “Yunnan, Yongshengludei, 2250 m” [China], IZCAS (Beijing); paratypes ♂, ♀.

**Distribution**—Northern Asia: RC(SW).

**Identification**—Keys, Descriptions: Wu (2006).

*Heriades* subgenus *Rhopaloheriades* GRISWOLD & MICHENER

Palearctic species: 1

*clavicornis* MORAWITZ, 1875*Heriades (Rhopaloheriades)*

- 1875 *Heriades clavicornis* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 75. Type material: Lectotype ♂, by designation of Zanden (1994a: 171), “prope Warsaminor” [Turkestan], ZMUM (Moscow); paralectotype ♂. Type species of *Rhopaloheriades* GRISWOLD & MICHENER.—Combination *Heriades (Eutrypetes) clavicornis* MORAWITZ in Zanden (1989: 79).

**Distribution**—Europe: ARM, GR. Northern Asia: TJ; Turkestan. Southwestern Asia: CY, IL, RL, SYR, TR.

**Identification**—Keys, Descriptions: Friese (1898); Mavromoustakis (1948a: 180).

– subspecies *armeniacus* POPOV, 1956

1956 *Heriades clavicornis armeniacus* POPOV, Entomologicheskoe Obozrenie, 35: 165. Type material: Syntypes ♂♂, "Zeravshan" [Armenia ], ZIN (St. Petersburg).

**Distribution—Europe:** ARM.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Female unknown.

– subspecies *clavicornis* MORAWITZ, 1875

1875 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** GR. **Northern Asia:** TJ; Turkestan. **Southwestern Asia:** CY, IL, RL, SYR, TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

Genus *Hofferia* TKALCU

Palaeartic subgenera: – Palaeartic species: 2

*mauritanica* (LUCAS, 1849)

*Hofferia*

1849 *Chelostoma mauritanicum* LUCAS, Exploration scientifique de l'Algérie, p. 205. Type material: Holotype ♀, "lac Tonga" [Algeria].—Combination *Heriades mauritanicus* (LUCAS) in Friese (1911b: 16).

1897 *Eriades obtusus* FRIESE, Entomologische Nachrichten (Berlin), 23: 193. Type material: Lectotype ♂, by designation of Tkalcu (1984b: 21), "Algeria" [Algeria]; ZMHB (Berlin).—Synonymy in Alfken (1914: 126).

**Distribution—Northern Africa:** DZ, MA, TN.

**Identification—Keys, Descriptions:** Benoist (1928g: 333); Friese (1898); Tkalcu (1984b: 21).

*schmiedeknechti* (SCHLETTERER, 1889)

*Hofferia*

1889 *Chelostoma schmiedeknechti* SCHLETTERER, Zoologisches Jahrbuch für Systematik, 4: 638. Type material: Holotype ♀, "Süd-Ungarn (Mehadia)" [Romania], HNHM (Budapest). Type species of *Hofferia* TKALCU.—Combination *Heriades schmiedeknechti* (SCHLETTERER) in Friese (1911b: 22).

1928 *Heriades tumida* BENOIST, Bulletin du Muséum d'Histoire Naturelle Paris, 34: 332. Type material: Holotype ♂, "Taurus" [Turkey], MNHN (Paris).—Synonymy in Zanden (1989: 80).

1928 *Heriades gibba* BENOIST, Bulletin du Muséum d'Histoire Naturelle Paris, 34: 333. Type material: Holotype ♂, "Taurus" [Turkey], MNHN (Paris).—Synonymy in Zanden (1989: 80).

**Distribution—Europe:** BG, GR, MK, RO. **Southwestern Asia:** IL, SYR, TR.

**Identification—Keys, Descriptions:** Tkalcu (1984b: 15–19, 21). **Misapplication:** *Heriades schmiedeknechti* in Alfken (1936b: 7) is *Chelostoma petersi* (TKALCU).

Genus *Hoplitis* KLUG Palaeartic subgenera: 20 Palaeartic species: 282

Subgeneric placement uncertain Palaeartic species: 1

*excisa* MORAWITZ, 1880 *Hoplitis*

1880 *Osmia excisa* MORAWITZ, Bulletin de l'Académie Impériale des Sciences de St.-Petersbourg, 26: 385. Type material: ♀(♀), “Ordoss (Chuan-che)” [China].—Combination *Osmia (Stenosmia) excisa* MORAWITZ in Mavromoustakis (1954b: 268). Combination *Osmia (Osmia) excisa* MORAWITZ in Wu (2006: 48).

**Distribution**—Northern Asia: RC.

**Identification**—**Keys, Descriptions**: Mavromoustakis (1954b: 267); Wu (2006). **Note**: Male unknown.

*Hoplitis* subgenus *Alcidamea* CRESSON Palaeartic species: 51

*abnormis* ZANDEN, 1992 *Hoplitis (Alcidamea)*

1992 *Hoplitis (Liosmia) abnormis* ZANDEN, Linzer Biologische Beiträge, 24: 821. Type material: Holotype ♂, “Chelmos, Pelopon., 1900 m” [Greece], RMNH (Leiden); paratypes ♂♂.

**Distribution**—Europe: GR. Southwestern Asia: IL.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*acanthophora* (MORAWITZ, 1875) *Hoplitis (Alcidamea)*

1875 *Osmia acanthophora* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 101. Type material: ♂(♂), “in valle Sarafschan” [Tajikistan].—Combination *Osmia (Osmia) acanthophora* MORAWITZ in Friese (1911b: 84). Combination *Hoplitis (Acanthosmia) acanthophora* (MORAWITZ) in Popov (1960a: 430). Combination *Osmia (Alcidamea) acanthophora* MORAWITZ in Warncke (1991h: 720).

**Distribution**—Northern Asia: TJ. Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: Ducke (1900); Popov (1960a: 430–432).

*acuticornis* (DUFOR & PERRIS, 1840) *Hoplitis (Alcidamea)*

1840 *Osmia acuticornis* DUFOR & PERRIS, Annales de la Société Entomologique de France, 9: 14. Type material: Syntypes ♂(♂), ♀(♀), [France].—Combination *Osmia (Alcidamea) acuticornis* DUFOR & PERRIS in Warncke (1991h: 723).

1877 *Osmia dentiventris* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 14: 45. Type material: Holotype ♂, “Nikolajewka (Novaja Derewnja)” [Armenia], ZIN (St. Petersburg).—Combination *Osmia (Acanthosmia) dentiventris* MORAWITZ in Schmiedeknecht (1885: 21 [887]).—Synonymy in Friese (1893: 355).

**Distribution**—Europe: A, AL, ARM, CH, CZ, D, E, E(Ba), E, GR, GR(Cr), H, I, I(Sa), I(Si), L, MK, P, RO, RUS, SK, SLO, UA. **Northern Africa**: DZ, E(Ca), P(Ma), TN. **Northern Asia**: KZ, TJ, TM. **Southwestern Asia**: CY, IR, JOR, TR.

**Identification—Keys, Descriptions:** Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Warncke (1991h).

– subspecies *acuticornis* (DUFOUR & PERRIS, 1840)

1840 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** A, AL, ARM, CH, CZ, D, E, GR, GR(Cr), H, I, I(Sa), I(Si), L, MK, RO, RUS, SK, SLO, UA. **Northern Africa:** DZ, P(Ma)?, TN. **Southwestern Asia:** CY, IR, JOR, TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *brunneipes* (PETERS, 1975)

1975 *Osmia acuticornis brunneipes* PETERS, Senckenbergiana Biologica (Frankfurt), 56: 50. **Type material:** Holotype ♀, “Gran Canaria: San Bartolomé” [Spain: Canary Islands], SMFD (Frankfurt); paratypes ♂, ♀♀.

**Distribution—Northern Africa:** E(Ca), P(Ma)?.

**Identification—Keys, Descriptions:** Tkalcu (1993b: 811).

– subspecies *gilva* ZANDEN, 1994

1994 *Hoplitis (Alcidamea) acuticornis gilva* ZANDEN, Reichenbachia (Dresden), 30: 169. **Type material:** Holotype ♀, “Tschatkal-Gebirge, Arkit, 1250 m” [Tajikistan], ZMUM (Moscow); paratype ♀.

**Distribution—Northern Asia:** KZ, TJ, TM.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

– subspecies *hispanica* (SCHMIEDEKNECHT, 1886)

1886 *Osmia (Acanthosmia) hispanica* SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 140 [1006]. **Type material:** Syntypes ♂(♂), ♀(♀), [Spain].—Synonymy with *Osmia acuticornis* DUFOUR & PERRIS in Dalla Torre (1896: 383). Synonymy with *Osmia dentiventris* MORAWITZ in Friese (1891: 260).—Combination *Osmia (Alcidamea) acuticornis hispanica* SCHMIEDEKNECHT in Warncke (1991h: 724).

**Distribution—Europe:** E, E(Ba), P.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*alexandrina* (WARNCKE, 1991)

*Hoplitis (Alcidamea)*

1991 *Osmia (Alcidamea) alexandrina* WARNCKE, Linzer Biologische Beiträge, 23: 728. **Type material:** Holotype ♀, “Zisterne 12 km W Mizpe Ramon” [Israel], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution—Southwestern Asia:** IL, JOR, SYR, UAE.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*antennata* (MORAWITZ, 1876)*Hoplitis (Alcidamea)*

- 1876 *Osmia antennata* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 12: 43. Type material: Lectotype ♂, by designation of Warncke (1991h: 723), “auf dem Berge Schaffnabadell” [Armenia], ZIN (St. Petersburg).—Combination *Osmia (Alcidamea) antennata* MORAWITZ in Warncke (1991h: 723).

**Distribution**—Europe: ARM. Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: DUCKE (1900); SCHMIEDEKNECHT (1885–1886); WARNCKE (1991h).

*arenivaga* ZANDEN, 1996*Hoplitis (Alcidamea)*

- 1996 *Hoplitis (Alcidamea) arenivaga* ZANDEN, Linzer Biologische Beiträge, 28: 886. Type material: Holotype ♂, “80 km N.E. Aqaba (Strasse nach Amman)” [Jordan], OLML (Linz).

**Distribution**—Southwestern Asia: JOR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*beijingensis* WU, 1987*Hoplitis (Alcidamea)*

- 1987 *Hoplitis (Liosmia) beijingensis* WU, Acta Entomologica Sinica (Beijing), 30: 443, 448. Type material: Holotype ♂, “Beijing: Quinlunqiao” [China], IZCAS (Beijing); paratypes ♂♂, ♀♀.

**Distribution**—Northern Asia: RC(NO).

**Identification**—**Keys, Descriptions**: WU (2006).

*bicallosa* (MORAWITZ, 1876)*Hoplitis (Alcidamea)*

- 1876 *Osmia bicallosa* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 12: 44. Type material: Lectotype ♀, by designation of Warncke (1991h: 726), “Borshom” [Georgia], ZIN (St. Petersburg).—Combination *Hoplitis (Acanthosmia) bicallosa* (MORAWITZ) in ZANDEN (1988b: 120). Combination *Osmia (Alcidamea) bicallosa* MORAWITZ in Warncke (1991h: 726).

**Distribution**—Europe: GE, GR. Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: DUCKE (1900); SCHMIEDEKNECHT (1885–1886); WARNCKE (1991h).

*bispinosa* ZANDEN, 1992*Hoplitis (Alcidamea)*

- 1992 *Hoplitis (Liosmia) bispinosa* ZANDEN, Linzer Biologische Beiträge, 24: 820. Type material: Holotype ♂, “Yüksekova, 2250 m” [Turkey], RMNH (Leiden); paratypes ♂♂.

**Distribution**—Europe: GR. Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.



*camelina* (BENOIST, 1934)*Hoplitis (Alcidamea)*

- 1934 *Osmia camelina* BENOIST, Bulletin de la Société Entomologique de France, 39: 106. Type material: Holotype ♀, “Ain Leuh” [Morocco], MNHN (Paris).—Combination *Osmia (Alcidamea) acuticornis camelina* BENOIST in Warncke (1991h: 724). Combination *Hoplitis (Alcidamea) camelina* (BENOIST) in Zanden (1996b: 884).
- 1991 *Osmia (Alcidamea) acuticornis penelope* WARNCKE, Linzer Biologische Beiträge, 23: 724. Type material: Holotype ♂, “7 km SW Zarzis” [Tunisia], OLML (Linz); paratypes ♂♂.—Synonymy in Zanden (1996b: 884).

**Distribution**—Northern Africa: MA, TN.**Identification**—**Keys, Descriptions**: Warncke (1991h); Zanden (1985: 63).*capsulifer* POPOV, 1960*Hoplitis (Alcidamea)*

- 1960 *Hoplitis (Liosmia) capsulifer* POPOV, Izvestiya Otdeleniya Sel'skochozyaistvennich i Biologicheskich Nauk, 2: 73. Type material: Syntypes ♂♂, ♀♀, [Tajikistan], ZIN (St. Petersburg).—Combination *Osmia (Alcidamea) capsulifer* (POPOV) in Warncke (1991h: 718).

**Distribution**—Northern Asia: KZ, TJ; Central Asian Ranges.**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.*caucasica* (FRIESE, 1920)*Hoplitis (Alcidamea)*

- 1920 *Osmia caucasica* FRIESE, Deutsche Entomologische Zeitschrift (Berlin), 1920: 51. Type material: Syntypes ♀♀, “Murut im Kaukasus” [Caucasus], ZMHB (Berlin).—Combination *Hoplitis (Megalosmia) caucasica* (FRIESE) in Zanden (1988b: 122). Combination *Osmia (Alcidamea) caucasica* FRIESE in Warncke (1991h: 721).

**Distribution**—Europe: Caucasus. **Southwestern Asia**: TR.**Identification**—**Keys, Descriptions**: Warncke (1991h).*caularis* (MORAWITZ, 1875)*Hoplitis (Alcidamea)*

- 1875 *Osmia caularis* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 94. Type material: Holotype ♀, “Bajbek in deserto Kisilkum” [Kazakhstan], ZIN (St. Petersburg).—Combination *Hoplitis (Acanthosmia) caularis* (MORAWITZ) in Zanden (1988b: 120). Combination *Osmia (Alcidamea) caularis* MORAWITZ in Warncke (1991h: 726).
- 1875 *Osmia proxima* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 94. NOMEN PRAEOCCUPATUM [not *Osmia proxima* CRESSON, 1864]. Type material: ♀(♀), “in deserto Kisilkum” [Turkestan], ZIN (St. Petersburg).—Synonymy in Warncke (1991h: 726).
- 1896 *Osmia turcestanica* DALLA TORRE, Catalogus Hymenopterorum, 10: 414. NOMEN NOVUM with same type specimen for preoccupied *Osmia proxima* MORAWITZ, 1875 [not *Osmia proxima* CRESSON, 1864].—Combination *Osmia (Osmia) turcestanica* DALLA TORRE in Wu (2006: 50).

**Distribution**—Europe: RUS, UA. **Northern Asia**: KZ, RC, TM, UZ. **Southwestern Asia**: TR.**Identification**—**Keys, Descriptions**: Banaszak and Romasenko (2001); Medvedeva (1978); Warncke (1991h); Wu (2006).

*ciliaris* (PÉREZ, 1902)

*Hoplitis (Alcidamea)*

- 1902 *Osmia ciliaris* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 65. Type material: ♂, “Valence (Drôme)” [France], MNHN (Paris).—Combination *Osmia (Alcidamea) ciliaris* PÉREZ in Warncke (1991h: 716).

**Distribution**—**Europe**: E, GR, HR, MK, SLO. **Southwestern Asia**: IL, TR.

**Identification**—**Keys, Descriptions**: Benoist (1931); Warncke (1991h).

*claviventris* (THOMSON, 1872)

*Hoplitis (Alcidamea)*

- 1861 *Osmia interrupta* SCHENCK, Jahrbücher des Vereins für Naturkunde im Herzogthum Nassau, 14: 341. NOMEN PRAEOCCUPATUM [not *Osmia interrupta* LATREILLE, 1811]. Type material: Lectotype ♂, by designation of Tkalcu (1974b: 330), [Germany], SMFD (Frankfurt).
- 1872 *Osmia claviventris* THOMSON, Skandnaviens Hymenoptera, vol. 2, p. 254. Type material: Lectotype ♂, by designation of Tkalcu (1974b: 331), “Norrländ” [Sweden], MZLU (Lund). Type species of *Liosmia* THOMSON.—Combination *Hoplitis (Liosmia) claviventris* (THOMSON) in Tkalcu (1974b: 330). Combination *Osmia (Alcidamea) claviventris* THOMSON in Warncke (1991h: 717).
- 1873 *Osmia foveolata* SCHENCK, Berliner Entomologische Zeitschrift, 17: 249 [not seen]. Type material: ♀(?). NOMEN NOVUM with same type specimen for preoccupied *Osmia interrupta* SCHENCK, 1861 [not *Osmia interrupta* LATREILLE, 1811].

**Distribution**—**Europe**: A, AL, B, CH, CZ, D, DK, E, EST, F, F(Co), FIN, FL, GB, GR, H, HR, I, I(Sa), I(Si), L, LT, LV, MK, N, NL, P, PL, RO, RUS, S, SK, SLO, UA; Caucasus. **Northern Asia**: KZ, MGL, RC, RUS, RUS(FS). **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931, as *Osmia leucomelana*); Ducke (1900); Scheuchl (1996); Medvedeva (1978, as *Hoplitis leucomelana*); Móczár (1958, as *Osmia leucomelana*); Radoszkowski (1887a: 281); Romankova (1995, as *Hoplitis leucomelana*); Schmiedeknecht (1885–1886); Warncke (1991h); Wu (2006, as *Hoplitis leucomelana*). **Misapplication**: In many publications *Hoplitis leucomelana* auct. [not (KIRBY, 1802)] is *Hoplitis claviventris* (THOMSON), see Yarrow (1970).

– subspecies *claviventris* (THOMSON, 1872)

- 1872 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—**Europe**: A, AL, B, CH, CZ, D, DK, E, EST, F, F(Co), FIN, FL, GB, GR, H, HR, I, I(Sa), I(Si), L, LT, LV, MK, N, NL, P, PL, RO, RUS, S, SK, SLO, UA; Caucasus. **Northern Asia**: KZ, MGL, RC, RUS, RUS(FS). **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *columba* (WARNCKE, 1991)

- 1991 *Osmia (Alcidamea) claviventris columba* WARNCKE, Linzer Biologische Beiträge, 23: 717. Type material: Holotype (sex unspecified), “Noguera/Sierra de Albarracin, Prov. Teruel, 1600 m” [Spain], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—**Europe**: E.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*contracta* (WALKER, 1871)

*Hoplitis (Alcidamea)*

- 1871 *Osmia contracta* WALKER, List of Egyptian and Arabian Hymenoptera, p. 47. **Type material:** Syntypes ♂(♂), ♀(♀), “Harkeko. Dahleck” [Eritrea].—Combination *Hoplitis (Tridentosmia) contracta* (WALKER) in Zanden (1988b: 122).

**Distribution—Northern Africa:** ET. **Southwestern Asia:** Arabia. **Extralimal:** Afrotropis (Eritrea).

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*curtula* (PÉREZ, 1895)

*Hoplitis (Alcidamea)*

- 1895 *Osmia curtula* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 16. **Type material:** Lectotype ♀, by designation of Zanden (1989: 77), “Barcelone” [Spain], MNHN (Paris).—Combination *Hoplitis (Liosmia) curtula* (PÉREZ) in Zanden (1989: 76). Combination *Osmia (Alcidamea) curtula* PÉREZ in Warncke (1991h: 729).
- 1905 *Osmia bofilli* PÉREZ, Butlletí de la Institució Catalana d'Història Natural, 5: 82. **Type material:** Lectotype ♂, by designation of Zanden (1989: 77), “Barcelone” [Spain], MNHN (Paris); paralectotype ♀.—Synonymy in Zanden (1989: 76).

**Distribution—Europe:** E, F. **Northern Africa:** DZ, MA. **Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** Tkalcu (2000a: 316–318); Warncke (1991h); Zanden (1989: 77). **Misapplication:** The material examined and figured by Warncke (1991h) under the name *Osmia curtula* belongs to *Hoplitis mollis*, see Tkalcu 2000a: 318.

*decaocta* (WARNCKE, 1991)

*Hoplitis (Alcidamea)*

- 1991 *Osmia (Alcidamea) decaocta* WARNCKE, Linzer Biologische Beiträge, 23: 732. **Type material:** Holotype ♀, “Erçek/Van” [Turkey], OLML (Linz); paratype ♀.

**Distribution—Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*dumonti* (BENOIST, 1929)

*Hoplitis (Alcidamea)*

- 1929 *Osmia Dumonti* BENOIST, Bulletin de la Société Entomologique de France, 1929: 97. **Type material:** Lectotype ♀, by designation of Zanden (1992a: 70), [Tunisia], MNHN (Paris).—Combination *Hoplitis (Tridentosmia) dumonti* (BENOIST) in Zanden (1985: 56). Combination *Hoplitis (Liosmia) dumonti* (BENOIST) in Zanden (1992a: 70).

**Distribution—Northern Africa:** DZ, TN.

**Identification—Keys, Descriptions:** Zanden (1992a: 70). **Misapplication:** *Osmia dumonti* in Warncke (1990: 489) is *Hoplitis (Platosmia) incognita* ZANDEN, see Zanden (1996b: 887). **Note:** Male unknown.

*fossulata* (MOCSARY, 1883)*Hoplitis (Alcidamea)*

- 1883 *Stelis fossulata* MOCSARY, Ertekezések A Természettudományok Köreiből, 13: 69. Type material: Holotype ♂, “Persia” [Iran], HNHM (Budapest).—Combination *Osmia (Alcidamea) fossulata* (MOCSARY) in Warncke (1991h: 732).

**Distribution**—Southwestern Asia: IR.

**Identification**—**Keys, Descriptions**: Zanden (1988a: 63). **Note**: Female unknown.

*freygessneri* (FRIESE, 1899)*Hoplitis (Alcidamea)*

- 1899 *Osmia freygessneri* FRIESE, Entomologische Nachrichten (Berlin), 25: 26. Type material: Syntypes ♂(♂), ♀(♀), “Biskra” [Algeria], ZMHB (Berlin).—Combination *Hoplitis (Liosmia) freygessneri* (FRIESE) in Zanden (1988b: 122).
- 1991 *Osmia (Alcidamea) alectoris* WARNCKE, Linzer Biologische Beiträge, 23: 727. NOMEN NOVUM with same type specimen for preoccupied *Osmia freygessneri* FRIESE, 1899 [not *Heriades freygessneri* SCHLETTERER, 1889].

**Distribution**—Northern Africa: DZ, MA, TN. **Extralimital**: Oriental (India).

**Identification**—**Keys, Descriptions**: Ducke (1900); Tkalcu (1977b: 231–232).

*galbula* (WARNCKE, 1991)*Hoplitis (Alcidamea)*

- 1991 *Osmia (Alcidamea) galbula* WARNCKE, Linzer Biologische Beiträge, 23: 736. Type material: Holotype ♂, “15 km NW Yüsekova in 1500 m/Hakkari” [Turkey], OLML (Linz); paratypes ♂♂.

**Distribution**—Europe: GR. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*garzetta* (WARNCKE, 1991)*Hoplitis (Alcidamea)*

- 1991 *Osmia (Alcidamea) garzetta* WARNCKE, Linzer Biologische Beiträge, 23: 730. Type material: Holotype ♂, “Nemrut Dag in 2850 m/Bitlis” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Europe: GR. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*grandiscapa* (PÉREZ, 1895)*Hoplitis (Alcidamea)*

- 1895 *Osmia grandiscapa* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 16. Type material: ♂(♂), [Algeria], MNHN (Paris).—Combination *Osmia (Alcidamea) grandiscapa* PÉREZ in Warncke (1991h: 717).

**Distribution**—Europe: I(Sa)?. **Northern Africa**: DZ, MA.

**Identification**—**Keys, Descriptions**: Alfken (1937: 107); Ducke (1900); Warncke (1991h).

*heilungjiangensis* WU, 1987*Hoplitis (Alcidamea)*

1987 *Hoplitis (Liosmia) heilungjiangensis* WU, Acta Entomologica Sinica (Beijing), 30: 444, 449. Type material: Holotype ♂, “Heilujiang, Harbin” [China], IZCAS (Beijing); paratype ♂.

**Distribution**—Northern Asia: RC(NE).

**Identification**—**Keys, Descriptions**: Wu (2006). **Note**: Female unknown.

*hofferi* TKALCU, 1977*Hoplitis (Alcidamea)*

1977 *Hoplitis (Liosmia) hofferi* TKALCU, Vestnik Československe Spolecnosti Zoologicke, 41: 229. Type material: Holotype ♂, “Quetta” [Pakistan], BMNH (London).

**Distribution**—Southwestern Asia: PAK; H.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*hyperplastica* (MORAWITZ, 1894)*Hoplitis (Alcidamea)*

1894 *Osmia hyperplastica* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 28: 34. Type material: ♂(♂), “Turusch-Dara” [Turkestan].—Combination *Osmia (Osmia) hyperplastica* MORAWITZ in Friese (1911b: 83). Combination *Osmia (Alcidamea) hyperplastica* MORAWITZ in Warncke (1991h: 720).

**Distribution**—Northern Asia: Turkestan.

**Identification**—**Keys, Descriptions**: Duce (1900). **Note**: Female unknown.

*iranica* (WARNCKE, 1991)*Hoplitis (Alcidamea)*

1991 *Osmia (Alcidamea) iranica* WARNCKE, Linzer Biologische Beiträge, 23: 739. Type material: Holotype ♂, “Pass O Neyriz in 2060 m/Fars” [Iran], OLML (Linz); paratypes ♂♂, ♀.

**Distribution**—Southwestern Asia: IR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*lamina* (PÉREZ, 1896)*Hoplitis (Alcidamea)*

1896 *Osmia lamina* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 15. Type material: ♂(♂), [Algeria], MNHN (Paris).

1928 *Osmia triloba* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 8: 214. Type material: ♂(♂), “Grand Atlas, au sud de Marrakech: Asni, 1100 m” [Morocco], MNHN (Paris).—Synonymy in Benoist (1929e: 121).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*laminifera* POPOV, 1960*Hoplitis (Alcidamea)*

- 1960 *Hoplitis (Acanthosmia) laminifera* POPOV, Entomologicheskoe Obozrenie, 39: 433. Type material: Syntypes ♂, ♀, “River Kondara, 1110 m, Gissar Ridge” [Tajikistan], ZIN (St. Petersburg).—Combination *Hoplitis (Acanthosmia) laminifera* POPOV in Zanden (1988b: 120). Combination *Osmia (Alcidamea) laminifera* (POPOV) in Warncke (1991h: 725).

**Distribution**—Northern Asia: TJ.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*lecerfi* (BENOIST, 1928)*Hoplitis (Alcidamea)*

- 1928 *Osmia Le Cerfi* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 8: 213. Type material: Lectotype ♂, by designation of Zanden (1985: 52), “Grand Atlas, au sud de Marrakech, région du Tizi n’Test et du Djebel Imdress (2000 à 2450 m). Tinmel (1400 m)” [Morocco], MNHN (Paris); paralectotypes ♂, ♀.—Combination *Osmia (Alcidamea) lecerfi* BENOIST in Warncke (1991h: 720).

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions**: Warncke (1991h); Zanden (1985: 52–53).

*leucomelana* (KIRBY, 1802)*Hoplitis (Alcidamea)*

- 1802 *Apis leucomelana* KIRBY, Monographia Apum Angliae, vol. 2, p. 260. Type material: ♀(♀), [United Kingdom].—Combination *Osmia (Liosmia) leucomelana* (KIRBY) in Thomson (1872: 255). Combination *Osmia (Acanthosmia) leucomelana* (KIRBY) in Schmiedeknecht (1886: 137). Combination *Osmia (Alcidamea) leucomelana* (KIRBY) in Warncke (1991h: 716).
- 1802 *Apis caulicola* SCHRANK, Fauna Boica, vol. 2, p. 383. Type material: ♀(♀), [Germany].—Synonymy in Warncke (1986: 93).
- 1807 *Apis zonata* GRAVENHORST, Vergleichende Übersicht der Linnéeschen und einiger neueren zoologischen Systeme [...], p. 284 [not seen]. NOMEN PRAEOCCUPATUM [not *Apis zonata* LINNAEUS, 1758]. Type material: ♀(♀), [Germany].
- 1840 *Osmia parvula* DUFOUR & PERRIS, Annales de la Société Entomologique de France, 9: 8. Type material: ♂(♂), ♀(♀), [France].—Synonymy in Warncke (1986: 75).
- 1863 *Heriades bidenticulatus* COSTA, Atti delle Academia delle Scienze Fisiche e Matematiche (Napoli), 1: 46 [not seen]. Type material: ♂(♂), [Italy].—Combination *Chelostoma bidenticulatum* (COSTA) in Schletterer (1889: 630).—Synonymy in Warncke (1991h: 716).

**Distribution**—Europe: A, AL, ARM, B, BG, CH, CZ, D, DK, E, F, F(Co), FL, GB, H, HR, I, I(Sa), I(Si), FL, L, LT, LV, MK, NL, P, PL, RO, RUS, S, SK, SLO, UA; ~~FIN~~. **Northern Africa**: DZ. **Northern Asia**: MGL, KS, KZ, RC, RC(SW), RUS(FS), TJ;. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Radoszkowski (1887a: 280–281); Romankova (1995); Scheuchl (1996); Schmiedeknecht (1885–1886); Stanek (1964); Warncke (1991h); Wu (2006). **Misapplication**: In many publications *Hoplitis leucomelana* auct. [not (KIRBY, 1802)] is *Hoplitis claviventris* (THOMSON), see Yarrow (1970).



*limassolica* (MAVROMOUSTAKIS, 1937)*Hoplitis (Alcidamea)*

- 1937 *Osmia limassolica* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), 20: 523. Type material: Holotype ♀, “Limassol” [Cyprus], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Hoplitis (Liosmia) limassolica* (MAVROMOUSTAKIS) in Zanden (1988b: 122). Combination *Osmia (Alcidamea) limassolica* MAVROMOUSTAKIS in Warncke (1991h: 729).

**Distribution**—Southwestern Asia: CY, IL, JOR, TR.

**Identification**—Keys, Descriptions: Warncke (1991h).

*loboclypeata* WU, 1990*Hoplitis (Alcidamea)*

- 1990 *Hoplitis loboclypeata* WU, Entomotaxonomia (Yangling), 12: 245, 250. Type material: Holotype ♀, “Inner Mongolia: Zhenglan B., Xilin Gol L.” [China], IZCAS (Beijing); paratype ♀.

**Distribution**—Northern Asia: RC(NO).

**Identification**—Keys, Descriptions: Wu (2006). **Note**: Male unknown.

*mitis* (NYLANDER, 1852)*Hoplitis (Alcidamea)*

- 1852 *Osmia mitis* NYLANDER, Notiser ur Sällskapetets pro Fauna et Flora Fennica Förhandlingar, vol. 2, p. 272. Type material: ♂, [Sweden].—Combination *Osmia (Acanthosmia) mitis* NYLANDER in Thomson (1872: 252). Combination *Hoplitis (Acanthosmia) mitis* (NYLANDER) in Zanden (1988b: 120).
- 1872 *Osmia montivaga* MORAWITZ, Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien, 12: 361. Type material: Syntypes ♂(♂), ♀(♀), “Creuznach auf der Gans (1100’), bei Salzburg, Trafoi, auf der Breitlauenen-Alp und im Ober-Engadin” [Austria, Germany, Italy, Switzerland], NMW (Wien), ZIN (St. Petersburg). Type species of *Acanthosmia* THOMSON.—Synonymy in Dalla Torre (1896: 402).
- 1879 *Osmia laevifrons* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 190. NOMEN PRAEOCCUPATUM [not *Osmia laevifrons* MORAWITZ, 1872]. Type material: ♀(♀), [France], MNHN (Paris).

**Distribution**—Europe: A, ARM, B, CH, CZ, D, E, F, FL, GR, H, I, L, PL, RUS, S, SK, SLO. Northern Asia: KZ, MGL, RUS.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1995: 127).

– subspecies *granadae* TKALCU, 1984

- 1984 *Hoplitis (Acanthosmia) mitis granadae* TKALCU, Bulletin de la Société Entomologique de Mulhouse, January–March: 8. Type material: Holotype ♀, “Granada, Sierra Nevada, Omg. Albergue Universitario, 2500–2600 m” [Spain], RMNH (Leiden).

**Distribution**—Europe: E.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

– subspecies *mitis* (NYLANDER, 1852)

1852 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: A, ARM, B, CH, CZ, D, E, F, FL, GR, H, I, L, PL, RUS, S, SK, SLO. Northern Asia: KZ, MGL, RUS.

**Identification**—Keys, Descriptions: Tkalcu (1984a: 9).

*mollis* TKALCU, 2000

*Hoplitis (Alcidamea)*

2000 *Hoplitis (Liosmia) mollis* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 64: 316. Type material: Holotype ♂, “Erzurum” [Turkey], Tkalcu Collection (Praha); paratypes ♂♂, ♀♀.

**Distribution**—Europe: BG. Southwestern Asia: JOR, TR.

**Identification**—Keys, Descriptions: Warncke (1991h, as *Osmia curtula*). **Misapplication**: The material examined and figured by Warncke (1991h) under the name *Osmia curtula* belongs to *Hoplitis mollis*, see Tkalcu (2000a: 318).

*morinella* (WARNCKE, 1991)

*Hoplitis (Alcidamea)*

1991 *Osmia (Alcidamea) morinella* WARNCKE, Linzer Biologische Beiträge, 23: 714. Type material: Holotype ♀, “Reschen Pojom/20 km O Pendjikent” [Tajikistan], OLML (Linz); paratype ♀.

**Distribution**—Northern Asia: TJ.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*ozbeki* TKALCU, 2000

*Hoplitis (Alcidamea)*

2000 *Hoplitis (Liosmia) ozbeki* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 64: 313. Type material: Holotype ♂, “Erzurum Serceme” [Turkey], EMET (Erzurum); paratype ♀.

**Distribution**—Europe: Caucasus. Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*pinkeunia* (WARNCKE, 1991)

*Hoplitis (Alcidamea)*

1991 *Osmia (Alcidamea) pinkeunia* WARNCKE, Linzer Biologische Beiträge, 23: 725. Type material: Holotype ♂, “Hissar-Geb. N Duschanbe in 2000 m” [Tajikistan], OLML (Linz).

**Distribution**—Northern Asia: TJ.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*praestans* (MORAWITZ, 1894)

*Hoplitis (Alcidamea)*

1894 *Osmia praestans* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 28: 31. Type material:

Syntypes ♂(♂), ♀(♀), “Artutsch” [Tajikistan], ZIN (St. Petersburg).—Combination *Hoplitis (Liosmia) praestans* (MORAWITZ) in Zanden (1980: 233). Combination *Osmia (Alcidamea) praestans* MORAWITZ in Warncke (1991h: 734).

- 1895 *Osmia lineola* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 16. Type material: Syntypes ♂(♂), ♀(♀), [Algeria], MNHN (Paris).—Synonymy in Zanden (1988b: 122).

**Distribution**—**Europe**: A, CH, E, F, F(Co), GR, H, I, RUS, SK, SLO, UA; Caucasus, Yugoslavia. **Northern Africa**: DZ, ET, MA, TN. **Northern Asia**: KZ, TJ, UZ. **Southwestern Asia**: IL, JOR, TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Scheuchl (1996); Warncke (1991h).

*scita* (EVERSMANN, 1852)

*Hoplitis (Alcidamea)*

- 1852 *Osmia scita* EVERSMANN, Bulletin de la Société Impériale des Naturalistes de Moscou, 25: 63. Type material: Syntypes ♂(♂), ♀(♀), “in terris transuralensibus” [Russia: Sibiria], presumed lost (Tkalcu, 1995: 122).—Combination *Osmia (Osmia) scita* EVERSMANN in Friese (1911b: 106). Combination *Osmia (Alcidamea) scita* EVERSMANN in Warncke (1991h: 722). Combination *Hoplitis (Liosmia) scita* (EVERSMANN) in Tkalcu (1995: 122).

- 1879 *Osmia rubripes* SMITH, Description of New Species of Hymenoptera in the Collection of the British Museum, p. 60. Type material: ♀(♀), “Angara River, Siberia” [Russia], BMNH (London).—Combination *Hoplitis (Allosmia) rubripes* (SMITH) in Zanden (1988b: 120). Combination *Osmia (Helicosmia) rubripes* SMITH in Wu (2006: 64).—Synonymy in Tkalcu (1995: 122).

**Distribution**—**Northern Asia**: MGL, RC, RC(NW), RUS, RUS(ES), RUS(FS).

**Identification**—**Keys, Descriptions**: Ducke (1900); Radoszkowski (1887a: 276–278); Romankova (1994: 120, 1995); Tkalcu (1995: 122–126); Wu (2006).

*simplicata* (WARNCKE, 1991)

*Hoplitis (Alcidamea)*

- 1991 *Osmia (Alcidamea) simplicata* WARNCKE, Linzer Biologische Beiträge, 23: 714. Type material: Holotype ♂, “20 km W Tawil-Dara in 2000 m” [Tajikistan], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—**Northern Asia**: TJ.

**Identification**—**Keys, Descriptions**: Warncke (1991h).

*simplicicornis* (MORAWITZ, 1875)

*Hoplitis (Alcidamea)*

- 1875 *Osmia simplicicornis* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 95. Type material: Holotype ♂, “Bajrakum in deserto Kisilkum” [Turkestan], ZIN (St. Petersburg).—Combination *Osmia (Alcidamea) simplicicornis* MORAWITZ in Warncke (1991h: 714).

**Distribution**—**Northern Asia**: KZ; Turkestan.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*stellaris* (WARNCKE, 1991)*Hoplitis (Alcidamea)*

- 1991 *Osmia (Alcidamea) stellaris* WARNCKE, Linzer Biologische Beiträge, 23: 731. Type material: Holotype ♂, “30 km S Baskale in 1700 m/Van” [Turkey], OLML (Linz); paratypes ♂♂.

**Distribution**—Europe: GR. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*subbutea* (WARNCKE, 1991)*Hoplitis (Alcidamea)*

- 1991 *Osmia (Alcidamea) subbutea* WARNCKE, Linzer Biologische Beiträge, 23: 733. Type material: Holotype ♂, “Suvari-Halil-Pass in 1900 m/Hakkari” [Turkey], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Europe: GR. **Northern Asia**: KZ. **Southwestern Asia**: IL, TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*tricolor* (SAUNDERS, 1908)*Hoplitis (Alcidamea)*

- 1908 *Osmia tricolor* SAUNDERS, Transactions of the Entomological Society of London, 1908: 249. Type material: Lectotype ♀, by designation of Zanden (1986: 73), “Biskra” [Algeria], BMNH (London).— Combination *Anthocopa (Anthocopa) tricolor* (SAUNDERS) in Zanden (1986: 73). Combination *Osmia (Alcidamea) tricolor* SAUNDERS in Warncke (1991h: 737).

**Distribution**—**Northern Africa**: DZ, MA. **Southwestern Asia**: JOR.

**Identification**—**Keys, Descriptions**: Zanden (1985: 56, 1986: 73, 1991a).

*tridentata* (DUFOR & PERRIS, 1840)*Hoplitis (Alcidamea)*

- 1840 *Osmia tridentata* DUFOR & PERRIS, Annales de la Société Entomologique de France, 9: 10. Type material: Syntypes ♂(♂), ♀(♀), [France]. Type species of *Tridentosmia* SCHMIEDEKNECHT.—Combination *Hoplitis (Tridentosmia) tridentata* (DUFOR & PERRIS) in Zanden (1980: 233). Combination *Osmia (Alcidamea) tridentata* DUFOR & PERRIS in Warncke (1991h: 718).

- 1934 *Osmia melanoleuca* BENOIST, Bulletin de la Société Entomologique de France, 39: 108. Type material: Holotype ♀, [Algeria], MNHN (Paris).—Combination *Hoplitis (Tridentosmia) tridentata melanoleuca* (BENOIST) in Zanden (1985: 65).—Synonymy in Warncke (1991h: 718).

- 1975 *Hoplitis (Tridentosmia) tridentata asensioi* TKALCU, Archivos del Instituto de Aclimatacion Almeria, 1975: 18. Type material: Holotype ♀, “Granja Escuela, Valladolid” [Spain], Asensio Collection (Valladolid).—Synonymy with *Hoplitis tridentata melanoleuca* (BENOIST) in Zanden (1985: 65).

**Distribution**—Europe: A, B, ARM, CH, CZ, D, E, E(Ba), E, GE, GR, H, HR, I, I(Si), LT, NL, PL, RUS, SK, SLO, UA. **Northern Africa**: DZ, ET, MA. **Northern Asia**: KZ. **Southwestern Asia**: IR, TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Warncke (1991h).

- truncata* WU, 1993 *Hoplitis (Alcidamea)*
- 1993 *Hoplitis (Liosmia) truncata* WU, Insects of the Hengduan Mountains Region, vol. 2, p. 1393, p. 1419. Type material: Holotype ♂, “Sichuan: Xiangcheng” [China], IZCAS (Beijing); paratype ♂.
- Distribution**—Northern Asia: RC(SW).
- Identification**—Keys, Descriptions: Wu (2006). **Note**: Female unknown.
- verruciventris* (MORAWITZ, 1886) *Hoplitis (Alcidamea)*
- 1886 *Osmia verruciventris* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 20: 73. Type material: Lectotype ♂, by designation of Warncke (1991h: 725), “Talysch-Lirik” [Azerbaijan], ZIN (St. Petersburg).—Combination *Osmia (Alcidamea) verruciventris* MORAWITZ in Warncke (1991h: 725).
- Distribution**—Europe: AZ; Caucasus. **Southwestern Asia**: TR.
- Identification**—Keys, Descriptions: Ducke (1900); Warncke (1991h).
- xanthoprymna* (WARNCKE, 1991) *Hoplitis (Alcidamea)*
- 1991 *Osmia (Alcidamea) xanthoprymna* WARNCKE, Linzer Biologische Beiträge, 23: 721. Type material: Holotype ♀, “Madensehir/Konya” [Turkey], OLML (Linz); paratypes ♀♀.
- Distribution**—Southwestern Asia: TR.
- Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.
- xinjiangensis* WU, 1987 *Hoplitis (Alcidamea)*
- 1987 *Hoplitis (Liosmia) xinjiangensis* WU, Acta Entomologica Sinica (Beijing), 30: 443, 448. Type material: Holotype ♀, “Xinjiang, Aluotai, Azubai, 1750 m” [China], IZCAS (Beijing).
- Distribution**—Northern Asia: RC(NW).
- Identification**—Keys, Descriptions: Wu (2006). **Note**: Male unknown.
- Hoplitis* subgenus *Annosmia* WARNCKE Palaeartic species: 31
- annulata* (LATREILLE, 1811) *Hoplitis (Annosmia)*
- 1811 *Osmia annulata* LATREILLE, Encyclopédie Méthodique, Histoire Naturelle, Insectes, vol. 8, p. 587. Type material: ♂(♂) [Spain], presumed lost (Warncke, 1991e: 311). Type species of *Annosmia* WARNCKE.—Combination *Hoplitis (Hoplitis) annulata* (LATREILLE) in Zanden (1988b: 121). Combination *Osmia (Annosmia) annulata* LATREILLE in Warncke (1991e: 311).
- 1887 *Osmia pruinosa* DESTEFANI, Il Naturalista Siciliano, 6: 112. Type material: Syntypes ♂(♂), ♀(♀), “Villa Favorita presso Palermo” [Italy: Sicily].—Synonymy with *Osmia crenulata* MORAWITZ in Friese (1911b: 134). Synonymy with *Osmia annulata* LATREILLE in Warncke (1991e: 311).

**Distribution**—Europe: ARM, BG, E, F, F(Co), GR, GR(Cr), HR, I, I(Sa), I(Si), P. **Northern Africa**: DZ, MA, TN. **Southwestern Asia**: CY, IL, RL, SYR, TR.

**Identification**—**Keys, Descriptions**: Benoist (1931); Ducke (1900); Le Goff (2003: 70); Mavromoustakis (1949: 292); Móczár (1958); Schmiedeknecht (1885–1886); Warncke (1991e).

– subspecies *annulata* (LATREILLE, 1811)

1811 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: E, F, I(Si), P. **Northern Africa**: DZ, MA, TN.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *corsaria* (WARNCKE, 1991)

1991 *Osmia (Annosmia) annulata corsaria* WARNCKE, Linzer Biologische Beiträge, 23: 311. **Type material**: Holotype ♂, “Ajaccio” [France: Corsica], OLML (Linz).

**Distribution**—Europe: F(Co).

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

– subspecies *crenulata* (MORAWITZ, 1871)

1871 *Osmia crenulata* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 8: 208 [not *Heriades crenulatus* NYLANDER, 1856]. **Type material**: Syntypes ♂(♂), ♀(♀), “Creta” [Greece: Crete], “Epirus, Corfu” [Greece], Corsica” [France: Corsica].—Combination *Osmia (Ctenosmia) crenulata* MORAWITZ in Schmiedeknecht (1885: 21 [887]). Combination *Hoplitis (Hoplitis) crenulata* (MORAWITZ) in Tkalcu (1975a: 179).

1991 *Osmia (Annosmia) annulata cretica* WARNCKE, Linzer Biologische Beiträge, 23: 312. NOMEN NOVUM with same type specimen for preoccupied *Osmia crenulata* MORAWITZ, 1871 [not *Heriades crenulatus* NYLANDER, 1856].

**Distribution**—Europe: ARM, BG, GR, GR(Cr), HR, I, I(Sa)?, I(Si)? **Southwestern Asia**: CY, IL, RL, SYR, TR.

**Identification**—**Keys, Descriptions**: Warncke (1991e); Zanden (1991c: 169–171).

*aqabaensis* (WARNCKE, 1991)

*Hoplitis (Annosmia)*

1991 *Osmia (Annosmia) aqabaensis* WARNCKE, Linzer Biologische Beiträge, 23: 326. **Type material**: Holotype ♂, “80 km NO Aqaba (Strasse nach Amman)” [Jordan], OLML (Linz); paratypes ♂♂, ♀.

**Distribution**—**Southwestern Asia**: JOR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.



*bassana* (WARNCKE, 1991)*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) bassana* WARNCKE, Linzer Biologische Beiträge, 23: 313. Type material: Holotype ♀, “70 km O Tata” [Morocco], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*cercomela* (WARNCKE, 1991)*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) cercomela* WARNCKE, Linzer Biologische Beiträge, 23: 314. Type material: Holotype ♀, “80 km NO Aqaba (Strasse nach Amman)” [Jordan], OLML (Linz); paratypes ♂, ♀♀.

**Distribution**—Southwestern Asia: JOR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*christae* (WARNCKE, 1991)*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) christae* WARNCKE, Linzer Biologische Beiträge, 23: 487. Type material: Holotype ♀, “Giv’ot Loven/13 km S Paran in der Negev-Wüste” [Israel], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: MA. Southwestern Asia: IL.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*chukar* (WARNCKE, 1991)*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) chukar* WARNCKE, Linzer Biologische Beiträge, 23: 316. Type material: Holotype ♂, “W Serpil in 1800 m/Mt. Cilo, Hakkari” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*elaziga* (WARNCKE, 1991)*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) elaziga* WARNCKE, Linzer Biologische Beiträge, 23: 320. Type material: Holotype ♂, “Elazig, 1300 m” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*eremophila* (WARNCKE, 1991)*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) eremophila* WARNCKE, Linzer Biologische Beiträge, 23: 317. Type material: Holotype ♀, “nördlich Mt. Gavaruk in 2900 m/Sat-Geb., Hakkari” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: SYR, TR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*fulica* (WARNCKE, 1991)

*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) fulica* WARNCKE, Linzer Biologische Beiträge, 23: 312. Type material: Holotype ♂ (see Blank and Kraus, 1994: 735), “Erçis/Van, 1650 m” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*gentilis* (WARNCKE, 1991)

*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) gentilis* WARNCKE, Linzer Biologische Beiträge, 23: 320. Type material: Holotype ♂, “Sille bei Konya” [Turkey], OLML (Linz); paratype ♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*gusenleitneri* (WARNCKE, 1991)

*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) gusenleitneri* WARNCKE, Linzer Biologische Beiträge, 23: 323. Type material: Holotype ♀, “Oukaimeden in 2600–2800 m” [Morocco], OLML (Linz).

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*hierichonica* (MAVROMOUSTAKIS, 1949)

*Hoplitis (Annosmia)*

- 1949 *Osmia hierichonica* MAVROMOUSTAKIS, Eos (Madrid), 25: 291. Type material: Holotype ♀, “Jericho” [Palestine], DAAN (Nicosia); paratype ♂.—Combination *Anthocopa (Anthocopa) hierichonica* (MAVROMOUSTAKIS) in Zanden (1988b: 118). Combination *Osmia (Annosmia) hierichonica* MAVROMOUSTAKIS in Warncke (1991e: 315).

**Distribution**—Northern Africa: MA, TN. Southwestern Asia: IL, JOR.

**Identification**—**Keys, Descriptions:** Mavromoustakis (1954b: 263); Warncke (1991e).

– subspecies *hierichonica* (MAVROMOUSTAKIS, 1949)

- 1949 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Southwestern Asia: IL, JOR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *wolfi* (WARNCKE, 1991)

1991 *Osmia (Annosmia) hierichonica wolfi* WARNCKE, Linzer Biologische Beiträge, 23: 316. Type material: Holotype ♂, “30 km W Quarzazate” [Morocco], OLMML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: MA, TN.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*idaensis* (WARNCKE, 1991)

*Hoplitis (Annosmia)*

1991 *Osmia (Annosmia) idaensis* WARNCKE, Linzer Biologische Beiträge, 23: 317. Type material: Holotype ♂, “Ida-Geb. in 2100 m” [Greece: Crete], OLMML (Linz); paratypes ♂, ♀.

**Distribution**—Europe: GR(Cr). Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*israelica* (WARNCKE, 1991)

*Hoplitis (Annosmia)*

1991 *Osmia (Annosmia) annulata israelica* WARNCKE, Linzer Biologische Beiträge, 23: 312. Type material: Holotype ♂, “Naharia” [Israel], OLMML (Linz); paratypes ♂♂, ♀.—Combination *Hoplitis (Annosmia) israelica* (WARNCKE) in Zanden (1996b: 885).

**Distribution**—Northern Africa: MA. Southwestern Asia: IL, IR, JOR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*kaszabi* TKALCU, 2000

*Hoplitis (Annosmia)*

2000 *Hoplitis (Annosmia) kaszabi* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 64: 318. Type material: Holotype ♂, “Central Aimak Ulan-Baator, Nucht im Bagdo ul, 1880 m” [Mongolia]; HNHM (Budapest); paratypes ♂, ♀♀.

**Distribution**—Northern Asia: MGL.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*lefeberi* ZANDEN, 1991

*Hoplitis (Annosmia)*

1991 *Hoplitis (Hoplitis) lefeberi* ZANDEN, Reichenbachia (Dresden), 28: 169. Type material: Holotype ♂, “Maroc-Tizn., S. Ifni, 100 m” [Morocco], RMNH (Leiden); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*leiocephala* (MAVROMOUSTAKIS, 1954)*Hoplitis (Annosmia)*

- 1954 *Osmia leiocephala* MAVROMOUSTAKIS, Bulletin of the Research Council of Israel, 4: 263. Type material: Holotype ♀, “15 km south of Kurnub” [Israel], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Anthocopa (Anthocopa) leiocephala* (MAVROMOUSTAKIS) in Zanden (1988b: 118). Combination *Osmia (Annosmia) leiocephala* MAVROMOUSTAKIS in Warncke (1991e: 329).

**Distribution**—Southwestern Asia: IL.

**Identification**—Keys, Descriptions: Warncke (1991e).

*mutica* (WARNCKE, 1991)*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) mutica* WARNCKE, Linzer Biologische Beiträge, 23: 319. Type material: Holotype ♂, “Madensehir in 1300 m/Konya” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*nisa* (WARNCKE, 1991)*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) nisa* WARNCKE, Linzer Biologische Beiträge, 23: 329. Type material: Holotype ♀, “10 km SW Akka” [Morocco], OLML (Linz); paratypes ♂♂, ♀♀.

- 1991 *Hoplitis (Hoplitis) speculumoides* ZANDEN, Linzer Biologische Beiträge, 23: 350. Type material: Holotype ♂, “Erfoud, Tafilalet” [Morocco], RMNH (Leiden); paratypes ♂♂, ♀♀.—Synonymy in Warncke (1991g: 568).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*ochruros* (WARNCKE, 1991)*Hoplitis (Annosmia)*

- 1991 *Osmia (Annosmia) ochruros* WARNCKE, Linzer Biologische Beiträge, 23: 322. Type material: Holotype ♀, “20 km SO Erfoud” [Morocco], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Northern Africa: DZ, MA, TN.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

– subspecies *crecca* (WARNCKE, 1991)

- 1991 *Osmia (Annosmia) ochruros crecca* WARNCKE, Linzer Biologische Beiträge, 23: 323. Type material: Holotype ♀, “20 km N Sfax” [Tunisia], OLML (Linz).

**Distribution**—Northern Africa: TN.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

– subspecies *ochruros* (WARNCKE, 1991)

1991 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*parana* (WARNCKE, 1991)

*Hoplitis (Annosmia)*

1991 *Osmia (Annosmia) parana* WARNCKE, Linzer Biologische Beiträge, 23: 328. **Type material**: Holotype ♀, “Giv ot Loven/13 km S Paran” [Israel], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Southwestern Asia: IL.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*peralba* ZANDEN, 1992

*Hoplitis (Annosmia)*

1992 *Hoplitis (Annosmia) peralba* ZANDEN, Linzer Biologische Beiträge, 24: 67. **Type material**: Holotype ♂, “Deesa” [India], RMNH (Leiden); paratype ♂.

**Distribution**—Northern Africa: ET. **Extralimital**: Oriental (India).

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*samarkanda* (WARNCKE, 1991)

*Hoplitis (Annosmia)*

1991 *Osmia (Annosmia) samarkanda* WARNCKE, Linzer Biologische Beiträge, 23: 318. **Type material**: Holotype ♂, “Aman Kutan/35 km N Samarkand” [Uzbekistan], OLML (Linz); paratype ♂.

**Distribution**—Northern Asia: TJ, UZ.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*segura* (WARNCKE, 1991)

*Hoplitis (Annosmia)*

1991 *Osmia (Annosmia) segura* WARNCKE, Linzer Biologische Beiträge, 23: 327. **Type material**: Holotype ♀, “Wadi Segur/40 km NW Eilat” [Israel], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: IL.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*sordida* (BENOIST, 1929)

*Hoplitis (Annosmia)*

1929 *Osmia sordida* BENOIST, Bulletin de la Société Entomologique de France, 1929: 99. **Type material**: Holotype ♂, “Syrie: Jaffa” [Israel], MNHN (Paris).—Combination *Anthocopa (Anthocopa) sordida* (BENOIST) in Zanden

(1985: 60). Combination *Osmia (Annosmia) sordida* BENOIST in Warncke (1991e: 322).

**Distribution**—Northern Africa: ET. Southwestern Asia: IL.

**Identification**—Keys, Descriptions: Warncke (1991e); Zanden (1985: 60).

*speculum* (BENOIST, 1934)

*Hoplitis (Annosmia)*

1934 *Osmia speculum* BENOIST, Bulletin de la Société Entomologique de France, 39: 106. Type material: Holotype ♀, “Ghardaia” [Algeria], MNHN (Paris).—Combination *Hoplitis (Hoplitis) speculum* (BENOIST) in Zanden (1985: 62). Combination *Osmia (Annosmia) speculum* BENOIST in Warncke (1991e: 328).

1934 *Osmia pseudo-speculum* BENOIST, Bulletin de la Société Entomologique de France, 39: 107. Type material: Holotype ♀, “entre Mogador et Agadir” [Morocco], MNHN (Paris).—Synonymy in Zanden (1985: 65).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—Keys, Descriptions: Mavromoustakis (1949: 293, 1954b: 265); Warncke (1991e); Zanden (1985: 62, 65, 1991b: 350–351).

*tkalcuella* LE GOFF, 2003

*Hoplitis (Annosmia)*

2003 *Hoplitis (Annosmia) tkalcuella* LE GOFF, Bulletin de la Société Entomologique de France, 108: 67. Type material: Holotype ♂, “Guardamar del Segura (Alicante)” [Spain], Le Goff Collection (Barentin); paratypes ♂♂, ♀♀.

**Distribution**—Europe: E.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*tunica* (WARNCKE, 1991)

*Hoplitis (Annosmia)*

1991 *Osmia (Annosmia) tunica* WARNCKE, Linzer Biologische Beiträge, 23: 323. Type material: Holotype ♂, “Nefta” [Tunisia], OLML (Linz); paratype ♂.

**Distribution**—Northern Africa: TN.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*uncaticornis* (STANEK, 1969)

*Hoplitis (Annosmia)*

1969 *Osmia uncaticornis* STANEK, Nachrichten des Naturwissenschaftlichen Museums der Stadt Aschaffenburg, 78: 11. Type material: Holotype ♂, “Mut” [Turkey], SMFD (Frankfurt).—Combination *Anthocopa (Anthocopa) uncaticornis* (STANEK) in Zanden (1980: 230). Combination *Osmia (Annosmia) uncaticornis* STANEK in Warncke (1991e: 321).

**Distribution**— Europe: GR. Southwestern Asia: SYR, TR.

**Identification**—Keys, Descriptions: Warncke (1991e); Zanden (1980: 230).



– subspecies *cursoria* (WARNCKE, 1991)

- 1991 *Osmia (Annosmia) uncaticornis cursoria* WARNCKE, Linzer Biologische Beiträge, 23: 321. Type material: Holotype ♂, “20 km SO Harran in 500 m/Urfa” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: SYR, TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

– subspecies *uncaticornis* (STANEK, 1969)

- 1969 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**— Europe: GR. Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*verhoeffi* (MAVROMOUSTAKIS, 1954)

*Hoplitis (Annosmia)*

- 1954 *Osmia verhoeffi* MAVROMOUSTAKIS, Bulletin of the Research Council of Israel, 4: 265. Type material: Holotype ♀, “Bat Yam” [Israel], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Osmia (Annosmia) verhoeffi* MAVROMOUSTAKIS in Warncke (1991e: 321).

**Distribution**—Southwestern Asia: IL, JOR.

**Identification**—Keys, Descriptions: Warncke (1991e).

*zonalis* (PÉREZ, 1895)

*Hoplitis (Annosmia)*

- 1895 *Osmia zonalis* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 14. Type material: ♀(♀) [Algeria], MNHN (Paris).—Combination *Osmia (Osmia) zonalis* PÉREZ in Friese (1911b: 97). Combination *Hoplitis (Hoplitis) zonalis* (PÉREZ) in Zanden (1988b: 122). Combination *Osmia (Annosmia) zonalis* PÉREZ in Warncke (1991e: 325).

- 1902 *Osmia undulata* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 66. Type material: ♂(♂), “Foum-Tatahouin” [Tunisia], MNHN (Paris).—Combination *Hoplitis (Hoplitis) undulata* (PÉREZ) in Zanden (1988b: 122).—Synonymy in Warncke (1991e: 325).

- 1929 *Osmia taprurensis* BENOIST, Bulletin de la Société Entomologique de France, 1929: 98. Type material: Lectotype ♂, by designation of Zanden (1985: 57), “Sfax” [Tunisia], MNHN (Paris); paralectotypes ♂♂.—Combination *Hoplitis (Hoplitis) taprurensis* (BENOIST) in Zanden (1985: 58).—Synonymy in Warncke (1991e: 325).

**Distribution**—Northern Africa: DZ, MA, TN. Southwestern Asia: IL.

**Identification**—Keys, Descriptions: Mavromoustakis (1949: 292–293, 1954b: 262–263, as *Osmia sordida*); Warncke (1991e); Zanden (1985: 58–59).

– subspecies *bodenheimeri* (MAVROMOUSTAKIS, 1949)

- 1949 *Osmia bodenheimeri* MAVROMOUSTAKIS, Eos (Madrid), 25: 289. Type material: Holotype ♀, “Pardes Hannah”

[Israel], DAAN (Nicosia); paratype ♂.—Synonymy with *Osmia sordida* BENOIST in Mavromoustakis (1954b: 262), rejected by Warncke (1991e: 326).—Combination *Osmia (Annosmia) zonalis bodenheimeri* MAVROMOUSTAKIS in Warncke (1991e: 325).

**Distribution**—Southwestern Asia: IL.

**Identification**—Keys, Descriptions: Warncke (1991e).

– subspecies *zonalis* (PÉREZ, 1895)

1895 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Northern Africa: DZ, MA, TN.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*Hoplitis* subgenus *Anthocopa* LEPELETIER & SERVILLE

Palearctic species: 66

*agis* (BENOIST, 1929)

*Hoplitis (Anthocopa)*

1929 *Osmia Agis* BENOIST, Bulletin de la Société Entomologique de France, 1929: 96. Type material: Lectotype ♂, by designation of Zanden (1985: 56), “Taurus” [Turkey], MNHN (Paris); paralectotype ♀.—Combination *Anthocopa (Anthocopa) agis* (BENOIST) in Zanden (1985: 56).

**Distribution**—Europe: GR. Southwestern Asia: IR, TR.

**Identification**—Keys, Descriptions: Zanden (1985: 56).

*alatauensis* (TKALCU, 1992)

*Hoplitis (Anthocopa)*

1992 *Anthocopa (Anthocopa) alatauensis* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 56: 211. Type material: Holotype ♂, “Alma Ata-Medeo, 1700 m Zailijkij Alatau Mts.” [Kazakhstan], Tyrner Collection (Litvinov).

**Distribution**—Northern Asia: KZ.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*alba* (ZANDEN, 1994)

*Hoplitis (Anthocopa)*

1994 *Anthocopa (Anthocopa) alba* ZANDEN, Linzer Biologische Beiträge, 26: 1117. Type material: Holotype ♂, “Foum Zguid, 60 km N.” [Morocco], Schwarz Collection (Ansfelden); paratypes ♂, ♀♀.

**Distribution**—Northern Africa: MA.

**Identification**—Keys, Descriptions: Zanden (1994b: 1119).

*anipuncta* (ALFKEN, 1935)*Hoplitis (Anthocopa)*

- 1935 *Osmia anipuncta* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 186. Type material: Lectotype ♂, by designation of Zanden (1989: 74), "Jericho" [Palestine], ZMHB (Berlin); paralectotypes ♀♀.—Combination *Anthocopa (Anthocopa) anipuncta* (ALFKEN) in Zanden (1988b: 117).

**Distribution**—Europe: GR(Cr). **Southwestern Asia**: CY, IL, JOR, SYR, TR.

**Identification**—**Keys, Descriptions**: Zanden (1989: 74).

*antigae* (PÉREZ, 1895)*Hoplitis (Anthocopa)*

- 1895 *Osmia Antigae* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 13. Type material: Syntypes ♂(♂), ♀(♀), "Barcelona" [Spain], MNHN (Paris).—Combination *Anthocopa (Anthocopa) antigae* (PÉREZ) in Zanden (1988b: 117).

**Distribution**—Europe: E, F. **Northern Africa**: DZ, MA.

**Identification**—**Keys, Descriptions**: Benoist (1931).

– subspecies *antigae* (PÉREZ, 1895)

- 1895 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: E.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *laevior* (BENOIST, 1926)

- 1926 *Osmia antigae laevior* BENOIST, Annales de la Société Entomologique de France, 95: 210. Type material: Holotype ♀, "aux environs de Nemours (S.-et-M.)" [France, but see Zanden (1988a: 62)], MNHN (Paris).—Combination *Anthocopa (Anthocopa) antigae laevior* (BENOIST) in Zanden (1988b: 117).

**Distribution**—Europe: E, F. **Northern Africa**: DZ, MA.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*askhabadensis* (RADOSZKOWSKI, 1886)*Hoplitis (Anthocopa)*

- 1886 *Pseudosmia askhabadensis* RADOSZKOWSKI, Horae Societatis Entomologicae Rossicae (St. Petersburg), 20: 14. Type material: ♀(♀), "Ashkhabad" [Turkmenistan].—Combination *Osmia askhabadensis* (RADOSZKOWSKI) in Dalla Torre (1896: 385). Combination *Hoplitis (Pseudosmia) askhabadensis* (RADOSZKOWSKI) in Zanden (1988b: 119).

**Distribution**—**Northern Asia**: TM.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*ayardi* (BENOIST, 1928)*Hoplitis (Anthocopa)*

- 1928 *Osmia Ayardi* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 8: 213. Type material: Lectotype ♂, by designation of Zanden (1985: 53), “Aïn Leuh, près d’Azrou” [Morocco], MNHN (Paris); paralectotype ♂.—Combination *Anthocopa (Anthocopa) ayardi* (BENOIST) in Zanden (1985: 53).

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions**: Zanden (1985: 53).

*barbigera* (BENOIST, 1950)*Hoplitis (Anthocopa)*

- 1950 *Osmia barbigera* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 30: 187. Type material: Holotype ♀, “Tafraout” [Morocco], MZLS (Lausanne).—Combination *Anthocopa (Anthocopa) barbigera* (BENOIST) in Zanden (1985: 68).

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions**: Zanden (1985: 68). **Note**: Male unknown.

*batyamae* (ZANDEN, 1986)*Hoplitis (Anthocopa)*

- 1986 *Anthocopa wahrmani batyamae* ZANDEN, Reichenbachia (Dresden), 24: 72. Type material: Holotype ♀, “Bat Yam” [Israel], RMNH (Leiden); paratypes ♀♀.—Combination *Anthocopa (Anthocopa) batyamae* ZANDEN in Zanden (1998b: 529).

**Distribution**—Europe: P. Southwestern Asia: IL, Y.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*bifoveolata* (ALFKEN, 1935)*Hoplitis (Anthocopa)*

- 1935 *Osmia (Lithosmia) bifoveolata* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 190. Type material: Lectotype ♂, by designation of Zanden (1989: 74), “Wadi el Kelt” [Israel], ZMHB (Berlin); paralectotype ♀ [= *Hoplitis anipuncta* (ALFKEN), see Zanden (1988b: 117, 1989: 74)].—Combination *Anthocopa (Anthocopa) bifoveolata* (ALFKEN) in Zanden (1988b: 118).

**Distribution**—Southwestern Asia: IL, JOR, SYR, TR.

**Identification**—**Keys, Descriptions**: Zanden (1989: 74).

*bipartita* (FRIESE, 1899)*Hoplitis (Anthocopa)*

- 1899 *Osmia bipartita* FRIESE, Entomologische Nachrichten (Berlin), 25: 61. Type material: Holotype ♂, “Turkestan” [Turkestan], ZMHB (Berlin).—Combination *Anthocopa (Anthocopa) bipartita* (FRIESE) in Zanden (1988b: 118).

**Distribution**—Northern Asia: Turkestan. Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: Ducke (1900). **Note**: Female unknown.

*bisulca* (GERSTAECKER, 1869)*Hoplitis (Anthocopa)*

- 1869 *Osmia bisulca* GERSTAECKER, Entomologische Zeitung (Stettin), 30: 344. Type material: Lectotype ♂, by designation of Tkalcu (1992: 215), “Sicilien” [Italy: Sicily], ZMHB (Berlin); paralectotypes ♂(♂), ♀(♀).—Combination *Pseudosmia bisulca* (GERSTAECKER) in Radoszkowski (1874c: 156). Combination *Osmia (Furcosmia) bisulca* GERSTAECKER in Schmiedeknecht (1886: 185 [1051]). Combination *Anthocopa (Anthocopa) bisulca* (GERSTAECKER) in Zanden (1980: 231).
- 1879 *Osmia lanosa* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 194. Type material: Syntypes ♀♀, “Algérie” [Algeria], “France méridionale” [France], MNHN (Paris).—Combination *Osmia (Furcosmia) lanosa* PÉREZ in Schmiedeknecht (1885: 22 [888]).—Synonymy in Zanden (1988b: 118).

**Distribution**—Europe: E, F, F(Co), GR, H, I, I(Si). Northern Africa: DZ, LAR, TN. Southwestern Asia: IL, JOR, SYR, TR.

**Identification**—Keys, Descriptions: Alfken (1914: 200); Benoist (1931); Ducke (1900); Ferton (1895: 205–206); Móczár (1958); Radoszkowski (1874c: 156); Schmiedeknecht (1885–1886); Tkalcu (1992: 213, 215); Zanden (1984c: 176–179).

*brevifurca* (BENOIST, 1934)*Hoplitis (Anthocopa)*

- 1934 *Osmia brevifurca* BENOIST, Bulletin de la Société Entomologique de France, 39: 159. Type material: Holotype ♂, “Vallée du Sous” [Morocco], MNHN (Paris).—Combination *Anthocopa (Anthocopa) brevifurca* (BENOIST) in Zanden (1985: 66).

**Distribution**—Northern Africa: MA.

**Identification**—Keys, Descriptions: Zanden (1985: 66). Note: Female unknown.

*brevispina* (TKALCU, 2000)*Hoplitis (Anthocopa)*

- 2000 *Anthocopa (Arctosmia) brevispina* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 64: 305. Type material: Holotype ♂, “Erzurum” [Turkey], EMET (Erzurum); paratypes ♀♀.

**Distribution**—Europe: Caucasus. Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*bubulca* (ZANDEN, 1994)*Hoplitis (Anthocopa)*

- 1994 *Anthocopa (Anthocopa) bubulca* ZANDEN, Linzer Biologische Beiträge, 26: 1119. Type material: Holotype ♀, “60 km N Fom Zguid” [Morocco], Schwarz Collection (Ansfelden); paratypes ♂, ♀♀.

**Distribution**—Northern Africa: MA, TN.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*bytinskii* (MAVROMOUSTAKIS, 1948)*Hoplitis (Anthocopa)*

- 1948 *Osmia bytinskii* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 1: 220. Type material: Holotype ♂, “Tiberias” [Israel], DAAN (Nicosia); paratype ♂.—Combination *Anthocopa (Antho-*

*copa*) *bytinskii* (MAVROMOUSTAKIS) in Zanden (1988b: 118).

**Distribution**—Southwestern Asia: IL.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Female unknown.

*conosimilis* ZANDEN, 1992

*Hoplitis* (*Anthocopa*)

1992 *Hoplitis* (*Hoplitis*) *conosimilis* ZANDEN, Reichenbachia (Dresden), 29: 68. **Type material:** Holotype ♂, “Chichaoua (500 m)” [Morocco], RMNH (Leiden); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: MA, TN.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*cretaea* (TKALCU, 1992)

*Hoplitis* (*Anthocopa*)

1992 *Anthocopa* (*Anthocopa*) *cretaea* TKALCU, Acta Societatis Zoologicae Bohemoslovaca (Praha), 56: 215. **Type material:** Holotype ♂, “Sitia” [Greece: Crete], Tkalcu Collection (Praha); paratype ♀.

**Distribution**—Europe: GR(Cr).

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*crstatula* (ZANDEN, 1990)

*Hoplitis* (*Anthocopa*)

1846 *Megachile cristata* FONSCOLOMBE, Annales de la Société Entomologique de France, ser. 2, 4: 46. NOMEN PRAEOCCUPATUM [not *Megachile cristata* DUFOUR, 1841]. **Type material:** ♀(?), “environs d’Aix” [France]. **Type species** of *Pseudosmia* RADOSZKOWSKI.—Combination *Pseudosmia cristata* (FONSCOLOMBE) in Radoszkowski (1874c: 155). Combination *Osmia cristata* (FONSCOLOMBE) in Pérez (1879: 192). Combination *Osmia* (*Furcosmia*) *cristata* (FONSCOLOMBE) in Schmiedeknecht (1885: 22 [888]). Combination *Anthocopa* (*Anthocopa*) *cristata* (FONSCOLOMBE) in Zanden (1988b: 118). Combination *Hoplitis* (*Hoplitis*) *cristata* (FONSCOLOMBE) in Wu (2006: 111).

1990 *Anthocopa crstatula* ZANDEN, Reichenbachia (Dresden), 28: 51. NOMEN NOVUM with same type specimen for preoccupied *Megachile cristata* FONSCOLOMBE, 1846 [not *Megachile cristata* DUFOUR, 1841].—Combination *Anthocopa* (*Pseudosmia*) *crstatula* ZANDEN in Zanden (1990: 51).

**Distribution**—Europe: E, F, F(Co), I, I(Si). Northern Africa: DZ, MA, TN. Northern Asia: RC. Southwestern Asia: TK; HE.

**Identification**—**Keys, Descriptions:** Benoist (1931); Ducke (1900); Ferton (1895: 205–206); Radoszkowski (1874c: 155); Schmiedeknecht (1885–1886); Wu (2006).

*cypriaca* (MAVROMOUSTAKIS, 1938)

*Hoplitis* (*Anthocopa*)

1938 *Osmia cypriaca* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 11, 2: 467. **Type material:** Holotype ♀, “Limassol” [Cyprus], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Anthocopa* (*Glossosmia*) *cypriaca* (MAVROMOUSTAKIS) in Zanden (1988b: 119).



**Distribution**—Southwestern Asia: CY, IL, JOR, SYR, TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *bayburtensis* (TKALCU, 1980)

1980 *Anthocopa (Anthocopa) cypriaca bayburtensis* TKALCU, Bulletin de la Société Entomologique de Mulhouse, 1980: 38. Type material: Holotype ♀, “Bayburst (Gümüşhane)” [Turkey], EMET (Erzurum).—Combination *Anthocopa (Glossosmia) cypriaca bayburtensis* TKALCU in Zanden (1988b: 119).

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

– subspecies *cypriaca* (MAVROMOUSTAKIS, 1938)

1938 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Southwestern Asia: CY, IL, JOR, SYR.

**Identification**—**Keys, Descriptions**: Tkalcu (1980a: 38).

*dalmatica* (MORAWITZ, 1871)

*Hoplitis (Anthocopa)*

1871 *Osmia dalmatica* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 8: 207. Type material: Syntypes ♂(♂), ♀(♀), “Dalmatia” [Croatia].—Combination *Osmia (Furcosmia) dalmatica* MORAWITZ in Schmiedeknecht (1885: 22 [888]). Combination *Anthocopa (Anthocopa) dalmatica* (MORAWITZ) in Tkalcu (1974b: 329).

**Distribution**—Europe: AL, AND, CH, E, F, GR, H, HR, I, I(Sa), MK, SLO. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Benoist (1931); Ducke (1900); Móczár (1958); Schmiedeknecht (1885–1886); Zanden (1985: 56).

*daniana* (MAVROMOUSTAKIS, 1949)

*Hoplitis (Anthocopa)*

1949 *Osmia daniana* MAVROMOUSTAKIS, Eos (Madrid), 25: 294. Type material: Holotype ♂, “Dan” [Israel], DAAN (Nicosia); paratype ♀.—Combination *Anthocopa (Anthocopa) daniana* (MAVROMOUSTAKIS) in Zanden (1988b: 118).

**Distribution**—Southwestern Asia: IL.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*daurica* (RADOSZKOWSKI, 1887)

*Hoplitis (Anthocopa)*

1887 *Osmia Daurica* RADOSZKOWSKI, Horae Societatis Entomologicae Rossicae (St. Petersburg), 21: 284. Type material: ♀(♀), “Côté orientale du lac Baical” [Russia].—Combination *Anthocopa (Anthocopa) daurica*

(RADOSZKOWSKI) in Zanden (1988b: 118).

**Distribution**—Northern Asia: RUS(ES).

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*diabolica* (BENOIST, 1934)

*Hoplitis (Anthocopa)*

1934 *Osmia diabolica* BENOIST, Bulletin de la Société Entomologique de France, 39: 159. **Type material:** Holotype ♀, “Alger, Maison Carrée” [Algeria], MNHN (Paris).—Combination *Anthocopa (Anthocopa) diabolica* (BENOIST) in Zanden (1985: 66).

**Distribution**—Northern Africa: DZ.

**Identification**—**Keys, Descriptions:** Zanden (1985: 66). **Note:** Male unknown.

*duckeana* (KOHL, 1905)

*Hoplitis (Anthocopa)*

1905 *Osmia Duckeana* KOHL, Annalen des Kaiserlich-Königlichen Naturhistorischen Hofmuseums (Wien), 20: 241. **Type material:** Holotype ♂, “Erdschias (Illany-Dagh, 1400 m)” [Turkey], NMW (Wien).—Combination *Anthocopa (Anthocopa) duckeana* (KOHL) in Zanden (1980: 231).

**Distribution**—Northern Asia: TJ. Southwestern Asia: SYR, TR.

**Identification**—**Keys, Descriptions:** Zanden (1980: 232, 1992b: 67).

*ferianaensis* (ZANDEN, 1991)

*Hoplitis (Anthocopa)*

1991 *Anthocopa (Anthocopa) ferianaensis* ZANDEN, Reichenbachia (Dresden), 28: 163. **Type material:** Holotype ♂, “25 km S. Feriana, Mejen Bel, Abbès” [Tunisia], ZMUC (Copenhagen); paratypes ♂♂.

**Distribution**—Northern Africa: TN.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Female unknown.

*furcula* (MORAWITZ, 1875)

*Hoplitis (Anthocopa)*

1875 *Osmia furcula* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 93. **Type material:** Lectotype ♂, by designation of Zanden (1986: 70), “Tschardara” [Kazakhstan], ZIN (St. Petersburg); paralectotypes ♂♂, ♀♀.—Combination *Anthocopa (Anthocopa) furcula* (MORAWITZ) in Zanden (1988b: 118).

**Distribution**—Europe: ARM, GR, GR(Cr). Northern Asia: KZ. Southwestern Asia: TR.

**Identification**—**Keys, Descriptions:** Ducke (1900); Stanek (1969a: 31–32); Zanden (1986: 70–72).

*glasunovi* (MORAWITZ, 1894)

*Hoplitis (Anthocopa)*

1894 *Osmia Glasunovi* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 28: 29. **Type material:** Syntypes ♂(♂), ♀(♀), “Varsaut” [Tajikistan], ZIN (St. Petersburg).—Combination *Anthocopa (Anthocopa)*

*glasunovi* (MORAWITZ) in Zanden (1988b: 118).

**Distribution**—Northern Asia: TJ.

**Identification**—Keys, Descriptions: Duce (1900).

*graeca* (TKALCU, 2000)

*Hoplitis (Anthocopa)*

2000 *Anthocopa (Arctosmia) graeca* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 64: 305. **Type material**: Holotype ♂, “Süd-Graccia. Attica östl. Athen” [Greece], Tkalcu Collection (Praha); paratypes ♀♀.

**Distribution**—Europe: GR. Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

– subspecies *graeca* (TKALCU, 2000)

2000 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: GR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

– subspecies *ionica* (TKALCU, 2000)

2000 *Anthocopa (Arctosmia) graeca ionica* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 64: 305. **Type material**: Holotype ♀, “Ephessos” [Turkey], Liebig Collection; paratypes ♀♀.

**Distribution**—Europe: GR. Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*grumi* (MORAWITZ, 1894)

*Hoplitis (Anthocopa)*

1894 *Osmia Grumi* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 28: 28. **Type material**: Lectotype ♂, by designation of Zanden (1986: 70), “Jagnob: Kol” [Tajikistan], ZIN (St. Petersburg).—Combination *Anthocopa (Arctosmia) grumi* (MORAWITZ) in Zanden (1980: 232).

1894 *Osmia jagnobensis* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 28: 32. **Type material**: Lectotype ♀, by designation of Zanden (1986: 70), “Jagnob: Kol” [Tajikistan], ZIN (St. Petersburg).—Synonymy in Benoist (1927a: 171) and in Zanden (1986: 70).

**Distribution**—Europe: E, P. Northern Asia: TJ; Central Asian Ranges. Southwestern Asia: TR.

**Identification**—Keys, Descriptions: Benoist (1927a: 171); Duce (1900); Zanden (1985: 51–52, 1986: 70).

*hemisphaerica* (ALFKEN, 1935)

*Hoplitis (Anthocopa)*

1935 *Osmia hemisphaerica* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 187. **Type material**: Lectotype ♂, by designation of Zanden (1989: 74), “Jericho” [Palestine], ZMHB

(Berlin); paralectotypes ♂♂, paralectotypes ♀♀ [= *Hoplitis anipuncta* (ALFKEN) in Zanden (1989: 74).—Combination *Anthocopa* (*Anthocopa*) *hemisphaerica* (ALFKEN) in Zanden (1988b: 118).

**Distribution**—Southwestern Asia: IL, JOR, SYR.

**Identification**—**Keys, Descriptions:** Mavromoustakis (1948b: 217); Zanden (1986: 72, 1989: 74).

***idalia*** (MAVROMOUSTAKIS, 1948)

*Hoplitis* (*Anthocopa*)

1948 *Osmia idalia* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 1: 581. **Type material:** Holotype ♀, “Yermasoyia River” [Cyprus], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Anthocopa* (*Anthocopa*) *idalia* (MAVROMOUSTAKIS) in Zanden (1980: 232, 1988b: 118).

**Distribution**—Europe: GR(Cr). **Southwestern Asia:** CY, TR.

**Identification**—**Keys, Descriptions:** Zanden (1986: 72, 1989: 74).

***ilamana*** (ZANDEN, 1994)

*Hoplitis* (*Anthocopa*)

1994 *Anthocopa* (*Anthocopa*) *ilamana* ZANDEN, Linzer Biologische Beiträge, 26: 1118. **Type material:** Holotype ♂, “Mt Ilamane, 2200 m” [Algeria], Schwarz Collection (Ansfelden); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: DZ, MA.

**Identification**—**Keys, Descriptions:** Zanden (1994b: 1117).

***jakovlevi*** (RADOSZKOWSKI, 1874)

*Hoplitis* (*Anthocopa*)

1874 *Pseudosmia jakovlevi* RADOSZKOWSKI, Bulletin de la Société Impériale des Naturalistes de Moscou, 48: 155. **Type material:** Lectotype ♀, by designation of Zanden (1996b: 885), “Astrakhan” [Russia], ISZP (Krakow); paralectotype ♀.—Combination *Osmia jakovlevi* (RADOSZKOWSKI) in Dalla Torre (1896: 398). Combination *Hoplitis* (*Pseudosmia*) *jakovlevi* (RADOSZKOWSKI) in Zanden (1988b: 119). Combination *Anthocopa* (*Anthocopa*) *jakovlevi* (RADOSZKOWSKI) in Zanden (1996b: 885).

1875 *Osmia serrilabris* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 91. **Type material:** Lectotype ♀, by designation of Zanden (1996b: 885), “prope Kuldscham” [Turkestan], ZMUM (Moscow).—Combination *Anthocopa* (*Anthocopa*) *serrilabris* (MORAWITZ) in Zanden (1988b: 118).—Synonymy in Zanden (1996b: 885).

1879 *Osmia quadridentata* FONSCOLOMBE, in: Pérez, Actes de la Société Linnéenne de Bordeaux, 33: 191. **Type material:** Lectotype ♀, by designation of Zanden (1996b: 885), “Marseille” [France], MNHN (Paris); paralectotypes ♀♀.—Combination *Anthocopa serrilabris quadridentata* (FONSCOLOMBE) in Zanden (1988b: 115).—Synonymy in Zanden (1996b: 885).

**Distribution**—Europe: F, I, I(Si), RUS(SR). **Northern Africa:** DZ, TN. **Northern Asia:** RC, KZ, TJ, TM. **Southwestern Asia:** IR, TR.

**Identification**—**Keys, Descriptions:** Banaszak and Romasenko (2001); Benoist (1931); Duce (1900); Medvedeva (1978); Morawitz (1895: 21–22); Radoszkowski (1886: 14); Schmiedeknecht (1885–1886); Stanek (1968: 386–387).

***jerichoensis*** (ZANDEN, 1996)

*Hoplitis* (*Anthocopa*)

1996 *Anthocopa* (*Anthocopa*) *jerichoensis* ZANDEN, Linzer Biologische Beiträge, 28: 888. **Type material:** Holotype

♂, “Jericho, 200 m, Wadi Kelt” [Palestine], BMNH (London); paratypes ♂♂.

**Distribution**—Southwestern Asia: IL.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*longispina* (PÉREZ, 1895)

*Hoplitis (Anthocopa)*

1895 *Osmia longispina* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 14. **Type material**: Lectotype ♂, by designation of Zanden (1988a: 57), “Mascara” [Algeria], MNHN (Paris).—Combination *Anthocopa (Anthocopa) longispina* (PÉREZ) in Zanden (1988b: 118).

1899 *Osmia gigas* FRIESE, Entomologische Nachrichten (Berlin), 25: 62. **Type material**: Holotype ♀, “Algerien” [Algeria], ZMHB (Berlin).—Synonymy in Zanden (1988a: 57).

**Distribution**—Northern Africa: DZ, TN.

**Identification**—**Keys, Descriptions**: Alfken (1914: 200); Ducke (1900).

– subspecies *longispina* (PÉREZ, 1895)

1895 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Northern Africa: DZ.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *vogti* (FRIESE, 1911)

1911 *Osmia vogti* FRIESE, Archiv für Naturgeschichte, 77: 137. **Type material**: Syntypes ♂(♂), ♀(♀), “Tunis” [Tunisia], ZMHB (Berlin).—Combination *Anthocopa (Anthocopa) longispina vogti* (FRIESE) in Zanden (1988b: 118).

**Distribution**—Northern Africa: TN.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*maghrebensis* (ZANDEN, 1992)

*Hoplitis (Anthocopa)*

1992 *Anthocopa (Anthocopa) maghrebensis* ZANDEN, Reichenbachia (Dresden), 29: 67. **Type material**: Holotype ♂, “Quarzazate” [Morocco], RMNH (Leiden); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions**: Zanden (1983: 129–130, as *Anthocopa consanguinea*).

*maroccana* (ZANDEN, 1998)

*Hoplitis (Anthocopa)*

1998 *Anthocopa (Anthocopa) maroccana* ZANDEN, Linzer Biologische Beiträge, 30: 526. **Type material**: Holotype ♂, “Erfoud” [Morocco], RMNH (Leiden).

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Female unknown.

*mocsaryi* (FRIESE, 1895)

*Hoplitis (Anthocopa)*

- 1895 *Osmia mocsaryi* FRIESE, Entomologische Nachrichten (Berlin), 21: 133. Type material: Syntypes ♂, ♀, “Budapest, Ofener Gebirge” [Hungary].—Combination *Anthocopa (Arctosmia) mocsaryi* (FRIESE) in Zanden (1988b: 118).
- 2006 *Osmia linophila* WESTRICH, Entomofauna (Ansfelden), 27: 297. NOMEN NOVUM with same type specimen for preoccupied *Osmia mocsaryi* FRIESE, 1895 [not *Chelostoma mocsaryi* SCHLETTERER, 1889].

**Distribution**—Europe: A, ARM, E, F, F(Co), GR, H, RUS, SK. **Southwestern Asia:** TR.

**Identification**—**Keys, Descriptions:** Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Mavromoustakis (1938: 467, 1949: 295–296); Medvedeva (1978); Móczár (1958); Scheuchl (1996).

*murina* (TKALCU, 1992)

*Hoplitis (Anthocopa)*

- 1992 *Anthocopa (Glossosmia) murina* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 56: 215. Type material: Holotype ♂, “Kara Kala” [Turkmenistan], Halada Collection; paratypes ♂♂, ♀♀.

**Distribution**—Northern Asia: TM.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*nasoincisa* (FERTON, 1914)

*Hoplitis (Anthocopa)*

- 1914 *Osmia nasoincisa* FERTON, Annales de la Société Entomologique de France, 83: 83. Type material: Lectotype ♀, by designation of Zanden (1988a: 60), “Dellys” [Algeria], MNHN (Paris).—Combination *Anthocopa (Anthocopa) nasoincisa* (FERTON) in Zanden (1988b: 118).

**Distribution**—Northern Africa: DZ.

**Identification**—**Keys, Descriptions:** Zanden (1988a: 60). **Note:** Male unknown.

*nigrocolor* (ZANDEN, 1991)

*Hoplitis (Anthocopa)*

- 1991 *Anthocopa (Anthocopa) nigrocolor* ZANDEN, Linzer Biologische Beiträge, 23: 346. Type material: Holotype ♀, “Matruh G.” [Egypt], RMNH (Leiden); paratypes ♀♀.

**Distribution**—Northern Africa: ET, LAR, TN.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*obtusa* (FRIESE, 1899)

*Hoplitis (Anthocopa)*

- 1899 *Osmia obtusa* FRIESE, Entomologische Nachrichten (Berlin), 25: 62. Type material: Holotype ♂, “Gilek, Taurus cilic., Asia minor” [Turkey], ZMHB (Berlin).—Combination *Anthocopa (Arctosmia) obtusa* (FRIESE) in Tkalcu

(1974b: 329).

**Distribution**—Europe: AL, GR, GR(Cr), HR?. **Southwestern Asia**: IL, JOR, RL, SYR, TR.**Identification**—**Keys, Descriptions**: Duce (1900); Zanden (1987: 80).*papaveris* (LATREILLE, 1799)*Hoplitis (Anthocopa)*

- 1799 *Apis papaveris* LATREILLE, Bulletin des Sciences par la Société Philomathique, II, no. 29: 33 [not seen]. **Type material**: Syntypes ♂(♂), ♀(♀), [France]. **Type species** of *Anthocopa* LEPELETIER & SERVILLE, *Furcosmia* SCHMIEDEKNECHT and *Phyllotoma* DUMÉRIL.—Combination *Osmia papaveris* (LATREILLE) in Spinola (1808: 201). Combination *Phyllotoma papaveris* (LATREILLE) in Duméril (1860: 844). Combination *Osmia (Furcosmia) papaveris* (LATREILLE) in Schmiedeknecht (1885: 22 [888]). Combination *Anthocopa (Anthocopa) papaveris* (LATREILLE) in Tkalcu (1969a: 330).
- 1841 *Osmia hyalinipennis* LEPELETIER, Histoire Naturelle des Insectes, Hyménoptères, vol. 2, p. 329 [not seen]. **Type material**: Lectotype ♀, by designation of Tkalcu (1974b: 329), “Environs de Paris” [France], MNHN (Paris).—Synonymy in Benoist (1931: 44).

**Distribution**—Europe: A, AL, B, BG, CH, CZ, D, E, E, H, I, I(Sa), I(Si), NL, RUS, SK, UA; Caucasus. **Northern Asia**: KZ, RC. **Southwestern Asia**: TR.**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Duce (1900); Medvedeva (1978); Móczár (1958); Radoszkowski (1887a: 291); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1969a: 330–332, 1979: 318); Wu (2006); Zanden (1983: 130, 1985: 68).*perezi* (FERTON, 1895)*Hoplitis (Anthocopa)*

- 1895 *Osmia Perezii* FERTON, Actes de la Société Linnéenne de Bordeaux, 47: 205. **Type material**: Lectotype ♀, by designation of Tkalcu (1969a: 330), “Miramas” [France], MNHN (Paris).—Combination *Anthocopa (Anthocopa) perezi* (FERTON) in Tkalcu (1969a: 330).
- 1899 *Osmia papaveris convolvuli* DUCKE, Entomologische Nachrichten (Berlin), 25: 214. **Type material**: Syntypes ♂♂, ♀♀, “Triest” [Italy], “Sicilien” [Italy: Sicily], “Fiume” [Croatia], “Spanien” [Spain].—Synonymy in Tkalcu (1969a: 330).

**Distribution**—Europe: E, E, F(Co), GR, HR, I, I(Si), MK. **Northern Africa**: MA. **Southwestern Asia**: AFG, TR.**Identification**—**Keys, Descriptions**: Benoist (1931); Duce (1900); Tkalcu (1969a: 330–332).*picicornis* (MORAWITZ, 1895)*Hoplitis (Anthocopa)*

- 1895 *Osmia picicornis* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 29: 22. **Type material**: Syntypes ♂(♂), ♀(♀), “bei Tedshen” [Turkmenistan], ZIN (St. Petersburg).—Combination *Anthocopa (Anthocopa) picicornis* (MORAWITZ) in Zanden (1988b: 118).

**Distribution**—**Northern Asia**: KS, TJ, TM. **Southwestern Asia**: AFG, IR, TR.**Identification**—**Keys, Descriptions**: Duce (1900).



*pulchella* (PÉREZ, 1895)*Hoplitis (Anthocopa)*

- 1895 *Osmia pulchella* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 15. Type material: Lectotype ♀, by designation of Tkalcu (1975a: 181), “Kérouan” [Tunisia], MNHN (Paris).—Combination *Anthocopa (Anthocopa) pulchella* (PÉREZ) in Zanden (1988b: 118).
- 1899 *Osmia lativentris* FRIESE, Entomologische Nachrichten (Berlin), 25: 27. Type material: Lectotype ♂, by designation of Zanden (1989: 76), “Algerien” [Algeria], “Tunis” [Tunisia], ZMHB (Berlin); paralectotype ♂.—Synonymy in Zanden (1988b: 118).
- 1899 *Osmia lativentris albiscopa* FRIESE, Entomologische Nachrichten (Berlin), 25: 27. Type material: ♀(♀), “Tunis” [Tunisia].—Synonymy in Zanden (1988b: 118).

**Distribution**—Europe: E. Northern Africa: DZ, ET, LAR, MA, TN. Southwestern Asia: JOR.

**Identification**—Keys, Descriptions: Duce (1900); Zanden (1989: 76).

*quadrispina* (TKALCU, 1992)*Hoplitis (Anthocopa)*

- 1992 *Anthocopa (Anthocopa) quadrispina* TKALCU, Acta Societatis Zoologicae Bohemoslovaca (Praha), 56: 213. Type material: Holotype ♂, “Matmata” [Tunisia], RMNH (Leiden); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: DZ, LAR, TN.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*quarazati* (ZANDEN, 1998)*Hoplitis (Anthocopa)*

- 1998 *Anthocopa (Anthocopa) quarazati* ZANDEN, Linzer Biologische Beiträge, 30: 526. Type material: Holotype ♂, “Amerzgane, 30 km N Quarazate” [Morocco], RMNH (Leiden).

**Distribution**—Northern Africa: MA.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*rubricrus* (FRIESE, 1899)*Hoplitis (Anthocopa)*

- 1899 *Osmia rubricrus* FRIESE, Entomologische Nachrichten (Berlin), 25: 25. Type material: Lectotype ♂, by designation by Peters (Zanden, 1994b: 1115), “Biskra, Oued S’na” [Algeria], ZMHB (Berlin); paralectotype ♀.—Combination *Anthocopa (Anthocopa) rubricrus* (FRIESE) in Zanden (1988b: 118).

**Distribution**—Northern Africa: DZ, MA; Sahara. Southwestern Asia: PAK. **Extralimital**: Oriental (India).

**Identification**—Keys, Descriptions: Duce (1900).

*rigidorsis* (PÉREZ, 1895)*Hoplitis (Anthocopa)*

- 1895 *Osmia rigidorsis* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 14. Type material: Lectotype ♀, by designation of Tkalcu (1975a: 181), “Mascara” [Algeria], MNHN (Paris); paralectotype ♂.—Combination *Anthocopa (Anthocopa) rigidorsis* (PÉREZ) in Zanden (1988b: 118).
- 1934 *Osmia fasciculata* ALFKEN, Jahresbericht der Naturforschenden Gesellschaft Graubündens, 72: 26. Type mate-

rial: Lectotype ♀, by designation of Zanden (1986: 68), “Mandas” [Italy: Sardinia], ETHZ (Zürich); paralectotypes ♀♀.—Synonymy in Zanden (1986: 68).

**Distribution**—Europe: I, I(Sa). Northern Africa: DZ, MA. Southwestern Asia: TR?.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*saundersi* (VACHAL, 1891)

*Hoplitis (Anthocopa)*

1891 *Osmia Saundersi* VACHAL, Revue d'Entomologie, Société Française d'Entomologie, 1861: 66. **Type material:** Lectotype ♀, by designation of Tkalcu (1975a: 180), “Algérie” [Algeria], MNHN (Paris); paralectotype ♂.—Combination *Anthocopa (Anthocopa) saundersi* (VACHAL) in Tkalcu (1975a: 180).

**Distribution**—Northern Africa: DZ, MA. Southwestern Asia: PAK. Extralimital: Oriental (India).

**Identification**—**Keys, Descriptions:** Duce (1900).

*saxialis* (ZANDEN, 1994)

*Hoplitis (Anthocopa)*

1994 *Anthocopa (Anthocopa) saxialis* ZANDEN, Reichenbachia (Dresden), 30: 167. **Type material:** Holotype ♂, “Zentral-Kaukasus, Itkol Umgeb. 2100–2300 m“ [Russia], MTD (Dresden); paratypes ♂♂, ♀.

**Distribution**—Europe: RUS(SR); Caucasus.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*semirubra* (FRIESE, 1899)

*Hoplitis (Anthocopa)*

1899 *Osmia semirubra* FRIESE, Entomologische Nachrichten (Berlin), 25: 329. **Type material:** Syntypes ♂♂, ♀♀, “Jericho (Jordanthal)” [Palestine], ZMHB (Berlin), OUMNH (Oxford).—Combination *Anthocopa (Anthocopa) semirubra* (FRIESE) in Zanden (1988b: 118).

**Distribution**—Southwestern Asia: IL, JOR, SYR.

**Identification**—**Keys, Descriptions:** Mavromoustakis (1948b: 219–220, 1954b: 263).

*simula* (GRIBODO, 1894)

*Hoplitis (Anthocopa)*

1894 *Osmia simula* GRIBODO, Bullettino della Società Entomologica Italiana, 26: 287. **Type material:** Holotype ♀, “Tunisi” [Tunisia], MSNG (Genova).—Combination *Osmia (Osmia) simula* GRIBODO in Friese (1911b: 90). Combination *Anthocopa simula* (GRIBODO) in Zanden (1990: 54).

1914 *Osmia florigera* FERTON, Annales de la Société Entomologique de France, 83: 84. **Type material:** Lectotype ♀, by designation of Zanden (1988a: 62), “Dellys” [Algeria], MNHN (Paris).—Combination *Anthocopa (Anthocopa) florigera* (FERTON) in Zanden (1988b: 118).—Synonymy in Zanden (1990: 54).

**Distribution**—Northern Africa: DZ, MA, TN.

**Identification**—**Keys, Descriptions:** Zanden (1985: 53, 1988a: 62).

*singularis* (MORAWITZ, 1875)*Hoplitis (Anthocopa)*

1875 *Osmia singularis* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 89. Type material: ♂(♂), “in valle Sarafschan” [Tajikistan], ZIN (St. Petersburg). Type species of *Glossosmia* MICHENER.—Combination *Anthocopa (Glossosmia) singularis* (MORAWITZ) in Popov (1952b: 101). Combination *Hoplitis (Glossosmia) singularis* (MORAWITZ) in Zanden (1988b: 119). Combination *Osmia (Alcidamea) singularis* MORAWITZ in Warncke (1991h: 735).

**Distribution**—Northern Asia: KS, KZ, TJ, TM, UZ. Southwestern Asia: IL, TR.

**Identification**—Keys, Descriptions: Duce (1900).

*sinuata* (PÉREZ, 1895)*Hoplitis (Anthocopa)*

1895 *Osmia sinuata* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 17. Type material: Lectotype ♀, by designation of Zanden (1988a: 58), “Foum Tatahouin” [Tunisia], MNHN (Paris).—Combination *Osmia (Chalcosmia) sinuata* PÉREZ in Zanden (1988a: 58). Combination *Anthocopa (Anthocopa) sinuata* (PÉREZ) in Zanden (1988b: 118).

1899 *Osmia rufiscopa* FRIESE, Entomologische Nachrichten (Berlin), 25: 26. Type material: Lectotype ♀, by designation of Zanden (1988a: 58), “Biskra” [Algeria], ZMHB (Berlin); paralectotype ♀.—Synonymy in Zanden (1988a: 58).

**Distribution**—Northern Africa: DZ, MA, TN.

**Identification**—Keys, Descriptions: Duce (1900); Zanden (1988a: 59). **Note**: Male unknown.

*ulaangomensis* (TKALCU, 1995)*Hoplitis (Anthocopa)*

1995 *Anthocopa (Arctosmia) ulaangomensis* TKALCU, Entomologische Abhandlungen (Dresden), 57: 114. Type material: Holotype ♀, “NW-Mongolei: Ulaangom/Charchiraa, Umgeb. Kurort” [Mongolia], MLUH (Halle); paratype ♀.

**Distribution**—Northern Asia: MGL.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*unispina* (ALFKEN, 1935)*Hoplitis (Anthocopa)*

1935 *Osmia (Lithosmia) unispina* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 187. Type material: Syntypes ♂♂, ♀♀ (see Tkalcu, 2000a: 306), “Nablus” [Palestine], ZMHB (Berlin).—Combination *Anthocopa (Arctosmia) unispina* (ALFKEN) in Zanden (1988b: 119).

**Distribution**—Europe: GR?. Southwestern Asia: IL, JOR, SYR, TR.

**Identification**—Keys, Descriptions: Tkalcu (2000a: 306–309).

*urfensis* (ZANDEN, 1984)*Hoplitis (Anthocopa)*

1984 *Anthocopa (Anthocopa) urfensis* ZANDEN, Reichenbachia (Dresden), 22: 176. Type material: Holotype ♂,

“Çeylanpinar/Urfa” [Turkey], RMNH (Leiden); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: SYR, TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*ursina* (FRIESE, 1920)

*Hoplitis (Anthocopa)*

1920 *Osmia ursina* FRIESE, Deutsche Entomologische Zeitschrift (Berlin), 1920: 49. **Type material**: Lectotype ♀, by designation of Zanden (1985: 48), “Tunis merid.” [Tunisia], ZMHB (Berlin); paralectotype ♂.—Combination *Anthocopa (Arctosmia) ursina* (FRIESE) in Zanden (1985: 48).

1927 *Osmia armata* BENOIST, Annales de la Société Entomologique de France, 96: 270. **Type material**: Lectotype ♂, by designation of Zanden (1985: 48), “Alger” [Algeria], MNHN (Paris); paralectotype ♀.—Synonymy in Zanden (1985: 48).

**Distribution**—Northern Africa: DZ, TN.

**Identification**—Keys, Descriptions: Zanden (1985: 48–49).

*villosa* (SCHENCK, 1853)

*Hoplitis (Anthocopa)*

1853 *Megachile villosa* SCHENCK, Jahrbücher des Vereins für Naturkunde im Herzogthum Nassau, 9: 178. **Type material**: ♀(♀), [Germany]. **Type species** of *Arctosmia* SCHMIEDEKNECHT and *Lithosmia* ALFKEN.—Combination *Osmia (Lithosmia) villosa* (SCHENCK) in Alfken (1935: 188). Combination *Anthocopa (Arctosmia) villosa* (SCHENCK) in Tkalcu (1974b: 329).

1869 *Osmia platycera* GERSTAECKER, Entomologische Zeitung (Stettin), 30: 338. **Type material**: Syntypes ♂(♂), ♀(♀), “Chur” [Switzerland], presumed lost (Tkalcu, 1974b: 329).—Synonymy in Dalla Torre (1896: 414).

**Distribution**—Europe: A, AL?, AND, B, CH, CZ, D, DK, E, F, FL, I, L, MK?, NL, RUS, SK, SLO. **Southwestern Asia**: TR?.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1995: 115, 2000a: 306–309); Zanden (1987: 80).

*wadicola* (ALFKEN, 1935)

*Hoplitis (Anthocopa)*

1935 *Osmia (Lithosmia) wadicola* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 188. **Type material**: Syntypes ♀♀, “Wadi el Kelt” [Israel], ZHMB (Berlin).—Combination *Anthocopa (Anthocopa) wadicola* (ALFKEN) in Zanden (1988b: 118).

**Distribution**—Southwestern Asia: IL, TR.

**Identification**—Keys, Descriptions: Mavromoustakis (1938: 469–470, 1949: 293–294); Tkalcu (1992: 213).

*wahrmani* (MAVROMOUSTAKIS, 1948)

*Hoplitis (Anthocopa)*

1948 *Osmia wahrmani* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 1: 218. **Type material**: Holotype ♀, “Mikve Jesrael” [Israel], DAAN (Nicosia); paratypes ♂, ♀.—Combination *Anthocopa (Anthocopa) wahrmani* (MAVROMOUSTAKIS) in Zanden (1988b: 118).

**Distribution**—Southwestern Asia: IL.

**Identification**—**Keys, Descriptions:** Mavromoustakis (1954b: 263); Zanden (1986: 72).

*yermasoyiae* (MAVROMOUSTAKIS, 1938)

*Hoplitis (Anthocopa)*

1938 *Osmia yermasoyiae* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 11, 2: 464. Type material: Holotype ♂, “Yermasoyia” [Cyprus], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Anthocopa (Anthocopa) yermasoyiae* (MAVROMOUSTAKIS) in Tkalcu (1979: 318).

**Distribution**—Europe: AL, GR; Yugoslavia. **Southwestern Asia:** CY, RL, TR.

**Identification**—**Keys, Descriptions:** Mavromoustakis (1949: 295–296); Tkalcu (1979: 318).

– subspecies *asiae* (TKALCU, 1979)

1979 *Anthocopa (Anthocopa) yermasoyiae asiae* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 76: 319. Type material: Holotype ♀, “Erzurum” [Turkey], EMET (Erzurum); paratypes ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

– subspecies *corcyraea* (TKALCU, 1979)

1979 *Anthocopa (Anthocopa) yermasoyiae corcyraea* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 76: 319. Type material: Holotype ♀, “Corfu” [Greece], BMNH (London); paratypes ♂, ♀♀.

**Distribution**—Europe: AL, GR; Yugoslavia.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *yermasoyiae* (MAVROMOUSTAKIS, 1938)

1938 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: GR. **Southwestern Asia:** CY, RL, TR.

**Identification**—**Keys, Descriptions:** Tkalcu (1979: 319).

*zaienorum* (BENOIST, 1927)

*Hoplitis (Anthocopa)*

1927 *Osmia zaienorum* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 7: 170. Type material: Lectotype ♀, by designation of Zanden (1985: 51), “M’rirt, à environ 80 kilomètres au Sud de Meknès” [Morocco], MNHN (Paris); paralectotypes ♀♀.—Combination *Anthocopa (Arctosmia) zaienorum* (BENOIST) in Zanden (1985: 51).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—**Keys, Descriptions:** Zanden (1985: 51–52).

*Hoplitis* subgenus *Bytinskia* MAVROMOUSTAKIS

Palearctic species: 3

*erythrogastra* (MAVROMOUSTAKIS, 1954)*Hoplitis* (*Bytinskia*)

1954 *Bytinskia erythrogastra* MAVROMOUSTAKIS, Bulletin of the Research Council of Israel, 4: 270. Type material: Holotype ♀, “Bat Yam” [Israel], DAAN (Nicosia); paratypes ♂♂, ♀♀. Type species of *Bytinskia* MAVROMOUSTAKIS.

**Distribution**—Northern Africa: MA, TN. Southwestern Asia: IL, JOR, RL.

**Identification**—**Keys, Descriptions**: Mavromoustakis (1949: 288, as *Osmia sordida*); Warncke (1991f).

*negevensis* (WARNCKE, 1991)*Hoplitis* (*Bytinskia*)

1991 *Bytinskia negevensis* WARNCKE, Linzer Biologische Beiträge, 23: 486. Type material: Holotype ♀, “Giv’ ot Loven/13 km S Paran in der Wüste Negev” [Israel], OLML (Linz).

**Distribution**—Southwestern Asia: IL.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*parasitica* (WARNCKE, 1991)*Hoplitis* (*Bytinskia*)

1991 *Bytinskia parasitica* WARNCKE, Linzer Biologische Beiträge, 23: 484. Type material: Holotype ♀, “Tal südlich des Gevria-Passes in 3000 m im Sat-Gebirge/Prov. Hakkari” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: IR, TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*Hoplitis* subgenus *Chlidoplitis* GRISWOLD

Palearctic species: 7

*heinrichi* ZANDEN, 1980*Hoplitis* (*Chlidoplitis*)

1980 *Hoplitis* (*Hoplitis*) *heinrichi* ZANDEN, Faunistische Abhandlungen (Dresden), 7: 234. Type material: Holotype ♂, “Urfa” [Turkey], SMFD (Frankfurt); paratypes ♂♂. Type species of *Chlidoplitis* GRISWOLD.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: Zanden (1992c: 818–819).

*illustris* ZANDEN, 1992*Hoplitis* (*Chlidoplitis*)

1992 *Hoplitis* (*Hoplitis*) *illustris* ZANDEN, Linzer Biologische Beiträge, 24: 817. Type material: Holotype ♂, “Ürgüp” [Turkey], RMNH (Leiden); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*loreicornis* (BENOIST, 1934)*Hoplitis (Chlidoplitis)*

- 1934 *Osmia loreicornis* BENOIST, Bulletin de la Société Entomologique de France, 39: 159. Type material: Holotype ♂, “Ain Leuh” [Morocco], MNHN (Paris).—Combination *Hoplitis (Hoplitis) loreicornis* (BENOIST) in Zanden (1985: 66).

**Distribution**—Northern Africa: MA.

**Identification**—Keys, Descriptions: Zanden (1985: 66). **Note**: Female unknown.

*lysholmi* (FRIESE, 1899)*Hoplitis (Chlidoplitis)*

- 1899 *Osmia lysholmi* FRIESE, Entomologische Nachrichten (Berlin), 25: 331. Type material: Syntypes ♂♂, ♀♀, “Jericho” [Palestine], “Brumana” [Lebanon], “Mersina” [Turkey], ZMHB (Berlin).—Combination *Hoplitis (Hoplitis) lysholmi* (FRIESE) in Zanden (1988b: 121).

**Distribution**—Europe: E, GR. Southwestern Asia: IL, RL, SYR, TR.

**Identification**—Keys, Descriptions: Benoist (1927a: 173); Morice (1901).

*onychophora* (MAVROMOUSTAKIS, 1939)*Hoplitis (Chlidoplitis)*

- 1939 *Osmia onychophora* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 11, 3: 227. Type material: Holotype ♂, “Gazah” [Palestine], DAAN (Nicosia).

**Distribution**—Southwestern Asia: IL, TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*taenioceras* (BENOIST, 1927)*Hoplitis (Chlidoplitis)*

- 1927 *Osmia taenioceras* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 7: 173. Type material: Holotype ♂, “M’rirt” [Morocco], MNHN (Paris).—Combination *Hoplitis (Hoplitis) taenioceras* (BENOIST) in Zanden (1985: 52).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—Keys, Descriptions: Zanden (1985: 52). **Note**: Female unknown.

*teucrui* (BENOIST, 1927)*Hoplitis (Chlidoplitis)*

- 1927 *Osmia teucrui* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 7: 171. Type material: Lectotype ♂, by designation of Zanden (1985: 52), “Meknès” [Morocco], MNHN (Paris); paralectotype ♀.—Combination *Hoplitis (Hoplitis) teucrui* (BENOIST) in Zanden (1985: 52).

**Distribution**—Northern Africa: MA.

**Identification**—Keys, Descriptions: Zanden (1985: 52).



*Hoplitis* subgenus *Coloplitis* GRISWOLD

Palearctic species: 2

*persica* (WARNCKE, 1991)*Hoplitis (Coloplitis)*

1991 *Osmia (Annosmia) persica* WARNCKE, Linzer Biologische Beiträge, 23: 324. Type material: Holotype ♂, “Steppa pressa Chitgar/18 km W di Teheran” [Iran], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: IR.

**Identification**—**Keys, Descriptions**: Griswold and Michener (1998: 245–246).

*premordica* GRISWOLD, 1998*Hoplitis (Coloplitis)*

1998 *Hoplitis (Coloplitis) premordica* GRISWOLD, in: Griswold and Michener, Journal of the Kansas Entomological Society, 70: 244. Type material: Holotype ♂, “Baluchistan: Pishin, 40 km N Quetta” [Pakistan], AMNH (New York); paratypes ♂♂, ♀♀. Type species of *Coloplitis* GRISWOLD.

**Distribution**—Southwestern Asia: PAK.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*Hoplitis* subgenus *Eurypariella* TKALCU

Palearctic species: 2

*denudata* (MORAWITZ, 1880)*Hoplitis (Eurypariella)*

1880 *Osmia denudata* MORAWITZ, Bulletin de l'Académie Impériale des Sciences de St.-Petersbourg, 26: 385. Type material: Holotype ♀, “in der nordwestlichen Mongolei von Potanin” [Mongolia], ZIN (St. Petersburg). Type species of *Eurypariella* TKALCU.—Combination *Stenosmia denudata* (MORAWITZ) in Zanden (1988b: 128). Combination *Eurypariella denudata* (MORAWITZ) in Tkalcu (1995: 111).

**Distribution**—Northern Asia: MGL, RC.

**Identification**—**Keys, Descriptions**: Tkalcu (1995: 111–114); Wu (2006).

*procerior* (TKALCU, 2000)*Hoplitis (Eurypariella)*

2000 *Eurypariella procerior* TKALCU, Entomofauna (Ansfelden), 21: 374. Type material: Holotype ♀, “Gansu, Nanshan-Mountains, north of Datong River, 2550 mNN, 36°56.70'N/102°29.01'E” [China], SMNG (Görlitz).

**Distribution**—Northern Asia: RC (NW).

**Identification**—**Keys, Descriptions**: Wu (2006).

*Hoplitis* subgenus *Exanthocopa* TKALCU

Palearctic species: 1

*oxygyga* (BENOIST, 1927)*Hoplitis (Exanthocopa)*

1927 *Osmia oxygyga* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 7: 169. Type mate-

rial: Holotype ♂, “Meknès” [Morocco], MNHN (Paris). Type species of *Exanthocopa* TKALCU.—Combination *Anthocopa oxygyga* (BENOIST) in Zanden (1985: 51).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—Keys, Descriptions: Tkalcu (1993a: 55); Zanden (1985: 51). **Note:** Female unknown.

*Hoplitis* subgenus *Formicapis* SLADEN

Palearctic species: 3

*latifemoralis* (WU, 1985)

*Hoplitis* (*Formicapis*)

1985 *Formicapis latifemoralis* WU, Biology of the Tianshan Tumor Region, p. 147 [not seen]. Type material: “Tianshan Tumor Region, Xingjiang” [China], IZCAS (Beijing).

**Distribution**—Northern Asia: RC(NW).

**Identification**—Keys, Descriptions: Wu (2006).

*maritima* (ROMANKOVA, 1985)

*Hoplitis* (*Formicapis*)

1985 *Formicapis robusta* *maritima* ROMANKOVA, Vestnik Zoologii (Kiev), 6: 66. Type material: Syntypes ♂(♂), ♀(♀), “Primorski territory” [Russia].—Combination *Formicapis* *maritima* ROMANKOVA in Romankova (1994: 124). Combination *Hoplitis* (*Formicapis*) *maritima* (ROMANKOVA) in Tkalcu (1995: 121).

**Distribution**—Europe: UA. Northern Asia: RUS(FS).

**Identification**—Keys, Descriptions: Romankova (1995).

*robusta* (NYLANDER, 1848)

*Hoplitis* (*Formicapis*)

1848 *Heriades robusta* NYLANDER, Notiser ur Sällskapet pro Fauna et Flora Fennica Förhandlingar, vol. 1, p. 270. Type material: Lectotype ♀, by designation of Tkalcu (1995: 121), “Helsingfors” [Finland], FMNH (Helsinki); paralectotype ♂. Type species of *Formicapis* SLADEN.—Combination *Chelostoma robustum* (NYLANDER) in Smith (1854: 220). Combination *Osmia robusta* (NYLANDER) in Schletterer (1889: 988). Combination *Formicapis robusta* (NYLANDER) in Romankova (1985a: 66).

1861 *Osmia Rhinoceros* GIRAUD, Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien, 11: 464. Type material: Syntypes ♀♀, “Gastein” [Austria], Giraud Collection.—Combination *Osmia* (*Acanthosmia*) *rhinoceros* GIRAUD in Schmiedeknecht (1885: 21 [1887]).—Synonymy in Schletterer (1889: 688).

1869 *Heriades trinacria* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 6: 41. Type material: ♂(♂), “im Gdowschen Kreise” [Russia], ZIN (St. Petersburg).—Synonymy in Popov (1946: 107).

1916 *Formicapis clypeata* SLADEN, The Canadian Entomologist, 48: 271. Type material: Syntypes ♂(♂), ♀(♀), “Aweme, Manitoba and Waterhole, Alberta” [Canada].—Synonymy in Peters (1970b: 194).

**Distribution**—Europe: A, CH, F, FIN, LV, RUS. Northern Asia: MGL, RC, RUS(FS). **Extralimital**: Nearctic (Canada, USA).

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Friese (1911b); Medvedeva (1978); Romankova (1985a, 1995); Scheuchl (1996); Schmiedeknecht (1885–1886); Wu (2006).

*Hoplitis* subgenus *Hoplitis* KLUG

Palearctic species: 50

*adunca* (PANZER, 1798)*Hoplitis* (*Hoplitis*)

- 1798 *Apis adunca* PANZER, Faunae Insectorum Germanicae, 56: 5. Type material: ♂(♂), [Germany]. Type species of *Ctenosmia* THOMSON and *Hoplitis* KLUG.—Combination *Osmia* (*Ctenosmia*) *adunca* (PANZER) in Schmiedeknecht (1885: 21 [887]). Combination *Osmia* (*Hoplitis*) *adunca* (PANZER) in Warncke (1992a: 116).
- 1841 *Osmia Spinolae* LEPELETIER, Histoire Naturelle des Insectes, Hyménoptères, vol. 2, p. 328 [not seen]. Type material: Lectotype ♀, by designation of Tkalcu (1975a: 176), “toute la France” [France], MNHN (Paris).—Synonymy in Tkalcu (1975a: 176).
- 1910 *Osmia aduncooides* STRAND, Entomologische Zeitschrift (Frankfurt), 24: 216. Type material: Lectotype ♂, by designation by Griswold (Zanden, 1989: 73), “Algier, Constantine” [Algeria], ZMHB (Berlin).—Synonymy with *Hoplitis adunca contraria* TKALCU in Zanden (1989: 73).
- 1974 *Hoplitis* (*Hoplitis*) *adunca contraria* TKALCU, Beiträge zur Entomologie (Berlin), 24: 329. Type material: Holotype ♀, “Villabáñez Valladolid” [Spain], Asensio Collection (Valladolid); paratypes ♂♂, ♀♀.—Synonymy in Warncke (1992a: 116).

**Distribution**—**Europe**: A, AL, B, BG, CH, CZ, D, DK, E, F, F(Co), FL, GR, H, HR, I, I(Sa), I(Si), L, LT, LV, NL, P, PL, RUS, SK, SCG, SLO, UA; **Caucasus**. **Northern Africa**: DZ, LAR, MA, TN. **Northern Asia**: RUS(FS), TM. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Morice (1901); Radoszkowski (1887a: 287–288); Romankova (1995); Scheuchl (1996); Schmiedeknecht (1885–1886); Warncke (1992a); Zanden (1983: 131).

*albopilosa* WU, 1987*Hoplitis* (*Hoplitis*)

- 1987 *Hoplitis* (*Hoplitis*) *albopilosa* WU, Acta Entomologica Sinica (Beijing), 30: 445, 449. Type material: Holotype ♀, “Xizang, Gongbujiangda” [China], IZCAS (Beijing).

**Distribution**—**Northern Asia**: RC(WP).

**Identification**—**Keys, Descriptions**: Wu (2006). **Note**: Male unknown.

*anthocopoides* (SCHENCK, 1853)*Hoplitis* (*Hoplitis*)

- 1853 *Osmia anthocopoides* SCHENCK, Jahrbücher des Vereins für Naturkunde im Herzogthum Nassau, 9: 181. Type material: Lectotype ♀, by designation of Tkalcu (1975a: 177), “Herzogthum Nassau” [Germany], SMFD (Frankfurt); paralectotype ♂.—Combination *Osmia* (*Hoplitis*) *anthocopoides* SCHENCK in Warncke (1992a: 113).
- 1869 *Osmia caementaria* GERSTAECKER, Entomologische Zeitung (Stettin), 30: 339. Type material: Lectotype ♂, by designation of Tkalcu (1975a: 177), “Mark Brandenburg Falkenberg” [Germany], ZMHB (Berlin); paralectotype ♀.—Combination *Osmia* (*Ctenosmia*) *caementaria* GERSTAECKER in Schmiedeknecht (1885: 21 [887]).—Synonymy in Tkalcu (1975a: 177).
- 1879 *Osmia hybrida* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 200. Type material: Syntypes ♂(♂), ♀(♀), “Marseille” [France], MNHN (Paris).—Combination *Osmia* (*Ctenosmia*) *hybrida* PÉREZ in Schmiedeknecht (1885: 21 [887]).—Synonymy in Warncke (1992a: 113).
- 1901 *Osmia romana* MORICE, Transactions of the Entomological Society of London, 1901: 176. Type material: Holo-

type ♂, “Roma” [Italy], OUMNH (Oxford).—Synonymy in Tkalcu (1977b: 228).

- 1969 *Fertonella algerica* BENOIST, Bulletin de la Société Entomologique de France, 74: 244. Type material: Holotype ♀, “Dellys” [Algeria], MNHN (Paris).—Synonymy in Warncke (1992a: 113).

**Distribution**—Europe: A, ARM, B, BG, CH, CZ, D, DK, E, F, H, HR, I, I(Si), L, LT, LV, MK, NL, P, PL, RUS, SK, SLO. **Northern Africa**: DZ, E(Ca), MA, TN. **Extralimital**: Nearctic (Canada, USA) [Introduced].

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931, as *Osmia spinolae*); Ducke (1900, as *Osmia spinolae*); Eickwort (1970: 190, 192); Medvedeva (1978); Móczár (1958); Morice (1901); Scheuchl (1996); Schmiedeknecht (1885–1886); Warncke (1992a).

– subspecies *anthocopoides* (SCHENCK, 1853)

- 1853 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: A, ARM, B, BG, CH, CZ, D, DK, E, F, H, HR, I, I(Si), L, LV, MK, NL, P, PL, RUS, SK, SLO. **Northern Africa**: DZ, MA, TN. **Extralimital**: Nearctic (Canada, USA) [Introduced].

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *perambigua* (PETERS, 1975)

- 1975 *Osmia anthocopoides perambigua* PETERS, Senckenbergiana Biologica (Frankfurt), 56: 51. Type material: Holotype ♂, “Tenerife: La Cuesta” [Spain: Canary Islands], RMNH (Leiden); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: E(Ca).

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*benoisti* (ALFKEN, 1935)

*Hoplitis* (*Hoplitis*)

- 1879 *Osmia Morawitzi* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 199. NOMEN PRAEOCCUPATUM [not *Osmia morawitzi* GERSTAECKER, 1869]. Type material: Syntypes ♂(♂), ♀(♀), “Marseille, Montpellier” [France], MNHN (Paris).—Combination *Osmia* (*Ctenosmia*) *morawitzi* PÉREZ in Schmiedeknecht (1885: 21 [887]).

- 1935 *Osmia benoisti* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 189. NOMEN NOVUM with same type specimen for preoccupied *Osmia morawitzi* PÉREZ, 1879 [not *Osmia morawitzi* GERSTAECKER, 1869].—Combination *Osmia* (*Hoplitis*) *benoisti* ALFKEN in Warncke (1992a: 115).

- 1969 *Osmia grinincensis* BENOIST, Bulletin de la Société Entomologique de France, 74: 244. Type material: Holotype ♀, “Grasse” [France], MNHN (Paris).—Synonymy in Zanden (1985: 69).

**Distribution**—Europe: E, E, F(Co), HR, I, I(Sa), I(Si), P. **Northern Africa**: DZ, MA, TN.

**Identification**—**Keys, Descriptions**: Benoist (1931); Móczár (1958); Morice (1901); Stanek (1969a: 25–26); Warncke (1992a); Zanden (1965: 65).

– subspecies *benoisti* (ALFKEN, 1935)

1935 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** E, E, F(Co), HR, I, I(Sa), I(Si), P.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *gregaria* (WARNCKE, 1992)

1992 *Osmia (Hoplitis) benoisti gregaria* WARNCKE, Linzer Biologische Beiträge, 24: 116. **Type material:** Holotype ♂, “30 km N Ksar-es-Souk” [Morocco], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution—Northern Africa:** DZ, MA, TN.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*bihamata* (COSTA, 1885)

*Hoplitis (Hoplitis)*

1885 *Osmia (Ctenosmia) bihamata* COSTA, Bullettino della Società Entomologica Italiana, 17: 247. **Type material:** Holotype ♂, “Sardegna” [Italy: Sardinia].—Combination *Osmia (Hoplitis) bihamata* COSTA in Warncke (1992a: 108).

1901 *Osmia corsica* FERTON, Bulletin de la Société Entomologique de France, 1901: 61. **Type material:** Syntypes ♂(♂), ♀(♀), “Corsica” [France: Corsica], MNHN (Paris).—Synonymy in Alfken (1937: 107).

**Distribution—Europe:** F(Co), I(Sa). **Northern Africa:** MA?.

**Identification—Keys, Descriptions:** Benoist (1931); Ducke (1900); Stanek (1969a: 27–28); Warncke (1992a); Zanden (1983: 131).

*bilobulata* WU, 1993

*Hoplitis (Hoplitis)*

1993 *Hoplitis bilobulata* WU, Insects of the Hengduan Mountains Region, vol. 2, p. 1394, p. 1419. **Type material:** Holotype ♂, “Yunnan: Dequnadun, 2700 m” [China], IZCAS (Beijing); paratypes ♂♂, ♀.

**Distribution—Northern Asia:** RC(SW).

**Identification—Keys, Descriptions:** Wu (2006).

*bombiformis* ZANDEN, 1991

*Hoplitis (Hoplitis)*

1991 *Hoplitis (Hoplitis) bombiformis* ZANDEN, Reichenbachia (Dresden), 28: 167. **Type material:** Holotype ♀, “20 km E. Yüksekova, 2200 m” [Turkey], RMNH (Leiden); paratypes ♀♀.

**Distribution—Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*brevicornis* (MORAWITZ, 1880)*Hoplitis (Hoplitis)*

1880 *Osmia brevicornis* MORAWITZ, Bulletin de l'Académie Impériale des Sciences de St.-Petersbourg, 26: 386. Type material: ♂(♂), “bei Krasnowodsk” [Turkmenistan].

**Distribution**—Northern Asia: TM.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*brevispora* (WARNCKE, 1992)*Hoplitis (Hoplitis)*

1992 *Osmia (Hoplitis) brevispora* WARNCKE, Linzer Biologische Beiträge, 24: 110. Type material: Holotype ♂, “Irherm” [Morocco], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*brunnescens* (BENOIST, 1950)*Hoplitis (Hoplitis)*

1950 *Osmia brunnescens* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 30: 188. Type material: Holotype ♀, “Marrakech” [Morocco], MZLS (Lausanne).—Combination *Osmia (Hoplitis) brunnescens* BENOIST in Warncke (1992a: 111).

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions**: Warncke (1992a); Zanden (1985: 68).

*carinata* (STANEK, 1969)*Hoplitis (Hoplitis)*

1969 *Osmia carinata* STANEK, Nachrichten des Naturwissenschaftlichen Museums der Stadt Aschaffenburg, 78: 3. Type material: Holotype ♀, “Beysehir-See, 1121 m” [Turkey], SMFD (Frankfurt).

**Distribution**— Europe: ARM, BG, GR, MK. **Southwestern Asia**: JOR, TR, SYR, TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*carinotarsa* WU, 1987*Hoplitis (Hoplitis)*

1987 *Hoplitis (Hoplitis) carinotarsa* WU, Acta Entomologica Sinica (Beijing), 30: 446, 449. Type material: Holotype ♀, “Sichuan, Emei” [China], IZCAS (Beijing); paratypes ♂, ♀♀.

**Distribution**—Northern Asia: RC(SW).

**Identification**—**Keys, Descriptions**: Wu (2006).

*ctenophora* (BENOIST, 1934)*Hoplitis (Hoplitis)*

1934 *Osmia ctenophora* BENOIST, Bulletin de la Société Entomologique de France, 39: 159. Type material: Holotype ♀, “Mecheria” [Algeria], MNHN (Paris).—Combination *Osmia (Hoplitis) ctenophora* BENOIST in Warncke

(1992a: 111).

**Distribution**—Northern Africa: DZ, MA, TN.

**Identification**—**Keys, Descriptions:** Warncke (1992a); Zanden (1985: 66).

*erzurumensis* TKALCU, 2000

*Hoplitis (Hoplitis)*

2000 *Hoplitis (Hoplitis) erzurumensis* TKALCU, Acta Societatis Zoologicae Bohemoslovaca (Praha), 64: 323. Type material: Holotype ♂, “Erzurum” [Turkey]; Tkalcu Collection (Praha); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*fabrei* ZANDEN, 1987

*Hoplitis (Hoplitis)*

1987 *Hoplitis (Hoplitis) fabrei* ZANDEN, Reichenbachia (Dresden), 25: 74. Type material: Holotype ♂, “Tebloni, Korfu” [Greece], RMNH (Leiden) ; paratypes ♂♂, ♀♀.

**Distribution**—Europe: GR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*fertoni* (PÉREZ, 1890)

*Hoplitis (Hoplitis)*

1890 *Osmia Fertoni* PÉREZ, in: Ferton, Actes de la Société Linnéenne de Bordeaux, 44: 206. Type material: Lectotype ♀, by designation of Tkalcu (1975a: 178), “Alger” [Algeria], MNHN (Paris); paralectotype ♂.—Combination *Osmia (Hoplitis) fertoni* PÉREZ in Warncke (1992a: 113).

1895 *Osmia albispina* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 16. Type material: Lectotype ♀, by designation of Tkalcu (1975a: 178), “Kairuan” [Algeria], MNHN (Paris); paralectotype ♀.—Synonymy in Warncke (1992a: 114) and in Zanden (1992b: 66).

1902 *Osmia Mecheriana* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 68. Type material: Lectotype ♀, by designation of Warncke (1992a: 113), “Méchéria (Sud-Oranais)” [Algeria], MNHN (Paris).—Synonymy in Warncke (1992a: 113).

**Distribution**—Europe: E, I(Si). Northern Africa: DZ, ET, MA, TN. Southwestern Asia: IL.

**Identification**—**Keys, Descriptions:** Ducke (1900); Ferton (1890: 206); Morice (1901); Peters (1975: 53–55); Warncke (1992a).

*flabellifera* (MORICE, 1901)

*Hoplitis (Hoplitis)*

1901 *Osmia flabellifera* MORICE, Transactions of the Entomological Society of London, 1901: 177. Type material: Lectotype ♂, by designation of Zanden (1995: 428), “Bethlehem” [Palestine], OUMNH (Oxford).

1935 *Osmia conjuncta* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 189. NOMEN PRAEOCCUPATUM [not *Osmia conjuncta* CRESSON, 1864]. Type material: Lectotype ♀, by designation of Zanden (1995: 428), “Nablus” [Palestine], ZMHB (Berlin).

1935 *Osmia stichi* (ALFKEN), Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 315. NOMEN NOVUM with same type specimen for preoccupied *Osmia conjuncta* ALFKEN, 1935 [not *Osmia*



*conjuncta* CRESSON, 1864].

**Distribution**— Europe: ARM. Southwestern Asia: IL, JOR, SYR, TR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*fortispina* (PÉREZ, 1895)

*Hoplitis* (*Hoplitis*)

- 1895 *Osmia fortispina* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 15 [redescribed in Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 66]. **Type material:** Holotype ♀, “Algérie” [Algeria], MNHN (Paris).— Combination *Osmia* (*Hoplitis*) *fortispina* PÉREZ in Warncke (1992a: 114).

**Distribution**—Northern Africa: DZ.

**Identification**—**Keys, Descriptions:** Warncke (1992a). **Note:** Male unknown.

*hoggara* (WARNCKE, 1992)

*Hoplitis* (*Hoplitis*)

- 1992 *Osmia* (*Hoplitis*) *hoggara* WARNCKE, Linzer Biologische Beiträge, 24: 109. **Type material:** Holotype ♂, “Guelta bei Ilamane in 1900 m/Hoggar” [Algeria], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: DZ, MA.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*holmboei* (MAVROMOUSTAKIS, 1948)

*Hoplitis* (*Hoplitis*)

- 1948 *Osmia holmboei* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 1: 578. **Type material:** Holotype ♀, “Yermasoyia River” [Cyprus], DAAN (Nicosia); paratypes ♂♂, ♀♀.

**Distribution**— Europe: GR. Southwestern Asia: CY.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*homalocera* ZANDEN, 1991

*Hoplitis* (*Hoplitis*)

- 1991 *Hoplitis* (*Hoplitis*) *homalocera* ZANDEN, Linzer Biologische Beiträge, 23: 348. **Type material:** Holotype ♂, “Jericho” [Palestine], DAAN (Nicosia); paratypes ♂♂, ♀.

**Distribution**—Southwestern Asia: IL, JOR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*improceros* ZANDEN, 1998

*Hoplitis* (*Hoplitis*)

- 1998 *Hoplitis* (*Hoplitis*) *improceros* ZANDEN, Linzer Biologische Beiträge, 30: 525. **Type material:** Holotype ♂, “10 km SE Adad, Dead Sea” [Israel], RMNH (Leiden); paratype ♂.

**Distribution**—Southwestern Asia: IL.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Female unknown.

*insularis* (SCHMIEDEKNECHT, 1886)

*Hoplitis* (*Hoplitis*)

- 1886 *Osmia* (*Ctenosmia*) *insularis* SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 158 [1024]. **Type material:** Lectotype ♀, by designation of Peters (1975: 53), “Mallorca” [Spain: Balearic Islands], ZMHB (Berlin); paralectotypes ♂, ♀♀.—Combination *Osmia* (*Hoplitis*) *insularis* SCHMIEDEKNECHT in Warncke (1992a: 112).
- 1895 *Osmia* *Vaulogeri* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 16. **Type material:** Lectotype ♂, by designation of Zanden (1991b: 352), “Teniet” [Algeria], MNHN (Paris).—Synonymy in Zanden (1991b: 352).

**Distribution—Europe:** E, E(Ba), I(Sa), I(Si). **Northern Africa:** DZ, MA, TN.

**Identification—Keys, Descriptions:** Benoist (1931); Duce (1898: 261–262, 1900); Morice (1901); Peters (1975: 53, 55); Schmiedeknecht (1885–1886); Warncke (1992a); Zanden (1991b: 358–359).

*jheringi* (DUCKE, 1898)

*Hoplitis* (*Hoplitis*)

- 1898 *Osmia* *jheringii* DUCKE, Entomologische Nachrichten (Berlin), 24: 260. **Type material:** Syntypes ♂♂, ♀♀, “Triester Karst” [Italy].—Combination *Osmia* (*Hoplitis*) *jheringi* DUCKE in Warncke (1992a: 107).

**Distribution—Europe:** I, HR, MK, SLO. **Northern Africa:** DZ, ET, MA, TN.

**Identification—Keys, Descriptions:** Duce (1900); Morice (1901); Peters (1975: 53, 55); Stanek (1969a: 29–30); Warncke (1992a).

– subspecies *hirundo* (WARNCKE, 1992)

- 1992 *Osmia* (*Hoplitis*) *jheringii* *hirundo* WARNCKE, Linzer Biologische Beiträge, 24: 107. **Type material:** Holotype ♂, “50 km SO Taroudannt, Strasse nach Irherm” [Morocco], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution—Northern Africa:** MA.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *jheringi* (DUCKE, 1898)

- 1898 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** I, HR, MK, SLO.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *urbica* (WARNCKE, 1992)

- 1992 *Osmia* (*Hoplitis*) *jheringii* *urbica* WARNCKE, Linzer Biologische Beiträge, 24: 108. **Type material:** Holotype ♂, “30 km SO Zaghouan” [Tunisia], OLML (Linz); paratypes ♂♂.

**Distribution—Northern Africa:** DZ?, ET?, TN.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Female unknown.

*lapidaria* (MORAWITZ, 1877)*Hoplitis (Hoplitis)*

- 1877 *Osmia lapidaria* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 14: 40. **Type material:** Lectotype ♀, by designation of Warncke (1991e: 315), “Eriwan” [Armenia], ZIN (St. Petersburg); paralectotypes ♀♀.—Combination *Osmia (Ctenosmia) lapidaria* MORAWITZ in Schmiedeknecht (1885: 21 [887]). Combination *Osmia (Annosmia) lapidaria* MORAWITZ in Warncke (1991e: 315).

**Distribution—Europe:** ARM. **Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** Tkalcu (2000a: 329); Schmiedeknecht (1885–1886); Warncke (1991e). **Note:** Male unknown.

*latuspilosa* ZANDEN, 1992*Hoplitis (Hoplitis)*

- 1992 *Hoplitis (Hoplitis) latuspilosa* ZANDEN, Linzer Biologische Beiträge, 24: 69. **Type material:** Holotype ♂, “M’rirt” [Morocco], MNHN (Paris); paratype ♂.

**Distribution—Northern Africa:** MA.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Female unknown.

*lepeletieri* (PÉREZ, 1879)*Hoplitis (Hoplitis)*

- 1879 *Osmia Lepeletieri* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 198. **Type material:** ♀(♀), [France], MNHN (Paris).—Combination *Osmia (Ctenosmia) lepeletieri* PÉREZ in Schmiedeknecht (1885: 21 [887]).

**Distribution—Europe:** A, CH, D, E, E, H, I, RUS, SLO.

**Identification—Keys, Descriptions:** Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Morice (1901); Scheuchl (1996); Schmiedeknecht (1885–1886).

*libanensis* (MORICE, 1901)*Hoplitis (Hoplitis)*

- 1901 *Osmia libanensis* MORICE, Transactions of the Entomological Society of London, 1901: 177. **Type material:** Syntypes ♂(♂), ♀(♀), “Syria (Brumana)” [Lebanon], OUMNH (Oxford).

**Distribution—Southwestern Asia:** IL, RL, SYR, TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*linguaria* (MORAWITZ, 1876)*Hoplitis (Hoplitis)*

- 1876 *Osmia linguaria* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 12: 39. **Type material:** Holotype ♀, “um Azchur” [Caucasus], ZIN (St. Petersburg).—Combination *Osmia (Ctenosmia) linguaria* MORAWITZ in Schmiedeknecht (1885: 21 [887]).

**Distribution—Europe:** Caucasus. **Northern Asia.** **Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** Ducke (1900); Schmiedeknecht (1885–1886); Tkalcu (1992: 218–219); Zanden (1987: 80–82).

*loti* (MORAWITZ, 1867)*Hoplitis (Hoplitis)*

- 1867 *Osmia Loti* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 5: 66. Type material: Syntypes ♂(♂), ♀(♀), “St. Moritz” [Switzerland].
- 1869 *Osmia morawitzi* GERSTAECKER, Entomologische Zeitung (Stettin), 30: 344. Type material: ♂(♂).—Combination *Osmia (Ctenosmia) morawitzi* GERSTAECKER in Schmiedeknecht (1885: 21 [887]).—Synonymy in Schwarz (1996: 124).
- 1879 *Osmia difformis* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 202. Type material: Syntypes ♂♂, “Hautes et Basses-Pyrénées” [France], MNHN (Paris).—Combination *Osmia (Ctenosmia) difformis* PÉREZ in Schmiedeknecht (1885: 21 [887]).—Synonymy in Blüthgen (1920: 33).

**Distribution**—Europe: A, CH, CZ, D, E, F, FL, H, HR, I, RUS, SLO.**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Blüthgen (1920: 31); Duce (1900); Medvedeva (1978); Móczár (1958); Morice (1901); Scheuchl (1996); Schmiedeknecht (1885–1886).*manicata* (MORICE, 1901)*Hoplitis (Hoplitis)*

- 1901 *Osmia manicata* MORICE, Transactions of the Entomological Society of London, 1901: 176. Type material: Syntypes ♂♂, “Zante” [Greece], OUMNH (Oxford).

**Distribution**—Europe: A, AL, CZ, F(Co), GR, GR(Cr), HR, I, MK, SK. **Northern Africa**: DZ?. **Southwestern Asia**: TR.**Identification**—**Keys, Descriptions**: Banaszak and Romasenko (2001); Scheuchl (1996); Zanden (1984c: 180–181).*marchali* (PÉREZ, 1902)*Hoplitis (Hoplitis)*

- 1902 *Osmia Marchali* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 67. Type material: Lectotype ♂, by designation of Warncke (1992a: 108), “Batna, Bougie, Hammam-Meskoutin” [Algeria], MNHN (Paris).—Combination *Osmia (Hoplitis) marchali* PÉREZ in Warncke (1992a: 108).

**Distribution**—Europe: E, F(Co), I(Si), P. **Northern Africa**: DZ, MA, TN.**Identification**—**Keys, Descriptions**: Warncke (1992a).*monstrabilis* TKALCU, 2000*Hoplitis (Hoplitis)*

- 2000 *Hoplitis (Hoplitis) monstrabilis* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 64: 323. Type material: Holotype ♂, “Erzurum” [Turkey], EMET (Erzurum); paratypes ♀♀.

**Distribution**—**Southwestern Asia**: TR.**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.*mucida* (DOURS, 1873)*Hoplitis (Hoplitis)*

- 1873 *Osmia mucida* DOURS, Revue et Magasin de Zoologie Pure et Appliqué, ser. 3, 1: 293. Type material: Syntypes ♂(♂), ♀(♀), “Algérie” [Algeria], Dours Collection, presumed destroyed (Zanden 1990: 52).—Combination

*Osmia (Ctenosmia) mucida* DOURS in Schmiedeknecht (1885: 21 [887]). Combination *Osmia (Hoplitis) mucida* DOURS in Warncke (1992a: 114).

- 1902 *Osmia Chobauti* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 66. Type material: Syntypes ♂(♂), ♀(♀), “Margueritte” [Algeria], MNHN (Paris).—Synonymy in Zanden (1990: 52).
- 1919 *Osmia taorminaensis* STRAND, Archiv für Naturgeschichte, 83: 63. Type material: Holotype ♀, “Taormina-Lentini” [Italy: Sicily], DEI (Müncheberg).—Synonymy in Zanden (1986: 67).
- 1929 *Osmia maroccana* BENOIST, Annales de la Société Entomologique de France, 98: 250. Type material: Holotype ♀, “Ras el Ma près d’Azrou” [Morocco], MNHN (Paris).—Synonymy with *Hoplitis chobauti* (PÉREZ) in Zanden (1985: 60).

**Distribution**—Europe: CH, E, F, I, I(Si). Northern Africa: DZ, MA, TN. Southwestern Asia: IL.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Benoist (1931); Mavromoustakis (1947: 359–360); Schmiedeknecht (1885–1886); Warncke (1992a).

– subspecies *mucida* (DOURS, 1873)

- 1873 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: I(Si). Northern Africa: DZ, MA, TN. Southwestern Asia: IL.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

– subspecies *stecki* (FREY-GESSNER, 1908)

- 1908 *Osmia mucida stecki* FREY-GESSNER, Mitteilungen der Schweizerischen Entomologischen Gesellschaft, 11: 283. Type material: Syntypes ♂(♂), ♀(♀), “Grono im Unter-Misox” [Switzerland], NMBE (Bern).—Synonymy with *Hoplitis mucida* (DOURS) in Zanden (1988b: 121). Combination *Osmia (Hoplitis) mucida stecki* FREY-GESSNER in WARNCKE (1992a: 115).

**Distribution**—Europe: CH, E, F, I.

**Identification**—Keys, Descriptions: Warncke (1992a).

*ochraceicornis* (FERTON, 1902)

*Hoplitis (Hoplitis)*

- 1902 *Osmia ochraceicornis* FERTON, Annales de la Société Entomologique de France, 71: 499. Type material: Syntypes ♂(♂), ♀(♀), “Saillagouse (Cerdagne: Pyrénées-Orientales)” [France], MNHN (Paris).—Combination *Osmia (Hoplitis) ochraceicornis* FERTON in Warncke (1992a: 109).
- 1969 *Fertonella seyrigi* BENOIST, Bulletin de la Société Entomologique de France, 74: 245. Type material: Holotype ♀, “Peñarroya” [Spain], MNHN (Paris).—Synonymy in Warncke (1992a: 109).

**Distribution**—Europe: AND, E, F, I, MK. Northern Africa: P(Ma).

**Identification**—Keys, Descriptions: Benoist (1931); Warncke (1992a).

*oreades* (BENOIST, 1934)*Hoplitis (Hoplitis)*

- 1934 *Osmia oreades* BENOIST, Bulletin de la Société Entomologique de France, 39: 107. Type material: Holotype ♀, “Tizi n’Test, 2000–2450m” [Morocco], MNHN (Paris).—Combination *Osmia (Hoplitis) oreades* BENOIST in Warncke (1992a: 110).
- 1934 *Osmia pectinifera* BENOIST, Bulletin de la Société Entomologique de France, 39: 159. Type material: Holotype ♀, “Asni” [Morocco], MNHN (Paris).—Synonymy in Warncke (1992a: 110).

**Distribution**—Northern Africa: MA, TN.**Identification**—**Keys, Descriptions**: Warncke (1992a); Zanden (1985: 65, 1989: 74).*pallicornis* (FRIESE, 1895)*Hoplitis (Hoplitis)*

- 1895 *Osmia pallicornis* FRIESE, Entomologische Nachrichten (Berlin), 21: 131. Type material: Lectotype ♂, by designation of Zanden (1987: 74), “Fiume, Zengg und Pola” [Croatia], ZMHB (Berlin).

**Distribution**—Europe: AL, GR, GR(Cr), HR, I, MK, SLO. **Southwestern Asia**: IL, JOR, TR.**Identification**—**Keys, Descriptions**: Duce (1900, as *Osmia difformis*); Morice (1901); Zanden (1987: 74–75).*pici* (FRIESE, 1899)*Hoplitis (Hoplitis)*

- 1899 *Osmia pici* FRIESE, Entomologische Nachrichten (Berlin), 25: 332. Type material: Lectotype ♂, by designation of Zanden (1987: 80), “Broussa” [Syria], ZMHB (Berlin).—Combination *Hoplitis (Alcidamea) pici* (FRIESE) in Zanden (1987: 80).

**Distribution**—Europe: GR, GR(Cr), HR. **Southwestern Asia**: SYR, TR.**Identification**—**Keys, Descriptions**: Morice (1901); Müller (2006: 497); Zanden (1987: 80);*quettensis* TKALCU, 2000*Hoplitis (Hoplitis)*

- 2000 *Hoplitis (Hoplitis) quettensis* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 64: 320. Type material: Holotype ♂, “Quetta” [Pakistan], BMNH (London); paratype ♂.

**Distribution**—Southwestern Asia: PAK.**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.*ravouxi* (PÉREZ, 1902)*Hoplitis (Hoplitis)*

- 1902 *Osmia Ravouxi* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 67. Type material: ♂(♂), “Etroussat (Allier) et Alpes maritimes” [France], MNHN (Paris).—Combination *Osmia (Hoplitis) ravouxi* PÉREZ in Warncke (1992a: 112).
- 1902 *Osmia rhinotropis* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 68. Type material: ♀(♀), “Catalogne” [Spain], MNHN (Paris).—Synonymy in Benoist, 1928d: 108).
- 1920 *Osmia brachyceros* BLÜTHGEN, Entomologische Zeitung (Stettin), 81: 33. Type material: Syntypes ♂♂, ♀♀, “Mühlhausen i. Thür.” [Germany].—Synonymy in Blüthgen (1929: 196).

- 1989 *Hoplitis (Hoplitis) ebmeri* ZANDEN, Entomologische Abhandlungen (Dresden), 53: 83. Type material: Holotype ♂, “Sierra Nevada, W. Velecta, 2850 m” [Spain], RMNH (Leiden); paratypes ♂, ♀♀.—Synonymy in Warncke (1992a: 112).

**Distribution**—Europe: A, B, CH, CZ, D, E, F, HR, I, I(Sa), L, NL, P, RO, RUS, SK, SLO.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Medvedeva (1978); Scheuchl (1996); Warncke (1992a).

*rufimana* (MORAWITZ, 1875)

*Hoplitis (Hoplitis)*

- 1875 *Osmia rufimana* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 92. Type material: ♂(♂), “In valle Sarafschan” [Tajikistan].

**Distribution**—Northern Asia: TJ.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*rufoantennalis* WU, 2004

*Hoplitis (Hoplitis)*

- 2004 *Hoplitis (Alcidemea) rufoantennalis* WU, Acta Zootaxonomica Sinica, 29: 535. Type material: Holotype ♂, “Kansu: Lanzhou (36.0°N, 103.7°E)” [China], IZCAS (Beijing).

**Distribution**—Northern Asia: RC(NO).

**Identification**—**Keys, Descriptions**: Wu (2006). **Note**: Female unknown.

*semilinguaria* TKALCU, 1992

*Hoplitis (Hoplitis)*

- 1992 *Hoplitis (Hoplitis) semilinguaria* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 56: 218. Type material: Holotype ♀, SW Iran, Pol-e-Tang, 60 km NW Andimeshk” [Iran], NMPC (Prague); paratypes ♀♀.

**Distribution**—Southwestern Asia: IR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*sichuanensis* WU, 1993

*Hoplitis (Hoplitis)*

- 1993 *Hoplitis sichuanensis* WU, Insects of the Hengduan Mountains Region, vol. 2, p. 1395, p. 1419. Type material: Holotype ♂, “Sichuan: Xiangcheng, 3000 m” [China], IZCAS (Beijing).

**Distribution**—Northern Asia: RC(SW).

**Identification**—**Keys, Descriptions**: Wu (2006). **Note**: Female unknown.

*strymonia* TKALCU, 1999

*Hoplitis (Hoplitis)*

- 1999 *Hoplitis (Hoplitis) strymonia* TKALCU, Bulletin de la Société Entomologique de Mulhouse, Janvier–Mars: 12. Type material: Holotype ♀, “Bulgarie mér.-occ. Sandanski” [Bulgaria], Tkalcu Collection (Praha); paratypes ♀♀.



**Distribution—Europe:** BG

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*submanicata* ZANDEN, 1984

*Hoplitis (Hoplitis)*

1984 *Hoplitis (Hoplitis) submanicata* ZANDEN, Reichenbachia (Dresden), 22: 180. Type material: Holotype ♂, “Trapani-Erice” [Italy: Sicily], RMNH (Leiden); paratypes ♂♂, ♀♀.

**Distribution—Europe:** I(Si). **Northern Africa:** MA.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*subulicornis* (MORAWITZ, 1877)

*Hoplitis (Hoplitis)*

1877 *Osmia subulicornis* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 14: 42. Type material: Syntypes ♂♂, “Nicolajewka” [Armenia], ZIN (St. Petersburg).—Combination *Osmia (Acanthosmia) subulicornis* MORAWITZ in Schmiedeknecht (1886: 139).

**Distribution—Europe:** ARM.

**Identification—Keys, Descriptions:** Duce (1900); Schmiedeknecht (1885–1886). **Note:** Female unknown.

*tenuiserrata* (BENOIST, 1950)

*Hoplitis (Hoplitis)*

1950 *Osmia tenuiserrata* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 30: 45. Type material: Holotype ♂, “Goulimine” [Morocco], MNHN (Paris).—Combination *Osmia (Hoplitis) tenuiserrata* BENOIST in Warncke (1992a: 111).

1950 *Osmia gibbifera* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 30: 46. Type material: Holotype ♀, “Goulimine” [Morocco], MNHN (Paris).—Synonymy in Zanden (1985: 68).

**Distribution—Northern Africa:** MA.

**Identification—Keys, Descriptions:** Warncke (1992a); Zanden (1985: 67–68).

*testaceozonata* (ALFKEN, 1935)

*Hoplitis (Hoplitis)*

1935 *Osmia testaceozonata* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 189. Type material: Syntypes ♂♂, ♀♀, “Nablus, Jericho” [Palestine], ZMHB (Berlin).

**Distribution—Southwestern Asia:** IL.

**Identification—Keys, Descriptions:** Zanden (1991b: 349).

*tibetensis* WU, 1987

*Hoplitis (Hoplitis)*

1987 *Hoplitis (Hoplitis) tibetensis* WU, Acta Entomologica Sinica (Beijing), 30: 447, 449. Type material: Holotype ♂, “Xizang, Linzhi, 3050 m” [China], IZCAS (Beijing); paratypes ♂♂.

**Distribution—Northern Asia:** RC(WP).

**Identification—Keys, Descriptions:** Wu (2006). **Note:** Female unknown.

*Hoplitis* subgenus *Jaxartinula* POPOV

Palearctic species: 2

*malyshevi* (POPOV, 1963)

*Hoplitis* (*Jaxartinula*)

1963 *Jaxartinula malyshevi* POPOV, Zoologicheskii Zhurnal (Moscow), 42: 867. Type material: Holotype ♂, “Taschkent” [Uzbekistan], ZIN (St. Petersburg); paratype ♀. Type species of *Jaxartinula* POPOV.

**Distribution—Northern Asia:** KZ, UZ.

**Identification—Keys, Descriptions:** Griswold and Michener (1998: 243–244); Tkalcu (1995: 120).

*significans* TKALCU, 1995

*Hoplitis* (*Jaxartinula*)

1995 *Hoplitis* (*Jaxartinula*) *significans* TKALCU, Entomologische Abhandlungen (Dresden), 57: 118. Type material: Holotype ♀, “NW-Mongolei: Uvs-Aimak, Charchiraa-uul, 30 km SW Ulaangom, Umgeb. Kurort, Steppe, 1340 m” [Mongolia], MLUH (Halle).

**Distribution—Northern Asia:** MGL.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*Hoplitis* subgenus *Kumobia* POPOV

Palearctic species: 4

*abbreviata* (MORAWITZ, 1875)

*Hoplitis* (*Kumobia*)

1875 *Osmia abbreviata* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 96. Type material: Holotype ♀, “Prope Syr-darjam semel lecta” [Turkestan].—Combination *Osmia* (*Osmia*) *abbreviata* MORAWITZ in Friese (1911b: 107). Combination *Kumobia abbreviata* (MORAWITZ) in Zanden (1988b: 123).

**Distribution—Northern Asia:** KS, KZ, MGL; Turkestan.

**Identification—Keys, Descriptions:** Duce (1900); Tkalcu (1995: 115–117). **Note:** Male unknown.

*ahrensi* (POPOV, 1962)

*Hoplitis* (*Kumobia*)

1962 *Kumobia ahrensi* POPOV, Trudy Zoologicheskzo Instituta Akademija Nauk SSSR (Leningrad [St. Petersburg]), 30: 307. Type material: Holotype ♀, “Orta-Kuyu in the Karakum Desert” [Turkmenistan], ZIN (St. Petersburg).

**Distribution—Northern Asia:** TM.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*farabensis* (POPOV, 1962)

*Hoplitis* (*Kumobia*)

1962 *Kumobia farabensis* POPOV, Trudy Zoologicheskzo Instituta Akademija Nauk SSSR (Leningrad [St. Petersburg]), 30: 306. Type material: Syntypes ♀♀, “Farab near Chardzhou”, “Uch-Aji in the Bairam-Alpine region” [Turkmenistan], ZIN (St. Petersburg).

**Distribution**—Northern Asia: TM.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*tenuicornis* (MORAWITZ, 1875)

*Hoplitis* (*Kumobia*)

- 1875 *Osmia tenuicornis* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 95. **Type material:** ♂(♂), “In deserto Kisilkum” [Turkestan]. **Type species** of *Kumobia* POPOV.—Combination *Osmia* (*Osmia*) *tenuicornis* MORAWITZ in Friese (1911b: 77). Combination *Kumobia tenuicornis* (MORAWITZ) in Popov (1962: 304).

**Distribution**—Northern Asia: Turkestan.

**Identification**—**Keys, Descriptions:** Popov (1962b: 304–306).

*Hoplitis* subgenus *Megahoplitis* TKALCU

Palearctic species: 1

*tigrina* (MORAWITZ, 1871)

*Hoplitis* (*Megahoplitis*)

- 1871 *Osmia tigrina* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 8: 206. **Type material:** ♂(♂), “Epirus” [Greece]. **Type species** of *Megahoplitis* TKALCU.—Combination *Osmia* (*Osmia*) *tigrina* MORAWITZ in Friese (1911b: 103). Combination *Hoplitis* (*Tridentosmia*) *tigrina* (MORAWITZ) in Zanden (1987: 82).
- 1873 *Osmia tricuspitata* SICHEL, in: Dours, Revue et Magasin de Zoologie Pure et Appliqué, ser. 3, 1: 293. **Type material:** Syntypes ♂♂, “Iles de l’Archipel grec” [Greece], Dours Collection, presumed destroyed (Zanden 1990: 52).—New synonymy based on the original description.
- 1934 *Osmia deserti* BENOIST, Bulletin de la Société Entomologique de France, 39: 106. **Type material:** Holotype ♀, “Sahara” [Sahara], MNHN (Paris).—Synonymy in Zanden (1991b: 352).

**Distribution**—Europe: GR. Northern Africa: DZ, MA; Sahara. Southwestern Asia: TR.

**Identification**—**Keys, Descriptions:** Ducke (1900); Schmiedeknecht (1885–1886); Tkalcu (1993a: 55); Zanden (1987: 82).

*Hoplitis* subgenus *Megalosmia* SCHMIEDEKNECHT

Palearctic species: 7

*dorni* TKALCU, 1995

*Hoplitis* (*Megalosmia*)

- 1995 *Hoplitis* (*Megalosmia*) *dorni* TKALCU, Entomologische Abhandlungen (Dresden), 57: 131. **Type material:** Holotype ♂, “Bajanchongor Aimak, O-/S-Ufer Orog-nuur, Halbwüste, 1300 m” [Mongolia], MLUH (Halle); paratype ♀.

**Distribution**—Northern Asia: MGL.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*fulva* (EVERSMANN, 1852)

*Hoplitis* (*Megalosmia*)

- 1852 *Osmia fulva* EVERSMANN, Bulletin de la Société Impériale des Naturalistes de Moscou, 25: 63. **Type material:**

♂(♂), “prov. Orenburg. australi, in prov. Saratov. et Astrachanensi et in terris transuralensibus” [Russia].—Combination *Osmia (Osmia) fulva* EVERS-MANN in Friese (1911b: 105). Combination *Osmia (Alcidamea) fulva* EVERS-MANN in Warncke (1991h: 722).

- 1872 *Osmia grandis* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 9: 54. Type material: Syntypes ♂(♂), ♀(♀), “Gubernio Saratov” [Russia], “in Asia minore (Amasia)” [Turkey]. Type species of *Megalosmia* SCHMIEDEKNECHT.—Combination *Osmia (Megalosmia) grandis* MORAWITZ in Schmiedeknecht (1885: 23 [889]).—Synonymy in Duce (1900: 202).

**Distribution**—Europe: ARM, AZ, H, RO, RUS(SR). **Northern Asia**: KZ, MGL, RC, RUS(FS). **Southwestern Asia**: JOR, SYR, TR.

**Identification**—**Keys, Descriptions**: Banaszak and Romasenko (2001); Duce (1900); Medvedeva (1978); Móczár (1958); Popov (1962a); Radoszkowski (1887a: 275–276); Romankova (1995); Schmiedeknecht (1885–1886); Tkalcu (1995: 134–136); Warncke (1991h).

*laboriosa* (SMITH, 1878)

*Hoplitis (Megalosmia)*

- 1878 *Osmia laboriosa* SMITH, Scientific Results of the Second Yarkand Mission, p. 3. Type material: Lectotype ♀, by designation of Zanden (1991b: 354), “the neighbourhood of Yarkand” [China], BMNH (London). Type species of *Calohoplitis* TKALCU.—Combination *Anthocopa (Anthocopa) laboriosa* (SMITH) in Zanden (1988b: 118). Combination *Osmia (Alcidamea) laboriosa* SMITH in Warncke (1991h: 722). Combination *Hoplitis (Calohoplitis) laboriosa* (SMITH) in Tkalcu (1995: 129).
- 1880 *Osmia maculata* MORAWITZ, Bulletin de l'Académie Impériale des Sciences de St.-Petersbourg, 26: 383. Type material: Lectotype ♂, by designation by Tkalcu (Zanden, 1991b: 354), “Ili-Thale bei Kuldsha (Mittel-Asien)” [Turkestan], ZIN (St. Petersburg).—Combination *Osmia (Osmia) maculata* MORAWITZ in Friese (1911b: 106).—Synonymy in Warncke (1991h: 722) and in Zanden (1991b: 354).
- 1899 *Osmia magrettii* DUCKE, Entomologische Nachrichten (Berlin), 25: 214. Type material: Lectotype ♀, by designation by Tkalcu (Zanden, 1991b: 355), “Mangyschlack” [Kazakhstan], NMW (Wien).—Combination *Osmia (Osmia) magrettii* DUCKE in Friese (1911b: 106).—Synonymy in Zanden (1988b: 118).

**Distribution**—Europe: RUS(SR). **Northern Asia**: KZ, MGL, RC(WP), RUS.

**Identification**—**Keys, Descriptions**: Duce (1900); Tkalcu (1995: 129–131); Zanden (1991b: 359).

*mongolica* WU, 1990

*Hoplitis (Megalosmia)*

- 1990 *Hoplitis mongolica* WU, Entomotaxonomia (Yangling), 12: 245, 251. Type material: Holotype ♂, “Inner Mongolia: Zhenglan B., Xilin Gol L.” [China], IZCAS (Beijing).

**Distribution**—**Northern Asia**: RC(NO).

**Identification**—**Keys, Descriptions**: Wu (2006). **Note**: Female unknown.

*popovi* WU, 2004

*Hoplitis (Megalosmia)*

- 2004 *Hoplitis (Megalosmia) popovi* WU, Acta Zootaxonomica Sinica, 29: 536. Type material: Holotype ♀, “Gansu: Zhangye (38.9°N, 100.4°E), 1700 m” [China], IZCAS (Beijing); paratypes ♂♂, ♀♀.

**Distribution**—**Northern Asia**: RC(NW).

**Identification**—**Keys, Descriptions**: Wu (2006).

*princeps* (MORAWITZ, 1872)*Hoplitis (Megalosmia)*

1872 *Osmia princeps* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 9: 57. Type material: Syntypes ♂(♂), ♀(♀), “Gub. Astrachan” [Russia].—Combination *Osmia (Osmia) princeps* MORAWITZ in Friese (1911b: 106).—Combination *Osmia (Alcidamea) princeps* MORAWITZ in Warncke (1991h: 723).

**Distribution**—Europe: H, RUS(SR), UA. **Northern Asia**: KZ, MGL, RC(NW), RC(WP), RUS(FS).

**Identification—Keys, Descriptions**: Banaszak and Romasenko (2001); Ducke (1900); Medvedeva (1978); Móczár (1958); Popov (1962a); Romankova (1995); Schmiedeknecht (1885–1886); Tkalcu (1995: 134–136); Wu (2006).

*pyrrhosoma* WU, 1990*Hoplitis (Megalosmia)*

1990 *Hoplitis (Megalosmia) pyrrhosoma* WU, Entomotaxonomia (Yangling), 12: 244, 250. Type material: Holotype ♀, “Inner Mongolia: Alxa Right B., Alxa L.” [China], IZCAS (Beijing).

**Distribution**—Northern Asia: RC(NO).

**Identification—Keys, Descriptions**: Wu (2006).

*Hoplitis* subgenus *Micreriades* MAVROMOUSTAKIS

Palearctic species: 9

*antalyae* TKALCU, 2000*Hoplitis (Micreriades)*

2000 *Hoplitis (Micreriades) antalyae* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 64: 312. Type material: Holotype ♂, “Antalya: Beldibi” [Turkey], RMNH (Leiden); paratype ♂.

**Distribution**—Southwestern Asia: TR.

**Identification—Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*haemi* TKALCU, 2000*Hoplitis (Micreriades)*

2000 *Hoplitis (Micreriades) haemi* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 64: 310. Type material: Holotype ♂, “Stara Planina (Sl. brjag)” [Bulgaria], Tkalcu Collection (Praha); paratypes ♂♂.

**Distribution**—Europe: BG, GR.

**Identification—Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*illyrica* (NOSKIEWICZ, 1926)*Hoplitis (Micreriades)*

1926 *Osmia illyrica* NOSKIEWICZ, Polskie Pismo Entomologiczne, 4: 234. Type material: Lectotype ♀, by designation of Tkalcu (1974b: 325), “Hercegnovi in Dalmatien” [Montenegro], UWCP (Wroclaw).—Combination *Heriades (Micreriades) illyricus* (NOSKIEWICZ) in Mavromoustakis (1958: 445).

**Distribution**—Europe: BG, GR, HR, I, I(Si), MK, SCG **Southwestern Asia**: TK.

**Identification—Keys, Descriptions**: Mavromoustakis (1955b: 333); Tkalcu (1974b: 326–327, 1977c: 89–93, 2000a: 313).

*lebanotica* (MAVROMOUSTAKIS, 1955)*Hoplitis (Micreriades)*

- 1955 *Chelostoma lebanoticum* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 8: 331. Type material: Holotype ♀, “Nahr el Kelb” [Lebanon], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Heriades (Micreriades) lebanoticus* (MAVROMOUSTAKIS) in Mavromoustakis (1958: 445).

**Distribution**—Southwestern Asia: RL, TR.**Identification**—Keys, Descriptions: Tkalcu (2000a: 313).*mazzuccoi* (SCHWARZ & GUSENLEITNER, 2005)*Hoplitis (Micreriades)*

- 2005 *Osmia (Micreriades) mazzuccoi* SCHWARZ & GUSENLEITNER, Entomofauna (Ansfelden), 26: 122. Type material: Holotype ♂, “Burgenland: Jois” [Austria], Schwarz Collection (Ansfelden); paratypes ♂♂, ♀♀.

**Distribution**—Europe: A, BG, H, SK. Southwestern Asia: TR.**Identification**—Keys, Descriptions: Stanek (1964, as *Osmia tenuispina*); Tkalcu (1977c: 89–93, as *Hoplitis tenuispina*); Tkalcu (2000a: 313, as *Hoplitis tenuispina*). **Misapplication**: *Osmia tenuispina* in Stanek (1964: 403) and *Hoplitis tenuispina* in Tkalcu (1977c: 89–93, 2000a: 313) is *Hoplitis mazzuccoi* (SCHWARZ & GUSENLEITNER), see Schwarz *et al.* (2005: 122–123).*parnesica* (MAVROMOUSTAKIS, 1958)*Hoplitis (Micreriades)*

- 1958 *Heriades (Micreriades) parnesica* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 13, 1: 445. Type material: Holotype ♀, “Mt. Parnes” [Greece], DAAN (Nicosia); paratypes ♂♂, ♀♀. Type species of *Micreriades* MAVROMOUSTAKIS.—Combination *Hoplitis (Alcidamea) parnesica* (MAVROMOUSTAKIS) in Michener (2000: 449).

**Distribution**—Europe: GR.**Identification**—Keys, Descriptions: Tkalcu (2000a: 313).*pisidiae* TKALCU, 2000*Hoplitis (Micreriades)*

- 2000 *Hoplitis (Micreriades) pisidiae* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 64: 312. Type material: Holotype ♂, “Egridir u. Umgeb.” [Turkey], RMNH (Leiden).

**Distribution**—Southwestern Asia: TR.**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.*pungens* (BENOIST, 1928)*Hoplitis (Micreriades)*

- 1928 *Osmia pungens* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 8: 214. Type material: Lectotype ♂, by designation of Tkalcu (1977c: 94), “Forêt des Zaers, aux environs de Aïn Sferguila. Grand Atlas, région du Tizi n’Test et du Djebel Imdress (2000 à 2450 m)” [Morocco], MNHN (Paris).—Combination *Hoplitis (Alcidamea) pungens* (BENOIST) in Michener (2000: 449).

**Distribution**—Northern Africa: MA, TN.

**Identification—Keys, Descriptions:** Tkalcu (1977c: 93–94). **Note:** Female unknown.

*tenuispina* (ALFKEN, 1936)

*Hoplitis* (*Micreriades*)

1936 *Osmia tenuispina* ALFKEN, Bollettino dell'Istituto di Entomologia della Università degli Studi di Bologna, 9: 107. Type material: Holotype ♂, “Bologna, Ronzano” [Italy], IEGG (Bologna); paratypes ♂♂.

**Distribution—Europe:** F, I; A, GR, H, MK, SK, Yugoslavia. **Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** Schwarz *et al.* (2005: 122–125). **Misapplication:** *Osmia tenuispina* in Stanek (1964: 403) and *Hoplitis tenuispina* in Tkalcu (1977c: 89–93, 2000a: 313) is *Hoplitis mazzucchi* (SCHWARZ & GUSENLEITNER), see Schwarz *et al.* (2005: 122–123). **Note:** Female unknown.

*Hoplitis* subgenus *Microhoplitis* TKALCU

Palearctic species: 2

*paralias* (MAVROMOUSTAKIS, 1954)

*Hoplitis* (*Microhoplitis*)

1954 *Osmia paralias* MAVROMOUSTAKIS, Bulletin of the Research Council of Israel, 4: 266. Type material: Holotype ♀, “Bat Yam” [Israel], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Stenosmia paralias* (MAVROMOUSTAKIS) in Zanden (1988b: 128), rejected by Warncke (1991b: 402).

**Distribution—Northern Africa:** MA, TN. **Southwestern Asia:** IL.

**Identification—Keys, Descriptions:** Zanden (1992c: 824).

*zandeni* (TEUNISSEN & VAN ACHTERBERG, 1992)

*Hoplitis* (*Microhoplitis*)

1992 *Osmia zandeni* TEUNISSEN & VAN ACHTERBERG, Zoologische Mededelingen (Leiden), 66: 313. Type material: Holotype ♂, “Puerto del Rosario, Fuerteventura” [Spain: Canary Islands], RMNH (Leiden); paratypes ♂♂, ♀♀.

1993 *Osmia* (*Microhoplitis*) *hohmanni* TKALCU, Veröffentlichungen des Übersee-Museum Bremen (Naturwissenschaften), 12: 812. Type material: Holotype ♂, “Fuerteventura Risco del Paso” [Spain: Canary Islands], La Roche Collection; paratypes ♂♂, ♀♀. Type species of *Microhoplitis* TKALCU.—Synonymy in Zanden (1995: 428).

**Distribution—Northern Africa:** E(Ca).

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*Hoplitis* subgenus *Monumetha* CRESSON

Palearctic species: 1

*tuberculata* (NYLANDER, 1848)

*Hoplitis* (*Monumetha*)

1848 *Osmia tuberculata* NYLANDER, Notiser ur Sällskapetets pro Fauna et Flora Fennica Förhandlingar, vol. 1, p. 263. Type material: Holotype ♀, “Ostrobottna” [Finland], FMNH (Helsinki).—Combination *Osmia* (*Liosmia*) *tuberculata* NYLANDER in Thomson (1872: 255). Combination *Osmia* (*Acanthosmia*) *tuberculata* NYLANDER in Schmiedeknecht (1885: 21 [887]). Combination *Osmia* (*Osmia*) *tuberculata* NYLANDER in Friese (1911b: 82). Combination *Hoplitis* (*Cyrtosmia*) *tuberculata* (NYLANDER) in Zanden (1988b: 120). Combination *Osmia* (*Alci-*



*damea*) *tuberculata* NYLANDER in Warncke (1991h: 718). Combination *Hoplitis* (*Andronicus*) *tuberculata* (NYLANDER) in Tkalcu (1995: 127). Combination *Hoplitis* (*Alcidamea*) *tuberculata* (NYLANDER) in Wu (2006: 100).

- 1852 *Osmia hamata* EVERS-MANN, Bulletin de la Société Impériale des Naturalistes de Moscou, 25: 64. Type material: ♂(♂), “in terris transuralensibus” [Russia: Sibiria].—Synonymy in Warncke (1991h: 718).
- 1852 *Chelostoma signatum* EVERS-MANN, Bulletin de la Société Impériale des Naturalistes de Moscou, 25: 73. Type material: ♂(♂), “in terris transuralensibus” [Russia: Sibiria], ZIN (St. Petersburg).—Combination *Heriades signatus* (EVERSMANN) in Dalla Torre (1896: 379).—Synonymy in Popov (1946: 107).
- 1924 *Osmia* (*Acanthosmia*) *macrodonta* COCKERELL, Annals and Magazine of Natural History (London), ser. 9, 13: 598. Type material: ♂(♂), “Kudia River” [Russia: Sibiria].—Synonymy in Warncke (1991h: 718).
- 1924 *Osmia* (*Acanthosmia*) *amaguensis* COCKERELL, Annals and Magazine of Natural History (London), ser. 9, 13: 599. Type material: ♂(♂), “Kudia River, Amagu” [Russia: Sibiria].—Combination *Hoplitis* (*Hoplitis*) *amaguensis* (COCKERELL) in Zanden (1988b: 121).—Synonymy in Warncke (1991h: 718).

**Distribution**—Europe: A, CH, D, F, FIN, FL, HR, I, LT, LV, PL, RUS(CR), S. Northern Asia: MGL, RC, RUS(FS), RUS(WS).

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Radoszkowski (1887a: 278–279); Romankova (1995); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1995: 127); Wu (2006).

– subspecies *cylindrica* (GIRAUD, 1857)

- 1857 *Osmia cylindrica* GIRAUD, Verhandlungen des Zoologisch-Botanischen Vereins in Wien, 7: 180. Type material: Syntypes ♀♀, “montagnes de Gastein” [Austria].—Synonymy with *Osmia* (*Alcidamea*) *tuberculata* NYLANDER in Warncke (1991h: 718).—Combination *Hoplitis* (*Cyrtosmia*) *tuberculata cylindrica* (GIRAUD) in Zanden (1988b: 120). Combination *Hoplitis cylindrica* (GIRAUD) in Romankova (1995: 535).

**Distribution**—Europe: A, CH, D, F, FL, HR, I.

**Identification**—Keys, Descriptions: Tkalcu (1977b: 229).

– subspecies *tuberculata* (NYLANDER, 1848)

- 1848 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: FIN, LT, LV, PL, RUS(CR), S. Northern Asia: MGL, RC, RUS(FS), RUS(WS).

**Identification**—Keys, Descriptions: Tkalcu (1977b: 229).

*Hoplitis* subgenus *Pentadentosmia* WARNCKE

Palearctic species: 23

*cadiza* (WARNCKE, 1991)

*Hoplitis* (*Pentadentosmia*)

- 1991 *Osmia* (*Pentadentosmia*) *cadiza* WARNCKE, Entomofauna (Ansfelden), 9: 20. Type material: Holotype ♀, “Jimena de la frontera NW/Cadiz” [Spain], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Europe: E. Northern Africa: MA, TN.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*enslini* (ALFKEN, 1935)

*Hoplitis (Pentadentoscopia)*

- 1935 *Osmia grandior* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 186. NOMEN PRAEOCCUPATUM [not *Osmia grandior* COCKERELL, 1897]. Type material: Syntypes ♀♀, “Wadi el Kelt, Jericho” [Palestine], ZMHB (Berlin).
- 1935 *Osmia enslini* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 315. NOMEN NOVUM with same type specimen for preoccupied *Osmia grandior* ALFKEN, 1935 [not *Osmia grandior* COCKERELL, 1897].—Combination *Osmia (Pentadentoscopia) enslini* ALFKEN in Warncke (1991a: 23).—Synonymy with *Hoplitis nitidula* (MORAWITZ) in Zanden (1988b: 122), rejected by Warncke (1991a: 23).

**Distribution—Southwestern Asia:** IL.

**Identification—Keys, Descriptions:** Warncke (1991a). **Note:** Male unknown.

*fascicularia* (RADOSZKOWSKI, 1886)

*Hoplitis (Pentadentoscopia)*

- 1886 *Osmia fascicularia* RADOSZKOWSKI, Horae Societatis Entomologicae Rossicae (St. Petersburg), 20: 13. Type material: ♂(♂), “montagnes Kokpet” [Turkmenistan], ZMHB (Berlin).—Combination *Osmia (Pentadentoscopia) fascicularia* RADOSZKOWSKI in Warncke (1991a: 24).

**Distribution—Northern Asia:** TM.

**Identification—Keys, Descriptions:** Warncke (1991a). **Note:** Female unknown.

*gallinula* (WARNCKE, 1991)

*Hoplitis (Pentadentoscopia)*

- 1991 *Osmia (Pentadentoscopia) gallinula* WARNCKE, Entomofauna (Ansfelden), 9: 19. Type material: Holotype ♂, “20 km N Ceylanpinar/Urfa, 500 m” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution—Southwestern Asia:** JOR, TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*goulemina* (WARNCKE, 1991)

*Hoplitis (Pentadentoscopia)*

- 1991 *Osmia (Pentadentoscopia) goulemina* WARNCKE, Entomofauna (Ansfelden), 12: 18. Type material: Holotype ♀, “10 km W Goulemine” [Morocco], OLML (Linz).

**Distribution—Northern Africa:** MA.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*helouanensis* (FRIESE, 1899)

*Hoplitis (Pentadentoscopia)*

- 1899 *Osmia helouanensis* FRIESE, Entomologische Nachrichten (Berlin), 25: 61. Type material: Syntypes ♂♂, ♀♀, “Aegypten” [Egypt], ZMHB (Berlin).—Combination *Hoplitis (Tridentoscopia) helouanensis* (FRIESE) in Zanden (1988b: 122). Combination *Osmia (Pentadentoscopia) helouanensis* FRIESE in Warncke (1991a: 17).

**Distribution**—Northern Africa: ET, MA; Sahara: TN. **Southwestern Asia**: IL, JOR.

**Identification**—**Keys, Descriptions**: Duce (1900); Warncke (1991a).

*jejuna* POPOV, 1952

*Hoplitis (Pentadentoscopia)*

1952 *Hoplitis (Tridentoscopia) jejuna* POPOV, Zoologicheskii Zhurnal (Moscow), 31: 186. **Type material**: Syntypes ♂(♂), ♀(♀), “Juma near Samarkand” [Uzbekistan], “Qurghonteppa”, “Mikoyanabad”, “Jilikul” [Tajikistan], ZIN (St. Petersburg).

**Distribution**—Northern Asia: TJ, UZ. **Southwestern Asia**: IR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *argentea* ZANDEN, 1998

1998 *Hoplitis (Pentadentoscopia) jejuna argentea* ZANDEN, Linzer Biologische Beiträge, 30: 524. **Type material**: Holotype ♀, “Haft Tapeh, 300 km N Abadan, Choca Lambil, Khuzestan” [Iran], RMNH (Leiden); paratypes ♀♀.

**Distribution**—Southwestern Asia: IR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

– subspecies *jejuna* POPOV, 1952

1952 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Northern Asia: TJ, UZ.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*karakalensis* (POPOV, 1936)

*Hoplitis (Pentadentoscopia)*

1936 *Osmia karakalensis* POPOV, Festschrift zum 60. Geburtstage von Professor Dr. Embrik Strand, vol. 1, p. 596. **Type material**: Holotype ♀, “Kara-Kala, Kopet-Dagh-Bergkette” [Turkmenistan], ZIN (St. Petersburg).—Combination *Anthocopa (Tridentoscopia) karakalensis* (POPOV) in Popov (1952b: 103). Combination *Hoplitis (Tridentoscopia) karakalensis* (POPOV) in Zanden (1988b: 122).

**Distribution**—Northern Asia: TM. **Southwestern Asia**: IR. **Extralimital**: Oriental (India).

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*laevifrons* (MORAWITZ, 1872)

*Hoplitis (Pentadentoscopia)*

1872 *Osmia laevifrons* MORAWITZ, Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien, 22: 360. **Type material**: Syntypes ♂(♂), ♀(♀), “Meran” [Italy], NMW (Wien).—Combination *Osmia (Tridentoscopia) laevifrons* MORAWITZ in Schmiedeknecht (1885: 22 [888]). Combination *Hoplitis (Tridentoscopia) laevifrons* (MORAWITZ) in Tkalcu (1974b: 330). Combination *Osmia (Pentadentoscopia) laevifrons* MORAWITZ in Warncke (1991a: 21).

**Distribution**—Europe: A, ARM, CZ, H, I, MK, RUS, SK, SCG, SLO; E. **Northern Africa**: MA. **Northern Asia**: Turkestan. **Southwest-**

ern Asia: PAK, TR. **Extralimital:** Oriental (India).

**Identification—Keys, Descriptions:** Ducke (1900); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Stanek (1969a: 33–36); Warncke (1991a).

*laeviscutum* (ALFKEN, 1935)

*Hoplitis (Pentadentoscopia)*

1935 *Osmia laeviscutum* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 185. **Type material:** Syntypes ♂♂, ♀♀, “Jericho” [Palestine], ZMHB (Berlin).—Combination *Hoplitis (Tridentoscopia) laeviscutum* (ALFKEN) in Zanden (1988b: 122). Combination *Osmia (Pentadentoscopia) laeviscutum* ALFKEN in Warncke (1991a: 23).

**Distribution—Northern Africa:** ~~DZ~~. **Northern Asia:** TJ. **Southwestern Asia:** IL, TR.

**Identification—Keys, Descriptions:** Warncke (1991a).

*meyeri* (BENOIST, 1934)

*Hoplitis (Pentadentoscopia)*

1934 *Osmia Meyeri* BENOIST, Bulletin de la Société Entomologique de France, 39: 108. **Type material:** Holotype ♀, “Biskra” [Algeria], MNHN (Paris).—Combination *Hoplitis (Tridentoscopia) meyeri* (BENOIST) in Zanden (1985: 65). Combination *Osmia (Pentadentoscopia) meyeri* BENOIST in Warncke (1991a: 23).

**Distribution—Northern Africa:** DZ, MA. **Southwestern Asia:** IL.

**Identification—Keys, Descriptions:** Benoist (1950b: 185).

*minor* (MORAWITZ, 1877)

*Hoplitis (Pentadentoscopia)*

1877 *Osmia minor* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 14: 45. **Type material:** Lectotype ♂, by designation of Warncke (1991a: 19), “Etschmiadzin” [Armenia], ZIN (St. Petersburg).—Combination *Osmia (Tridentoscopia) minor* MORAWITZ in Schmiedeknecht (1885: 22 [888]). Combination *Hoplitis (Tridentoscopia) minor* (MORAWITZ) in Zanden (1988b: 122). Combination *Osmia (Pentadentoscopia) minor* MORAWITZ in Warncke (1991a: 19).

**Distribution—Europe:** ARM. **Northern Asia:** Turkestan. **Southwestern Asia:** IL, JOR, SYR; IR.

**Identification—Keys, Descriptions:** Ducke (1900); Morawitz (1888: 247–248); Schmiedeknecht (1885–1886); Warncke (1991a).

*minuta* WU, 1990

*Hoplitis (Pentadentoscopia)*

1990 *Hoplitis (Tridentoscopia) minuta* WU, Entomotaxonomia (Yangling), 12: 245, 251. **Type material:** Holotype ♂, “Inner Mongolia: Alxa Right B., Alxa L.” [China], IZCAS (Beijing); paratype ♂.—Combination *Hoplitis (Alcidamea) minuta* WU in Wu (2006: 95).

**Distribution—Northern Asia:** RC(NO).

**Identification—Keys, Descriptions:** Wu (2006).

*moricei* (FRIESE, 1899)*Hoplitis (Pentadentoscemia)*

- 1899 *Osmia moricei* FRIESE, Entomologische Nachrichten (Berlin), 25: 26. Type material: Syntypes ♂(♂), ♀(♀), “Biskra” [Algeria], ZMHB (Berlin).—Combination *Osmia (Osmia) moricei* FRIESE in Friese (1911b: 104). Combination *Hoplitis (Tridentoscemia) moricei* (FRIESE) in Zanden (1988b: 122).
- 1991 *Osmia (Pentadentoscemia) pustinia* WARNCKE, Entomofauna (Ansfelden), 12: 16. NOMEN NOVUM with same type specimen for preoccupied *Osmia moricei* FRIESE, 1899 [not *Heriades moricei* FRIESE, 1897].

**Distribution**—Northern Africa: DZ, E(Ca), MA, TN. **Southwestern Asia**: IL, JOR, PAK. **Extralimital**: Oriental (India).

**Identification**—**Keys, Descriptions**: Ducke (1900); Stanek (1969a: 37–38); Warncke (1991a).

*nitidula* (MORAWITZ, 1877)*Hoplitis (Pentadentoscemia)*

- 1877 *Osmia nitidula* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 14: 43. Type material: Lectotype ♂, by designation of Warncke (1991a: 24), “Etschmiadzin” [Armenia], ZIN (St. Petersburg).—Combination *Osmia (Tridentoscemia) nitidula* MORAWITZ in Schmiedeknecht (1885: 22 [888]). Combination *Osmia (Osmia) nitidula* MORAWITZ in Friese (1911b: 104). Combination *Hoplitis (Tridentoscemia) nitidula* (MORAWITZ) in Zanden (1988b: 122). Combination *Osmia (Pentadentoscemia) nitidula* MORAWITZ in Warncke (1991a: 24).
- 1888 *Osmia transcaspica* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 22: 245. Type material: Syntypes ♂(♂), ♀(♀), “Tschikischljär” [Kazakhstan].—Combination *Osmia (Osmia) transcaspica* MORAWITZ in Friese (1911b: 103). Combination *Anthocopa (Tridentoscemia) transcaspica* (MORAWITZ) in Popov (1952b: 102).—Synonymy in Zanden (1988b: 122).

**Distribution**—Europe: ARM, RUS. **Northern Asia**: KZ. **Southwestern Asia**: IR.

**Identification**—**Keys, Descriptions**: Ducke (1900); Medvedeva (1978); Schmiedeknecht (1885–1886); Warncke (1991a).

*pomarina* (WARNCKE, 1991)*Hoplitis (Pentadentoscemia)*

- 1991 *Osmia (Pentadentoscemia) pomarina* WARNCKE, Entomofauna (Ansfelden), 12: 22. Type material: Holotype ♂, “Erçis/Van, 1650 m” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Europe: GR. **Southwestern Asia**: IR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*quinquespinosa* (FRIESE, 1899)*Hoplitis (Pentadentoscemia)*

- 1899 *Osmia quinquespinosa* FRIESE, Entomologische Nachrichten (Berlin), 25: 26. Type material: Syntypes ♂♂, “Biskra” [Algeria]. Type species of *Pentadentoscemia* WARNCKE.—Combination *Osmia (Pentadentoscemia) quinquespinosa* FRIESE in Warncke (1991a: 18).—Synonymy with *Osmia laevifrons* MORAWITZ in Ducke (1900: 193), rejected by Warncke (1991a: 18).
- 1929 *Osmia consanguinea* BENOIST, Bulletin de la Société Entomologique de France, 1929: 98. Type material: Holotype ♀, “Ghardaia” [Algeria], MNHN (Paris).—Combination *Anthocopa (Anthocopa) consanguinea* (BENOIST) in Zanden (1985: 57).—Synonymy with *Osmia neptunea* BENOIST in Zanden (1992a: 67). Synonymy with *Osmia quinquespinosa* FRIESE in Warncke (1991a: 18).
- 1929 *Osmia neptunea* BENOIST, Bulletin de la Société Entomologique de France, 1929: 99. Type material: ♂(♂),

“Barika” [Algeria], MNHN (Paris).—Combination *Hoplitis (Tridentosmia) neptunea* (BENOIST) in Zanden (1985: 60).—Synonymy in Warncke (1991a: 19).

**Distribution**—Europe: E. Northern Africa: DZ, MA, TN. Southwestern Asia: IL.

**Identification**—Keys, Descriptions: Warncke (1991a).

*ridibunda* (WARNCKE, 1991)

*Hoplitis (Pentadentosmia)*

1991 *Osmia (Pentadentosmia) ridibunda* WARNCKE, Entomofauna (Ansfelden), 9: 15. **Type material**: Holotype ♂, “Antakya” [Turkey], OLMML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*ruficornis* (MORAWITZ, 1875)

*Hoplitis (Pentadentosmia)*

1875 *Osmia ruficornis* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 98. **Type material**: Syntypes ♂(♂), ♀(♀), “in valle Sarafschan” [Tajikistan], ZIN (St. Petersburg).—Combination *Osmia (Osmia) ruficornis* MORAWITZ in Friese (1911b: 105). Combination *Hoplitis (Tridentosmia) ruficornis* (MORAWITZ) in Zanden (1988b: 122).

**Distribution**—Northern Asia: TJ, UZ.

**Identification**—Keys, Descriptions: Duce (1900); Popov (1952a: 187).

*ruficrus* (MORAWITZ, 1875)

*Hoplitis (Pentadentosmia)*

1875 *Osmia ruficrus* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 98. **Type material**: ♂(♂), “in deserto Kisilkum” [Turkestan].—Combination *Hoplitis (Tridentosmia) ruficrus* (MORAWITZ) in Zanden (1988b: 122).

**Distribution**—Northern Africa: ~~TN~~. Northern Asia: KZ, TJ; Turkestan.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*rufopicta* (MORAWITZ, 1875)

*Hoplitis (Pentadentosmia)*

1875 *Osmia rufopicta* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 99. **Type material**: ♀(♀), “prope Samarkand” [Uzbekistan].—Combination *Hoplitis (Tridentosmia) rufopicta* (MORAWITZ) in Zanden (1988b: 122).

**Distribution**—Northern Asia: TJ, UZ.

**Identification**—Keys, Descriptions: Duce (1900). **Note**: Male unknown.

*tringa* (WARNCKE, 1991)

*Hoplitis (Pentadentosmia)*

1991 *Osmia (Pentadentosmia) tringa* WARNCKE, Entomofauna (Ansfelden), 12: 21. **Type material**: Holotype ♂, “Elazig, in 1300 m” [Turkey], OLMML (Linz); paratypes ♂♂, ♀♀.



**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*villiersi* (BENOIST, 1950)

*Hoplitis* (*Pentadentoscopia*)

1950 *Osmia Villiersi* BENOIST, Bulletin de l'Institut Français d'Afrique Noire, 12: 942. Type material: Holotype ♀, “Nouakchott” [Mauritania], MNHN (Paris).—Combination *Hoplitis* (*Tridentoscopia*) *villiersi* (BENOIST) in Zanden (1988b: 123).

1991 *Osmia* (*Pentadentoscopia*) *strepera* WARNCKE, Entomofauna (Ansfelden), 12: 17. Type material: Holotype ♀, “50 km SW Akka” [Morocco], OLML (Linz); paratypes ♂♂, ♀♀.—Synonymy in Zanden (1995: 428).

**Distribution**—Northern Africa: DZ, MA, TN. **Extralimital**: Afrotropic [Mauritania].

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*Hoplitis* subgenus *Platosmia* WARNCKE

Palearctic species: 9

*africana* (WARNCKE, 1990)

*Hoplitis* (*Platosmia*)

1990 *Osmia* (*Platosmia*) *africana* WARNCKE, Entomofauna (Ansfelden), 11: 486. Type material: Holotype ♀, “30 km N Foum Zguid” [Morocco], OLML (Linz); paratypes ♂, ♀♀.

1991 *Hoplitis* (*Platosmia*) *adustus* ZANDEN, Linzer Biologische Beiträge, 23: 347. Type material: Holotype ♂, “Erfoud (Tafilet)” [Morocco], RMNH (Leiden); paratypes ♂♂, ♀♀.—Synonymy in Zanden (1995: 428).

**Distribution**—Northern Africa: DZ, MA. **Southwestern Asia**: IL.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*alchata* (WARNCKE, 1990)

*Hoplitis* (*Platosmia*)

1990 *Osmia* (*Platosmia*) *alchata* WARNCKE, Entomofauna (Ansfelden), 11: 489. Type material: Holotype ♀, “20 km SO Harran/Urfa” [Turkey], OLML (Linz); paratypes ♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*aristotelis* (WARNCKE, 1990)

*Hoplitis* (*Platosmia*)

1990 *Osmia* (*Platosmia*) *aristotelis* WARNCKE, Entomofauna (Ansfelden), 11: 485. Type material: Holotype ♂, “Agadir” [Morocco], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: MA.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.



*gerofita* (WARNCKE, 1990)*Hoplitis (Platosmia)*

- 1990 *Osmia (Platosmia) gerofita* WARNCKE, Entomofauna (Ansfelden), 9: 487. Type material: Holotype ♀, “Har Sha’alav/13 km N Gerofit” [Israel], OLML (Linz); paratype ♀.

**Distribution**—Southwestern Asia: IL.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*incognita* ZANDEN, 1996*Hoplitis (Platosmia)*

- 1996 *Hoplitis (Platosmia) incognita* ZANDEN, Linzer Biologische Beiträge, 28: 887. Type material: Holotype ♀, “50 km n. Foun Zguid” [Morocco], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: DZ, MA, TN.

**Identification**—**Keys, Descriptions**: Warncke (1990, as *Osmia dumonti*). **Misapplication**: *Osmia dumonti* in Warncke (1990: 489) is *Hoplitis (Platosmia) incognita* ZANDEN, see Zanden (1996b: 887).

*inconspicua* TKALCU, 1995*Hoplitis (Platosmia)*

- 1995 *Hoplitis (Platosmia) inconspicua* TKALCU, Entomologische Abhandlungen (Dresden), 57: 126. Type material: Holotype ♂, “Uvs-Aimak, Charchiraa-uul, 30 km S Ulaangom, Umgeb. Kurort” [Mongolia], MLUH (Halle).

**Distribution**—Northern Asia: MGL.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*lucidula* (BENOIST, 1934)*Hoplitis (Platosmia)*

- 1934 *Osmia lucidula* BENOIST, Bulletin de la Société Entomologique de France, 39: 107. Type material: Holotype ♀, “Ras el Ma” [Morocco], MNHN (Paris).—Combination *Hoplitis (Liosmia) lucidula* (BENOIST) in Zanden (1985: 64). Combination *Osmia (Platosmia) lucidula* BENOIST in Warncke (1990: 484).

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions**: Warncke (1990); Zanden (1985: 64–65, 1992a: 70).

*platalea* (WARNCKE, 1990)*Hoplitis (Platosmia)*

- 1990 *Osmia (Platosmia) platalea* WARNCKE, Entomofauna (Ansfelden), 11: 484. Type material: Holotype ♀, “30 km W Quarzazate” [Morocco], OLML (Linz); paratypes ♂, ♀♀. Type species of *Platosmia* WARNCKE.

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*recticauda* (STANEK, 1969)

*Hoplitis (Platosmia)*

- 1969 *Osmia recticauda* STANEK, Nachrichten des Naturwissenschaftlichen Museums der Stadt Aschaffenburg, 78: 9. Type material: Holotype ♂, “Mut, 294 m” [Turkey], SMFD (Frankfurt).—Combination *Hoplitis (Hoplitis) recticauda* (STANEK) in Zanden (1988b: 121). Combination *Osmia (Platosmia) recticauda* STANEK in Warncke (1990: 489).

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: Tkalcu (1995: 126); Warncke (1990).

*Hoplitis* subgenus *Prionohoplitis* TKALCU

Palearctic species: 7

*brachypogon* (PÉREZ, 1879)

*Hoplitis (Prionohoplitis)*

- 1879 *Osmia brachypogon* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 195. Type material: Lectotype ♀, by designation of Tkalcu (1974c: 331), “Marseille” [France], MNHN (Paris).—Combination *Hoplitis (Acanthosmia) brachypogon* (PÉREZ) in Zanden (1988b: 120). Combination *Osmia (Alcidamea) brachypogon* PÉREZ in Warncke (1991h: 719).
- 1934 *Osmia Seyrigi* BENOIST, Bulletin de la Société Entomologique de France, 39: 106. Type material: Holotype ♂, “El Solidado” [Spain], MNHN (Paris).—Combination *Hoplitis (Liosmia) seyrigi* (BENOIST) in Zanden (1985: 63). Combination *Hoplitis (Alcidamea) seyrigi* (BENOIST) in Zanden (1988b: 120).—Synonymy in Warncke (1991h: 719) and in Zanden (1991b: 352).

**Distribution**—Europe: AL, BG, E, F, GR, GR(Cr), HR, I, P. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Benoist (1931); DUCKE (1900); Tkalcu (1974c: 331); Warncke (1991h); Zanden (1988a: 63, 1991b: 357–358).

– subspecies *brachypogon* (PÉREZ, 1879)

- 1879 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: E, F, I, P.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *carsophila* (DUCKE, 1899)

- 1899 *Osmia carsophila* DUCKE, Entomologische Nachrichten (Berlin), 25: 212. Type material: Holotype ♂, “bei Fiume” [Croatia], ZMHB (Berlin).—Synonymy with *Osmia brachypogon* PÉREZ in Benoist (1945: 28).—Combination *Osmia (Alcidamea) brachypogon carsophila* DUCKE in Warncke (1991h: 719).

**Distribution**—Europe: AL, BG, GR, GR(Cr), HR. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Warncke (1991h).

*campanularis* (MORAWITZ, 1877)*Hoplitis* (*Prionohoplitis*)

- 1877 *Osmia campanularis* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 14: 42. Type material: Lectotype ♀, by designation of Warncke (1991h: 735), “Mzchett” [Georgia], ZIN (St. Petersburg).—Combination *Hoplitis* (*Acanthosmia*) *campanularis* (MORAWITZ) in Zanden (1988b: 120). Combination *Osmia* (*Alcidamea*) *campanularis* MORAWITZ in Warncke (1991h: 735).

**Distribution**—Europe: AL, BG, E, GE, GR, I, SLO; Yugoslavia. **Northern Africa**: DZ, MA. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Schmiedeknecht (1885–1886); Warncke (1991h).

– subspecies *campanularis* (MORAWITZ, 1877)

- 1877 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: AL, BG, GE, GR, I, SLO; Yugoslavia. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *ibericola* (MAVROMOUSTAKIS, 1947)

- 1947 *Osmia digitata ibericola* MAVROMOUSTAKIS, Eos (Madrid), 23: 357. Type material: Holotype ♂, “Paracuellos” [Spain], DAAN (Nicosia).—Combination *Osmia* (*Alcidamea*) *campanularis ibericola* MAVROMOUSTAKIS in Warncke (1991h: 735).

**Distribution**—Europe: E.

**Identification**—**Keys, Descriptions**: Warncke (1991h); Zanden (1984c: 182).

– subspecies *sexcinctella* (PÉREZ, 1895)

- 1895 *Osmia sexcinctella* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 14. Type material: ♀(♀), [Algeria], MNHN (Paris).—Combination *Hoplitis* (*Hoplitis*) *sexcinctella* (PÉREZ) in Zanden (1988b: 121). Combination *Osmia* (*Alcidamea*) *campanularis sexcinctella* PÉREZ in Warncke (1991h: 736).

- 1899 *Osmia digitata* FRIESE, Entomologische Nachrichten (Berlin), 25: 61. Type material: Holotype ♂, “Algeria” [Algeria], ZMHB (Berlin).—Synonymy with *Hoplitis campanularis* (MORAWITZ) in Zanden (1988b: 115, 120). Synonymy with *Osmia campanularis sexcinctella* PÉREZ in Warncke (1991h: 736).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—**Keys, Descriptions**: Duce (1900).

*curvipes* (MORAWITZ, 1871)*Hoplitis* (*Prionohoplitis*)

- 1871 *Osmia curvipes* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 8: 204. Type material: Syntypes ♂(♂), ♀(♀), “Syra, Corfu” [Greece], “Calabria” [Italy]. Type species of *Prionohoplitis* TKALCU.—Combination *Osmia* (*Tridentosmia*) *curvipes* MORAWITZ in Schmiedeknecht (1885: 22 [888]). Combination *Osmia* (*Osmia*) *curvipes* MORAWITZ in Friese (1911b: 102). Combination *Hoplitis* (*Tridentosmia*) *curvipes*

(MORAWITZ) in Zanden (1987: 82). Combination *Osmia (Alcidamea) curvipes* MORAWITZ in Warncke (1991h: 737).

**Distribution**—Europe: AZ, BG, E, F, GR, I, I(Si). **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: DUCKE (1900); Schmiedeknecht (1885–1886); Warncke (1991h); Zanden (1983: 131, 1987: 82).

*eburnea* (WARNCKE, 1991)

*Hoplitis (Prionohoplitis)*

1991 *Osmia (Alcidamea) eburnea* WARNCKE, Linzer Biologische Beiträge, 23: 738. **Type material**: Holotype ♀, “10 km W Uludere in 1000 m/Hakkari” [Turkey], OLMML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—**Southwestern Asia**: IL, SYR, TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*epeoliformis* (DUCKE, 1899)

*Hoplitis (Prionohoplitis)*

1899 *Osmia epeoliformis* DUCKE, Entomologische Nachrichten, 25: 212. **Type material**: Holotype ♀, “Oase Tiout” [Algeria], ZMHB (Berlin).—Combination *Anthocopa (Anthocopa) epeoliformis* (DUCKE) in Tkalcu (1975a: 181). Combination *Osmia (Alcidamea) epeoliformis* (DUCKE) in Warncke (1991h: 737).

**Distribution**—**Northern Africa**: DZ, MA. **Southwestern Asia**: JOR.

**Identification**—**Keys, Descriptions**: DUCKE (1900). **Note**: Male unknown.

*grossepunctata* (KOHL, 1905)

*Hoplitis (Prionohoplitis)*

1905 *Osmia grossepunctata* KOHL, Annalen des Kaiserlich-Königlichen Naturhistorischen Hofmuseums (Wien), 20: 242. **Type material**: Holotype ♂, “Erdschias (Ewlije-Dagh)” [Turkey], NMW (Wien).—Combination *Hoplitis (Hoplitis) grossepunctata* (KOHL) in Zanden (1988b: 121). Combination *Osmia (Alcidamea) grossepunctata* KOHL in Warncke (1991h: 740).

**Distribution**—**Europe**: GR. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Mavromoustakis (1938: 469); Warncke (1991h); Zanden (1989: 73).

*insolita* (BENOIST, 1928)

*Hoplitis (Prionohoplitis)*

1928 *Osmia insolita* BENOIST, Annales de la Société Entomologique de France, 97: 18. **Type material**: Holotype ♂, “Mascara” [Algeria], MNHN (Paris).—Combination *Hoplitis (Tridentosmia) insolita* (BENOIST) in Zanden (1988b: 122). Combination *Osmia (Alcidamea) insolita* BENOIST in Warncke (1991h: 737).

**Distribution**—**Northern Africa**: DZ.

**Identification**—**Keys, Descriptions**: Zanden (1985: 49–50). **Note**: Female unknown.

Genus *Hoplosmia* THOMSON

Palearctic subgenera: 3 Palaeartic species: 19

*Hoplosmia* subgenus *Hoplosmia* THOMSON

Palaeartic species: 6

*croatica* (FRIESE, 1893)*Hoplosmia* (*Hoplosmia*)

1893 *Osmia croatica* FRIESE, Entomologische Nachrichten (Berlin), 19: 353. Type material: Lectotype ♂, by designation of Tkalcu (1974a: 123), “Triest” [Italy], ZMHB (Berlin).—Combination *Anthocopa* (*Hoplosmia*) *croatica* (FRIESE) in Tkalcu (1974a: 122).

**Distribution**—Europe: BG, GR, HR, I, SCG, SLO. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Duce (1900); Stanek (1969a: 19–22); Tkalcu (1974a).

*elegans* TKALCU, 1992*Hoplosmia* (*Hoplosmia*)

1992 *Hoplosmia* (*Hoplosmia*) *elegans* TKALCU, Acta Societatis Zoologicae Bohemoslovaca (Praha), 56: 220. Type material: Holotype ♂, “Side” [Turkey], RMNH (Leiden); paratypes ♂(♂), ♀(♀).

**Distribution**—**Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*picena* TKALCU, 1999*Hoplosmia* (*Hoplosmia*)

1999 *Hoplosmia* (*Hoplosmia*) *picena* TKALCU, Bulletin de la Société Entomologique de Mulhouse, Janvier–Mars: 11. Type material: Holotype ♀, “P.N. Sibillini” [Italy], RMNH (Leiden); paratypes ♀♀.

**Distribution**—Europe: I.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*spinigera* (LATREILLE, 1811)*Hoplosmia* (*Hoplosmia*)

1811 *Osmia spinigera* LATREILLE, Encyclopédie Méthodique, Histoire Naturelle, Insectes, vol. 8, p. 584. Type material: Syntypes ♂(♂), ♀(♀), “Égypte” [Egypt], Olivier Collection.—Combination *Anthocopa* (*Hoplosmia*) *spinigera* (LATREILLE) in Tkalcu (1974a: 122).

1869 *Osmia clavicula* GERSTAECKER, Entomologische Zeitung (Stettin), 30: 347. Type material: Lectotype ♂, by designation of Tkalcu (1974a: 122), “Naxos” [Greece], ZMHB (Berlin).—Combination *Osmia* (*Hoplosmia*) *clavicula* GERSTAECKER in Schmiedeknecht (1885: 23 [889]).—Synonymy in Tkalcu (1974a: 122).

**Distribution**—Europe: BG, GR. **Northern Africa**: ET. **Southwestern Asia**: IL, JOR, RL, TR.

**Identification**—**Keys, Descriptions**: Duce (1900); Mavromoustakis (1948b: 216, 1959: 297–298); Tkalcu (1974a).

*spinulosa* (KIRBY, 1802)*Hoplosmia* (*Hoplosmia*)

1802 *Apis spinulosa* KIRBY, Monographia Apum Angliae, 2: 261. Type material: Lectotype ♂, by designation of Tkalcu (1974a: 119), [United Kingdom], BMNH (London); paralectotypes ♂, ♀♀. Type species of *Hoplosmia*

THOMSON.—Combination *Pseudosmia spinulosa* (KIRBY) in Radoszkowski (1874c: 159). Combination *Osmia* (*Hoplosmia*) *spinulosa* (KIRBY) in Schmiedeknecht (1885: 23 [889]). Combination *Anthocopa* (*Hoplosmia*) *spinulosa* (KIRBY) in Tkalcu (1974a: 119).

- 1882 *Osmia euchreiformis* RADOSZKOWSKI, Proceedings of the Warsaw Society of Naturalists, Bulletin of Biology, 2: 77 [not seen]. Type material: Holotype ♂, “Echmiadzin” [Armenia], ZMHB (Berlin).—Synonymy in Tkalcu (1974a: 119).

**Distribution**—Europe: A, AND, ARM, B, BG, CH, CZ, D, E, F, FL, GB, H, I, I(Si), L, MK, N, NL, RUS, S, SK, SLO, UA. **Northern Asia**: KS, KZ. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Mavroumoustakis (1959: 298); Medvedeva (1978); Móczár (1958); Radoszkowski (1874c: 159, 1887a: 282–283); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1974a, 1992: 220221).

*tyrneri* TKALCU, 1992

*Hoplosmia* (*Hoplosmia*)

- 1992 *Hoplosmia* (*Hoplosmia*) *tyrneri* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 56: 220. Type material: Holotype ♂, “Tashkent, Galvasai” [Uzbekistan], Tyrner Collection (Litvinov); paratypes ♂♂.

**Distribution**—Northern Asia: UZ.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*Hoplosmia* subgenus *Odontanthocopa* TKALCU

Palearctic species: 12

*anceyi* (PÉREZ, 1879)

*Hoplosmia* (*Odontanthocopa*)

- 1879 *Osmia Anceyi* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 187. Type material: Lectotype ♀, by designation of Tkalcu (1974a: 128), “Environs de Marseille” [France], MNHN (Paris).—Combination *Osmia* (*Hoplosmia*) *anceyi* PÉREZ in Schmiedeknecht (1885: 23 [889]). Combination *Anthocopa* (*Odontanthocopa*) *anceyi* (PÉREZ) in Tkalcu (1974a: 128).

**Distribution**—Europe: CH, E, F, P; HR, I. **Northern Africa**: DZ, MA, TN.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Benoist (1931); Schmiedeknecht (1885–1886); Tkalcu (1974a).

– subspecies *anceyi* (PÉREZ, 1879)

- 1879 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: CH, E, F, P.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *biarmica* ZANDEN, 1994

- 1994 *Hoplosmia* (*Odontanthocopa*) *anceyi biarmica* ZANDEN, Linzer Biologische Beiträge, 26: 1114. Type material:

Holotype ♀, “Tizi-n-Tichka S., 2000 m” [Morocco], Schwarz Collection (Ansfelden); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: DZ, MA, TN.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*bidentata* (MORAWITZ, 1876)

*Hoplosmia (Odontanthocopa)*

1876 *Osmia bidentata* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 12: 38. **Type material**: Syntypes ♂(♂), ♀(♀), “Etschmiadzin” [Armenia]. **Type species** of *Odontanthocopa* TKALCU.—Combination *Osmia (Hoplosmia) bidentata* MORAWITZ in Schmiedeknecht (1885: 23 [889]). Combination *Anthocopa (Odontanthocopa) bidentata* (MORAWITZ) in Tkalcu (1974a: 127).

1877 *Osmia affinis* FRIVALDSKY, Matematikai és Természettudományi Közlemények, 13: 360. **Type material**: Syntypes ♂(♂), ♀(♀), “In Comitatu Crassoviensi ad Oraviczam, in Comitatu Pestiensi vero ad Budapestinum et in Praedio-Peszér” [Hungary].—Synonymy in Tkalcu (1974a: 127).

**Distribution**—Europe: A, AL, ARM, BG, CZ, E, F, GR, H, HR, I, MK, RUS, SK, SLO, UA. Northern Africa: ET, DZ?. Northern Asia: RUS(FS). Southwestern Asia: IL, JOR, SYR, TR.

**Identification**—Keys, Descriptions: Alfken (1914: 197); Banaszak and Romasenko (2001); Benoist (1931); Duce (1900); Medvedeva (1978); Móczár (1958); Romankova (1995); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1974a, 1992: 225).

– subspecies *bidentata* (MORAWITZ, 1876)

1876 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: A, AL, ARM, BG, CZ, E, F, GR, H, HR, I, MK, RUS, SK, SLO, UA. Northern Africa: DZ?. Northern Asia: RUS(FS). Southwestern Asia: TK.

**Identification**—Keys, Descriptions: Tkalcu (1979: 320).

– subspecies *pallens* (TKALCU, 1979)

1979 *Anthocopa (Odontanthocopa) bidentata pallens* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 76: 320. **Type material**: Holotype ♀, “Erzurum” [Turkey], EMET (Erzurum); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: ET. Southwestern Asia: IL, JOR, SYR, TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*dido* (GRIBODO, 1894)

*Hoplosmia (Odontanthocopa)*

1894 *Osmia dido* GRIBODO, Bullettino della Società Entomologica Italiana, 26: 289. **Type material**: Holotype ♀, “Tunisia, Gebel Res.” [Tunisia], MSNG (Genova).—Combination *Anthocopa dido* (GRIBODO) in Zanden (1990: 54).

1895 *Osmia abbreviata* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 13. NOMEN PRAEOCCUPATUM [not *Osmia abbreviata* MORAWITZ, 1875]. **Type material**: Lectotype ♀, by designation of Tkalcu (1974a: 128), “Algéria” [Algeria], MNHN (Paris).—Synonymy in Zanden (1990: 54).



- 1896 *Osmia compacta* PÉREZ, *Correctures: Espèces nouvelles de mellifères de Barbarie*, not paginated single page appendix to Pérez (1895). NOMEN NOVUM with same type specimen for preoccupied *Osmia abbreviata* PÉREZ, 1895 [not *Osmia abbreviata* MORAWITZ, 1875].—Combination *Anthocopa* (*Odontanthocopa*) *compacta* (PÉREZ) in Tkalcu (1974a: 128).

**Distribution**—Northern Africa: DZ, TN. Southwestern Asia: CY, IL.

**Identification**—Keys, Descriptions: Alfken (1914: 197); Tkalcu (1974a, 1979: 320–321).

*distinguenda* (TKALCU, 1974)

*Hoplosmia* (*Odontanthocopa*)

- 1974 *Anthocopa* (*Odontanthocopa*) *distinguenda* TKALCU, *Acta Entomologica Bohemoslovaca* (Praha), 71: 129. Type material: Holotype ♂, “Jerusalem” [Israel], BMNH (London).

**Distribution**—Europe: GR. Southwestern Asia: IL, JOR, TR.

**Identification**—Keys, Descriptions: Tkalcu (1979: 320–321, 1992: 223–224).

*fallax* (PÉREZ, 1895)

*Hoplosmia* (*Odontanthocopa*)

- 1895 *Osmia fallax* PÉREZ, *Espèces nouvelles de mellifères de Barbarie*, p. 13. Type material: Lectotype ♂, by designation of Tkalcu (1974a: 131), “Andalusia” [Spain], MNHN (Paris). Type species of *Odonterythrosmia* TKALCU.—Combination *Anthocopa* (*Odonterythrosmia*) *fallax* (PÉREZ) in Tkalcu (1974a: 131).

**Distribution**—Europe: E. Northern Africa: MA; DZ.

**Identification**—Keys, Descriptions: Ducke (1900); Tkalcu (1974a).

*hermonensis* TKALCU, 1992

*Hoplosmia* (*Odontanthocopa*)

- 1992 *Hoplosmia* (*Odontanthocopa*) *hermonensis* TKALCU, *Acta Societatis Zoologicae Bohemoslovaca* (Praha), 56: 223. Type material: Holotype ♂, “Mt. Hermon, 1700 m” [Israel], RMNH (Leiden); paratypes ♂♂.

**Distribution**—Southwestern Asia: IL.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*larochei* (TKALCU, 1993)

*Hoplosmia* (*Odontanthocopa*)

- 1993 *Osmia* (*Odontanthocopa*) *larochei* TKALCU, *Veröffentlichungen des Übersee-Museum Bremen* (Naturwissenschaften), 12: 810. Type material: Holotype ♀, “Gran Canaria Cueva Grande Las Palmas” [Spain: Canary Islands], La Roche Collection; paratype ♀.

**Distribution**—Northern Africa: E(Ca).

**Identification**—Keys, Descriptions: Tkalcu (2000a: 310). **Note**: Male unknown.

*ligurica* (MORAWITZ, 1868)*Hoplosmia (Odontanthocopa)*

- 1868 *Osmia ligurica* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 5: 150. Type material: Syntypes ♂(♂), ♀(♀), “Bei Nizza im Thale des Paglione” [France].—Combination *Osmia (Hoplosmia) ligurica* MORAWITZ in Schmiedeknecht (1885: 23 [889]). Combination *Anthocopa (Odontanthocopa) ligurica* (MORAWITZ) in Tkalcu (1974a: 130).
- 1879 *Osmia detrita* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 188. Type material: Lectotype ♀, by designation of Tkalcu (1974a: 130), “Bordeaux, Marseille” [France], MNHN (Paris).—Synonymy in Schmiedeknecht (1886: 199 [1065]).

**Distribution**—**Europe**: A, AL, ARM, BG, CH, E, E, F(Co), GR, H, HR, I, I(Sa), I(Si), P, MK, RS, SK, SLO. **Northern Africa**: MA. **Southwestern Asia**: CY, IL, IR, JOR, SYR, TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Schmiedeknecht (1885–1886); Tkalcu (1974a, 1992: 223).

*olgae* (TKALCU, 1978)*Hoplosmia (Odontanthocopa)*

- 1978 *Anthocopa (Odontanthocopa) olgae* TKALCU, Casopis Slezskeho Muzea Opava (A), 27: 159. Type material: Holotype ♂, “Bulgaria sept.–or. Albena” [Bulgaria], Tkalcu Collection (Praha); paratypes ♂♂, ♀♀.

**Distribution**—**Europe**: BG. **Southwestern Asia**: SYR, TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*padri* (TKALCU, 1974)*Hoplosmia (Odontanthocopa)*

- 1974 *Anthocopa (Odontanthocopa) padri* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 71: 129. Type material: Holotype ♀, “Slancev Brjag” [Bulgaria], Pádr Collection (Praha); paratypes ♂♂, ♀♀.

**Distribution**—**Europe**: BG, GR, HR, MK, SCG. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Tkalcu (1979: 321).

*scutellaris* (MORAWITZ, 1868)*Hoplosmia (Odontanthocopa)*

- 1868 *Osmia scutellaris* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 5: 151. Type material: Syntypes ♂(♂), ♀(♀), “im Magnan-Thale” [France], “auch nördlicher bei Pallanza” [Italy], “und Lugano” [Switzerland].—Combination *Osmia (Hoplosmia) scutellaris* MORAWITZ in Schmiedeknecht (1885: 23 [889]). Combination *Anthocopa (Odontanthocopa) scutellaris* (MORAWITZ) in Tkalcu (1974a: 130).

**Distribution**—**Europe**: AL, BG, CH, E, E, GR, H, I, MK, P, RO, RUS, SK, SLO, UA; Caucasus. **Northern Africa**: DZ. **Southwestern Asia**: CY, IL, JOR, SYR, TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Schmiedeknecht (1885–1886); Tkalcu (1974b, 1978: 159–162, 1993b: 810–811, 2000a: 310).

*warnckei* TKALCU, 1992

*Hoplosmia (Odontanthocopa)*

- 1992 *Hoplosmia (Odontanthocopa) warnckei* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 56: 223. Type material: Holotype ♂, “15 km SE Sarvestan/Fars, 1800 m” [Iran], OLML (Linz); paratypes ♂♂.

**Distribution**—Southwestern Asia: IR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*Hoplosmia* subgenus *Paranthocopa* TKALCU

Palaeartic species: 1

*pinguis* (PÉREZ, 1895)

*Hoplosmia (Paranthocopa)*

- 1895 *Osmia pinguis* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 12. Type material: Lectotype ♀, by designation of Tkalcu (1974a: 133), “Da Calle” [Algeria], MNHN (Paris). Type species of *Paranthocopa* TKALCU.—Combination *Anthocopa (Paranthocopa) pinguis* (PÉREZ) in Tkalcu (1974a: 133).
- 1928 *Osmia indivisa* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 8: 214. Type material: Holotype ♂, “Marrakech” [Morocco], MNHN (Paris).—Synonymy in Zanden (1985: 55).

**Distribution**— Europe: E. Northern Africa: DZ, MA, TN. Southwestern Asia: IL, JOR, SYR.

**Identification**—**Keys, Descriptions**: Duce (1900); Tkalcu (1974a).

– subspecies *carbo* ZANDEN, 1994

- 1994 *Hoplosmia (Paranthocopa) pinguis carbo* ZANDEN, Linzer Biologische Beiträge, 26: 1116. Type material: Holotype ♀, “8 km O Yeroham” [Israel], Schwarz Collection (Ansfelden); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: IL, JOR, SYR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *pinguis* (PÉREZ, 1895)

- 1895 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**— Europe: E. Northern Africa: DZ, MA, TN.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

Genus *Ochreriades* MAVROMOUSTAKIS

Palaeartic subgenera: – Palaeartic species: 1

*fasciatus* (FRIESE, 1899)

*Ochreriades*

- 1899 *Eriades fasciatus* FRIESE, Entomologische Nachrichten (Berlin), 25: 325. Type material: Holotype ♂, “Jericho” [Palestine], OUMNH (Oxford). Type species of *Ochreriades* MAVROMOUSTAKIS.

**Distribution**—Southwestern Asia: IL, JOR, SYR.

**Identification**—**Keys, Descriptions**: Griswold (1994b); Mavromoustakis (1956b: 226–229).

Genus *Osmia* PANZER

Palearctic subgenera: 14 Palaeartic species: 188

Subgeneric placement uncertain

Palaeartic species: 3

*croceiventris* RADOSZKOWSKI, 1882

*Osmia*

1882 *Osmia croceiventris* RADOSZKOWSKI, Proceedings of the Warsaw Society of Naturalists, Bulletin of Biology, 2: 78 [not seen]. Type material: ♀(♀), “Tashkent” [Uzbekistan].

**Distribution**—Northern Asia: UZ.

**Identification**—**Keys, Descriptions**: Radoszkowski (1887a: 283). **Note**: Male unknown.

*gulmargensis* NURSE, 1903

*Osmia*

1903 *Osmia gulmargensis* NURSE, The Annals and Magazine of Natural History (London), ser. 7, 11: 545. Type material: Holotype ♀, “Kashmir, near Gulmarg, between 8000 and 9000 feet” [India].

**Distribution**—Southwestern Asia: PAK. **Extralimital**: Oriental (India).

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*kashmirensis* NURSE, 1903

*Osmia*

1903 *Osmia kashmirensis* NURSE, The Annals and Magazine of Natural History (London), ser. 7, 11: 546. Type material: Syntypes ♂♂, “Kashmir, between 6000 and 9000 feet” [India].

**Distribution**—Southwestern Asia: PAK. **Extralimital**: Oriental (India).

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*Osmia* subgenus *Allosmia* TKALCU

Palaeartic species: 10

*bischoffi* ATANASSOV, 1938

*Osmia* (*Allosmia*)

1938 *Osmia bischoffi* ATANASSOV, Mitteilungen aus den Königlichen Naturwissenschaftlichen Instituten in Sofia, Bulgarien, 11: 180. Type material: Holotype ♂, “im Park des Palais Euxinograd bei Warna am Schwarzen Meer” [Bulgaria], SOFM (Sofia).—Combination *Hoplitis* (*Allosmia*) *bischoffi* (ATANASSOV) in Zanden (1988b: 120).

**Distribution**—Europe: BG, GR, RO. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*decorata* MORAWITZ, 1886

*Osmia (Allosmia)*

1886 *Osmia decorata* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 20: 71. Type material: ♂(♂), “Talysch-Karabach-Jurdi” [Caucasus], ZIN (St. Petersburg).—Combination *Osmia (Osmia) decorata* MORAWITZ in Friese (1911b: 107). Combination *Hoplitis (Allosmia) decorata* (MORAWITZ) in Zanden (1988b: 120).

**Distribution**—Europe: Caucasus.

**Identification**—Keys, Descriptions: Duce (1900). **Note**: Female unknown.

*imitatrix* (TKALCU, 1992)

*Osmia (Allosmia)*

1992 *Hoplitis (Allosmia) imitatrix* TKALCU, Acta Societatis Zoologicae Bohemoslovacae (Praha), 56: 219. Type material: Holotype ♀, “Kara-kala” [Turkmenistan], Halada Collection.

**Distribution**—Northern Asia: TM.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*lhotelleriei* PÉREZ, 1887

*Osmia (Allosmia)*

1887 *Osmia lhotelleriei* PÉREZ, Revue d’Entomologie, Société Française d’Entomologie, 6: 178. Type material: Lectotype ♀, by designation of Tkalcu (1975a: 180), “Égypte” [Egypt], MNHN (Paris).—Combination *Osmia (Osmia) lhotelleriei* PÉREZ in Friese (1911b: 85). Combination *Hoplitis (Allosmia) lhotelleriei* (PÉREZ) in Zanden (1988b: 120).

**Distribution**—Northern Africa: DZ, ET, MA, LAR, TN. **Southwestern Asia**: IL, JOR.

**Identification**—Keys, Descriptions: Duce (1900); Stanek (1969a: 2324).

*melanura* MORAWITZ, 1871

*Osmia (Allosmia)*

1871 *Osmia melanura* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 8: 203. Type material: ♀(♀), “Calabria” [Italy].—Combination *Osmia (Osmia) melanura* MORAWITZ in Friese (1911b: 108). Combination *Hoplitis (Allosmia) melanura* (MORAWITZ) in Zanden (1988b: 120).

**Distribution**—Europe: BG, F, GR, I, I(Si), MK, UA. **Southwestern Asia**: TR.

**Identification**—Keys, Descriptions: Banaszak and Romasenko (2001); Duce (1900); Schmiedeknecht (1885–1886).

*nuda* FRIESE, 1899

*Osmia (Allosmia)*

1899 *Osmia nuda* FRIESE, Entomologische Nachrichten (Berlin), 25: 328. Type material: Syntypes ♀♀, “Balkan” [Balkans], ZMHB (Berlin).—Synonymy with *Chelostoma ventrale* SCHLETTERER in Warncke (1986: 75), rejected by Özbek and Zanden (1992a: 21).—Combination *Hoplitis (Allosmia) nuda* (FRIESE) in Özbek and Zanden (1992a: 21).

**Distribution**—Europe: Balkans. **Southwestern Asia**: TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*rufohirta* LATREILLE, 1811

*Osmia* (*Allosmia*)

- 1811 *Osmia rufo-hirta* LATREILLE, Encyclopédie Méthodique, Histoire Naturelle, Insectes, vol. 8, p. 580 [not seen]. Type material: Syntypes ♀♀, “France” [France], “Allemagne” [Germany]. Type species of *Allosmia* TKALCU.—Combination *Osmia* (*Acanthosmia*) *rufohirta* LATREILLE in Schmiedeknecht (1885: 21 [887]). Combination *Osmia* (*Osmia*) *rufohirta* LATREILLE in Friese (1911b: 85). Combination *Hoplitis* (*Allosmia*) *rufohirta* (LATREILLE) in Tkalcu (1974b: 331).
- 1841 *Osmia fulvo-hirta* LEPELETIER, Histoire Naturelle des Insectes, Hyménoptères, vol. 2, p. 322. Type material: Lectotype ♀, by designation of Tkalcu (1974c: 331), “Environs de Paris” [France], MNHN (Paris).—Synonymy in Dalla Torre (1896: 410).
- 1857 *Osmia spiniventris* GIRAUD, Verhandlungen des Zoologisch-Botanischen Vereins in Wien, 7: 181. Type material: Syntypes ♂♂, “Autriche” [Austria], “Carniole” [Slovenia], “Italie” [Italy], “Hongrie” [Hungary].—Synonymy in Dalla Torre (1896: 410).

**Distribution—Europe:** A, AL, B, BG, CH, CZ, D, E, F, F(Co), FL, GE, GR, H, I, I(Sa), I(Si), L, MK, RO, SK, SLO, UA. **Northern Africa:** DZ, MA, TN. **Northern Asia:** RC; Turkestan. **Southwestern Asia:** IL, JOR, TR.

**Identification—Keys, Descriptions:** Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Móczár (1958); Radoszkowski (1887a: 290); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1974b: 332, 1992: 219); Wu (2006).

– subspecies *rufohirta* LATREILLE, 1811

- 1811 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** A, AL, B, BG, CH, CZ, D, E, F, F(Co), FL, GE, GR, H, I, I(Sa), I(Si), L, MK, RO, SK, SLO, UA. **Northern Asia:** RC; Turkestan. **Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *soror* PÉREZ, 1896

- 1895 *Osmia cognata* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 12. NOMEN PRAEOCCUPATUM [not *Osmia cognata* CRESSON, 1864]. Type material: ♀ (♀), [Algeria], MNHN (Paris).
- 1896 *Osmia soror* PÉREZ, Correctures: Espèces nouvelles de mellifères de Barbarie, not paginated single page appendix. NOMEN NOVUM with same type specimen for preoccupied *Osmia cognata* PÉREZ, 1895 [not *Osmia cognata* CRESSON, 1864].—Synonymy with *Osmia rufohirta* LATREILLE in Friese (1911b: 85).—Combination *Hoplitis* (*Allosmia*) *rufohirta soror* (PÉREZ) in Zanden (1988b: 120).

**Distribution—Northern Africa:** DZ, MA, TN. **Southwestern Asia:** IL, JOR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*rufotibialis* FRIESE, 1920

*Osmia* (*Allosmia*)

- 1920 *Osmia rufotibialis* FRIESE, Deutsche Entomologische Zeitschrift (Berlin), 1920: 50. Type material: ♀ (♀), “Ain

Dilb” [Palestine], ZMHB (Berlin).—Combination *Hoplitis (Allosmia) rufotibialis* (FRIESE) in Zanden (1988b: 120).

**Distribution**—Southwestern Asia: IL, JOR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*rutila* ERICHSON, 1835

*Osmia (Allosmia)*

1835 *Osmia rutila* ERICHSON, in: Walth, Reise durch Tirol, Oberitalien und Piemont nach dem südlichen Spanien (Passau), vol. 2, p. 107. **Type material:** Holotype ♀, “Andalusien” [Spain], ZMHB (Berlin).—Combination *Hoplitis (Allosmia) rutila* (ERICHSON) in Zanden (1988b: 120).

1843 *Osmia baetica* SPINOLA, Annales de la Société Entomologique de France, ser. 2, 1: 142. **Type material:** ♀(♀), [Spain].—Synonymy in Dalla Torre (1896: 410), but see Zanden (1987: 75).

1895 *Osmia xanthognatha* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 12. **Type material:** Lectotype ♀, by designation of Zanden (1988a: 60), “Tanger” [Morocco], MNHN (Paris).—Combination *Osmia (Osmia) xanthognatha* PÉREZ in Friese (1911b: 107).—Synonymy in Zanden (1987: 75).

**Distribution**—Europe: E. Northern Africa: DZ, MA.

**Identification**—**Keys, Descriptions:** Benoist (1950b: 186); Ducke (1900); Zanden (1985: 69).

*sybarita* SMITH, 1853

*Osmia (Allosmia)*

1853 *Osmia sybarita* SMITH, Catalogue of Hymenopterous Insects in the Collection of the British Museum, vol. 1, p. 140. **Type material:** Holotype ♀, “Albania” [Albania], BMNH (London).—Combination *Hoplitis (Allosmia) sybarita* (SMITH) in Tkalcu (1974b: 333).

1873 *Osmia ruficollis* SICHEL, in: Dours, Revue et Magasin de Zoologie Pure et Appliqué, ser. 3, 1: 297. **Type material:** Syntypes ♂♂, ♀♀, “Iles de l’Archipel grec” [Greece], MNHN (Paris).—Synonymy in Zanden (1988b: 120).

**Distribution**—Europe: AL, GR. Northern Africa: DZ, ET, TN. Southwestern Asia: CY, IL, TR.

**Identification**—**Keys, Descriptions:** Ducke (1900); Tkalcu (1974b: 332).

– subspecies *fossoria* PÉREZ, 1890

1890 *Osmia fossoria* PÉREZ, in: Fertou, Actes de la Société Linnéenne de Bordeaux, 44: 201. **Type material:** Lectotype ♀, by designation of Tkalcu (1974b: 333), “Alger” [Algeria], MNHN (Paris).—Combination *Hoplitis (Allosmia) sybarita fossoria* (PÉREZ) in Tkalcu (1974b: 333).

1899 *Osmia duckei* FRIESE, Entomologische Nachrichten (Berlin), 25: 27. **Type material:** Syntypes ♂♂, “Alger” [Algeria].—Synonymy in Friese (1911b: 86).

**Distribution**—Northern Africa: DZ, ET, TN.

**Identification**—**Keys, Descriptions:** Tkalcu (1974b: 333).



– subspecies *sybarita* SMITH, 1853

1853 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: AL, GR. **Southwestern Asia**: CY, IL, TR.

**Identification**—**Keys, Descriptions**: Tkalcu (1974b: 333).

*Osmia* subgenus *Erythrosmia* SCHMIEDEKNECHT

Palearctic species: 4

*andrenoides* SPINOLA, 1808

*Osmia* (*Erythrosmia*)

1808 *Osmia andrenoides* SPINOLA, Insectorum Liguria, vol. 2, p. 61. **Type material**: Syntypes ♂(♂), ♀(♀), “habitat prope Genuam, in loco dicto Marassi” [Italy]. **Type species** of *Erythrosmia* SCHMIEDEKNECHT.—Combination *Pseudosmia andrenoides* (SPINOLA) in Radoszkowski (1874: 158). Combination *Osmia* (*Osmia*) *andrenoides* SPINOLA in Friese (1911b: 108). Combination *Anthocopa* (*Erythrosmia*) *andrenoides* (SPINOLA) in Tkalcu (1974b: 328).

**Distribution**—Europe: A, AL, B, CH, CZ, D, E, F, GE, GR, GR(Cr), H, HR, I, I(Sa), I(Si), P, RUS, SCG, SK, SLO, UA. **Northern Africa**: DZ, MA, TN. **Southwestern Asia**: CY, IL, TR.

**Identification**—**Keys, Descriptions**: Alfken (1914: 200); Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Duce (1900); Ferton (1905: 5657); Medvedeva (1978); Móczár (1958); Popov (1954: 444); Radoszkowski (1874c: 158); Scheuchl (1996); Schmiedeknecht (1885–1886).

*erythrogastra* FERTON, 1905

*Osmia* (*Erythrosmia*)

1905 *Osmia erythrogastra* FERTON, Annales de la Société Entomologique de France, 74: 56. **Type material**: Syntypes ♂♂, ♀♀, “Bonifacio, S<sup>ia</sup> Manza (terrain granitique)” [France: Corsica], MNHN (Paris).—Combination *Anthocopa* (*Erythrosmia*) *erythrogastra* (FERTON) in Zanden (1988b: 119).

**Distribution**—Europe: F(Co), GR, I, I(Sa), SCG. **Southwestern Asia**: CY, TR.

**Identification**—**Keys, Descriptions**: Alfken (1914: 200); Benoist (1931).

*relicta* (POPOV, 1954)

*Osmia* (*Erythrosmia*)

1954 *Anthocopa* (*Erythrosmia*) *relicta* POPOV, Zoologicheskii Zhurnal (Moscow), 33: 448. **Type material**: Syntypes ♀♀, “River Tuyuk, Kyrgyz Ridge” [Kyrgyzstan], ZIN (St. Petersburg).

**Distribution**—**Northern Asia**: KS.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*sparsipuncta* ALFKEN, 1914

*Osmia* (*Erythrosmia*)

1914 *Osmia sparsipuncta* ALFKEN, Mémoires de la Société Entomologique Belgique, 22: 200. **Type material**: Holo-

type ♀, “Alger, Maison Carrée” [Algeria], ZMHB (Berlin); paratypes ♂♂, ♀♀.—Combination *Anthocopa* (*Erythrosmia*) *sparsipuncta* (ALFKEN) in Zanden (1988b: 119).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*Osmia* subgenus ***Helicosmia*** THOMSON

Palearctic species: 72

***adae*** BINGHAM, 1897

*Osmia* (*Helicosmia*)

1897 *Osmia adae* BINGHAM, The Fauna of British India including Ceylon and Burma. Hymenoptera, vol. 1: p. 468. Type material: ♂(♂), “Kumaun, N.W. Himalayas” [India].—Combination *Osmia* (*Chalcosmia*) *adae* BINGHAM in Zanden (1988b: 124).

**Distribution**—Southwestern Asia: PAK. **Extralimital**: Oriental (India, Nepal).

**Identification**—Keys, Descriptions: Engel (2006: 126127).

***aeruginosa*** WARNCKE, 1988

*Osmia* (*Helicosmia*)

1988 *Osmia* (*Helicosmia*) ***aeruginosa*** WARNCKE, Entomofauna (Ansfelden), 9: 26. Type material: Holotype ♀, “südl. Vargös im Mt. Sat in 1700 m/Hakkari” [Turkey], OLML (Linz); paratypes ♀♀.

**Distribution**— Europe: GR. **Southwestern Asia**: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

***alaiensis*** ZANDEN, 1994

*Osmia* (*Helicosmia*)

1994 *Osmia* (*Chalcosmia*) ***alaiensis*** ZANDEN, Reichenbachia (Dresden), 30: 168. Type material: Holotype ♀, “Pamir-Alai, Ansob, 3000–3200 m” [Tajikistan], MTD (Dresden); paratypes ♂♂.

**Distribution**—Northern Asia: TJ; Central Asian Ranges.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

***alfkeni*** DUCKE, 1899

*Osmia* (*Helicosmia*)

1899 *Osmia* (*Melanosmia*) ***alfkenii*** DUCKE, Entomologische Nachrichten (Berlin), 25: 211. Type material: Holotype ♀, “Biscra” [Algeria], ZMHB (Berlin).

1942 *Osmia crinita* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 3: 214. Type material: Holotype ♀, “Wadi Um Assad” [Egypt], ZMHB (Berlin); paratypes ♂, ♀♀.—Combination *Osmia* (*Chalcosmia*) *crinita* ALFKEN in Zanden (1988b: 124).—Synonymy in Warncke (1988a: 9).

**Distribution**—Europe: I(Sa). **Northern Africa**: DZ, ET, MA, TN. **Southwestern Asia**: IL, JOR.

**Identification**—Keys, Descriptions: Duce (1900); Zanden (1989: 76).

*aquila* WARNCKE, 1988*Osmia (Helicosmia)*

- 1988 *Osmia (Helicosmia) aquila* WARNCKE, Entomofauna (Ansfelden), 9: 13. Type material: Holotype ♂, “Madensehir/Konya, 1300 m” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: IL, JOR, TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*atroalba* MORAWITZ, 1875*Osmia (Helicosmia)*

- 1875 *Osmia atro-alba* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 90. Type material: Syntypes ♀♀, “prope Katty-kurgan” [Turkestan], ZIN (St. Petersburg), ZMUM (Moscow).—Combination *Osmia (Chalcosmia) atroalba* MORAWITZ in Zanden (1988b: 124).

**Distribution**—Northern Asia: Turkestan.

**Identification**—**Keys, Descriptions**: Duce (1900); Tkalcu (1969a: 338–339). **Note**: Male unknown.

*aurulenta* (PANZER, 1799)*Osmia (Helicosmia)*

- 1799 *Apis aurulenta* PANZER, Faunae Insectorum Germanicae, 63: 22. Type material: ♀(♀), “Habitat Viennae Austr.” [Austria]. Type species of *Helicosmia* THOMSON.—Combination *Osmia tunensis aurulenta* (PANZER) in Warncke (1988a: 10), rejected by Schwarz *et al.* (1996: 121).
- 1801 *Apis haematoda* PANZER, Faunae Insectorum Germanicae, 81: 20. Type material: ♂(♂), [Germany].—Synonymy in Tkalcu (1974b: 337).
- 1841 *Osmia marginella* LEPELETIER, Histoire Naturelle des Insectes, Hyménoptères, vol. 2, p. 320 [not seen]. Type material: Lectotype ♀, by designation of Tkalcu (1975a: 176), “Département des Landes, environs de Paris” [France], MNHN (Paris).—Synonymy in Tkalcu (1974b: 337).

**Distribution**—Europe: A, AL, B, CH, CZ, D, DK, E, E(Ba), F, FL, GB, GE, GR, H, I, I(Sa), IRL, L, LT, MK, N, NL, P, PL, RO, RUS(NR), S, SK, SLO, UA. **Southwestern Asia**: IR, RL, TR.

**Identification**—**Keys, Descriptions**: Alfken (1914: 198–199); Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Duce (1900); Móczár (1958); Radoszkowski (1887a: 291); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1970: 10); Warncke (1988a).

*breviata* WARNCKE, 1988*Osmia (Helicosmia)*

- 1988 *Osmia (Helicosmia) breviata* WARNCKE, Entomofauna (Ansfelden), 9: 14. Type material: Holotype ♀, “Madensehir/Konya” [Turkey], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*brevipes* ZANDEN, 1994*Osmia (Helicosmia)*

- 1994 *Osmia (Chalcosmia) brevipipes* ZANDEN, Linzer Biologische Beiträge, 26: 1115. Type material: Holotype ♂, “Sivas, Gürün” [Turkey], Schwarz Collection (Ansfelden); paratypes ♂, ♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*caerulescens* (LINNAEUS, 1758)*Osmia (Helicosmia)*

- 1758 *Apis caerulescens* LINNAEUS, Systema Naturae, 10<sup>th</sup> edn, vol. 1, p. 576. Type material: Lectotype ♀, by designation of Day (1979: 54), “in Europa” [Sweden], LSUK (London).—Combination *Osmia (Chalcosmia) caerulescens* (LINNAEUS) in Friese (1911b: 116).
- 1761 *Apis aenea* LINNAEUS, Fauna Suecica, 2<sup>nd</sup> edn, p. 421. Type material: Holotype ♂, [Sweden], LSUK (London).—Synonymy in Warncke (1986: 73).
- 1776 *Apis superbus* HARRIS, An exposition of English insects, with curious observations and remarks, p. 164. Type material: ♀(♀), [United Kingdom].—Synonymy in Warncke (1986: 112).
- 1783 *Apis muraria* RETZIUS, Caroli De Geer genera et species Insectorum [...], p. 60 [not seen]. Type material: Syn-types ♂(♂), ♀(♀), [France].—Synonymy in Warncke (1986: 120).
- 1785 *Apis cuprea* GEOFFROY, in: Fourcroy, Entomologia Parisiensis, vol. 2, p. 447. Type material: ♀(♀), [France].—Synonymy in Warncke (1986: 95).
- 1802 *Andrena cupraria* WALCKENAER, Faune Parisienne, vol. 2, p. 107. Type material: ♂(♂), [France].—Synonymy in Warncke (1988a: 20).
- 1864 *Osmia purpurea* CRESSON, Proceedings of the Entomological Society of Philadelphia, 3: 27. Type material: Lectotype ♀, [USA], Philadelphia.—Synonymy in Warncke (1988a: 20).
- 1864 *Osmia rustica* CRESSON, Proceedings of the Entomological Society of Philadelphia, 3: 37. NOMEN PRAEOCCUPATUM [not *Apis rustica* GEOFFROY, 1785]. Type material: Lectotype ♂, [USA], Philadelphia.—Synonymy in Warncke (1988a: 20).

**Distribution**—Europe: A, AL, ARM, AZ, B, BG, CH, CZ, D, DK, E, E(Ba), F, FL, FIN, GB, GE, GR, H, HR, I, I(Sa), I(Si), L, LT, LV, MK, NL, P, PL, RUS, S, SK, SLO, UA. **Northern Africa**: DZ, ET, MA, TN. **Northern Asia**: KS, RC, TJ. **Southwestern Asia**: CY, IR, JOR, SYR, TR. **Extralimital**: Nearctic (Canada, USA) [Potentially introduced], Oriental (India).

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Radoszkowski (1887a: 288–289); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1975c: 299, 1978: 164–167); Wu (2006).

— subspecies *caerulescens* (LINNAEUS, 1758)

- 1758 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: A, AL, ARM, AZ, B, BG, CH, CZ, D, DK, E, E(Ba), F, FL, FIN, GB, GE, GR, H, HR, I, I(Sa), I(Si), L, LV, MK, NL, P, PL, RUS, S, SK, SLO, UA. **Northern Asia**: KS, RC, TJ. **Southwestern Asia**: CY, IR, JOR, SYR, TR. **Extralimital**: Nearctic (Canada, USA) [Potentially introduced], Oriental (India).

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *cyanea* (FABRICIUS, 1793)

1793 *Andrena cyanea* FABRICIUS, Entomologia Systematica, vol. 2, p. 309. **Type material:** Lectotype ♀, by designation of Tkalcu (1970: 8), “Habitat in Barbariae” [Algeria], ZMUC (Copenhagen).—Combination *Osmia (Chalcosmia) caerulescens cyanea* (FABRICIUS) in Tkalcu (1970: 8).

**Distribution—Northern Africa:** DZ, ET, MA, TN.

**Identification—Keys, Descriptions:** Tkalcu (1970: 8).

*carinoclypearis* WU, 1985

*Osmia (Helicosmia)*

1985 *Osmia carinoclypearis* WU, Biology of the Tianshan Tumor Region, p. 146 [not seen]. **Type material:** Holotype ♀, “Tianshan Tumor Region, Xingjiang” [China], IZCAS (Beijing).

**Distribution—Northern Asia:** RC(NW).

**Identification—Keys, Descriptions:** Wu (2006). **Note:** Male unknown.

*chinensis* MORAWITZ, 1890

*Osmia (Helicosmia)*

1890 *Osmia chinensis* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 24: 371. **Type material:** Lectotype ♂, by designation of Tkalcu (1995: 143), “Kansu Rtygry” [China], ZIN (St. Petersburg).—Combination *Osmia (Chalcosmia) chinensis* MORAWITZ in Zanden (1988b: 124).

**Distribution—Northern Asia:** RC.

**Identification—Keys, Descriptions:** Tkalcu (1995: 143–145); Wu (2006). **Note:** Female unknown.

*chrysaetos* WARNCKE, 1988

*Osmia (Helicosmia)*

1988 *Osmia (Helicosmia) chrysaetos* WARNCKE, Entomofauna (Ansfelden), 9: 15. **Type material:** Holotype ♀, “S Vargös im Mt. Sat in 1800 m/Hakkari” [Turkey], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution—Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*cinctella* DOURS, 1873

*Osmia (Helicosmia)*

1873 *Osmia cinctella* DOURS, Revue et Magasin de Zoologie Pure et Appliqué, ser. 3, 1: 296. **Type material:** Syntypes ♂(♂), ♀(♀) “Iles de l’Archipel grec” [Greece], “Algérie” [Algeria], presumed lost (Tkalcu, 1977b: 232; Zanden 1990: 52).—Combination *Osmia (Helicosmia) sogdiana cinctella* DOURS in Warncke (1988a: 25). Combination *Osmia (Chalcosmia) cinctella* DOURS in Zanden (1988b: 124).

**Distribution—Europe:** GR, GR(Cr); E. **Northern Africa:** DZ.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*cinerea* WARNCKE, 1988

*Osmia (Helicosmia)*

1988 *Osmia (Helicosmia) cinerea* WARNCKE, Entomofauna (Ansfelden), 9: 17. **Type material:** Holotype ♀, “25 km NW Yüksekova in 2200 m/Hakkari” [Turkey], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution—Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*clypearis* MORAWITZ, 1871

*Osmia (Helicosmia)*

1871 *Osmia clypearis* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 8: 204. **Type material:** Lectotype ♀, by designation of Zanden (1986: 68), “Korfu” [Greece], ZIN (St. Petersburg).—Combination *Osmia (Chalcosmia) clypearis* MORAWITZ in Zanden (1988b: 124).

1979 *Osmia (Chalcosmia) macedonica* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 76: 323. **Type material:** Holotype ♀, “Matka, Ortschaft am gleichnamigen See, ca. 10 km sww. von Skopje” [Macedonia], RMNH (Leiden); paratype ♀.—Synonymy in Zanden (1986: 68).

**Distribution—Europe:** BG, E, GR, MK; Caucasus. **Southwestern Asia:** IL, JOR, SYR, TR.

**Identification—Keys, Descriptions:** Schmiedeknecht (1885–1886).

– subspecies *acuta* WARNCKE, 1988

1988 *Osmia (Helicosmia) clypearis acuta* WARNCKE, Entomofauna (Ansfelden), 9: 31. **Type material:** Holotype ♀, “20 km W Sarikamis/Kars in 2150 m” [Turkey], OLML (Linz); paratypes ♂, ♀♀.

**Distribution—Southwestern Asia:** IL, JOR, SYR, TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *clypearis* MORAWITZ, 1871

1871 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** BG, E, GR, MK; Caucasus.

**Identification—Keys, Descriptions:** Warncke (1988a). **Note:** Male unknown.

*concovoclypearis* WU, 1985

*Osmia (Helicosmia)*

1985 *Osmia concovoclypearis* WU, Biology of the Tianshan Tumor Region, p. 146 [not seen]. **Type material:** “Tianshan Tumor Region, Xingjiang” [China], IZCAS (Beijing).

**Distribution—Northern Asia:** RC(NW).

**Identification—Keys, Descriptions:** Wu (2006). **Note:** Male unknown.

*cyanescens* MORAWITZ, 1875

*Osmia (Helicosmia)*

- 1875 *Osmia cyanescens* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 85. **Type material:** Syntypes ♂(♂), ♀(♀), “in valle Sarafschan” [Tajikistan].—Combination *Osmia (Chalcosmia) cyanescens* MORAWITZ in Zanden (1988b: 124).

**Distribution—Europe:** RUS. **Northern Asia:** KS, TJ.

**Identification—Keys, Descriptions:** Ducke (1900).

*damascena* PÉREZ, 1911

*Osmia (Helicosmia)*

- 1911 *Osmia Damascena* PÉREZ, Bulletin de la Société des Amis de Sciences Naturelles de Rouen, 47: 78. **Type material:** Syntypes ♂(♂), ♀(♀), “Région verdoyante de Damas” [Syria], MNHN (Paris).—Combination *Osmia (Chalcosmia) damascena* PÉREZ in Zanden (1988b: 124).

**Distribution—Southwestern Asia:** SYR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*dimidiata* MORAWITZ, 1870

*Osmia (Helicosmia)*

- 1870 *Osmia dimidiata* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 7: 316. **Type material:** ♀(♀), “Hab. in Caucaso” [Caucasus].—Combination *Osmia (Chalcosmia) dimidiata* MORAWITZ in Tkalcu (1974b: 336).

- 1874 *Pseudosmia Taurica* RADOSZKOWSKI, Bulletin de la Société Impériale des Naturalistes de Moscou, 48: 157. **Type material:** Syntypes ♂(♂), ♀(♀), “Crimée (Salguir)” [Ukraine].—Combination *Osmia taurica* (RADOSZKOWSKI) in Dalla Torre (1896: 412). Combination *Hoplitis (Pseudosmia) taurica* (RADOSZKOWSKI) in Zanden (1988b: 119).—Synonymy with ♀ of *Osmia dimidiata* MORAWITZ and with ♂ of *Osmia vidua* GERSTAECKER in Friese (1909: 126).

- 1887 *Osmia Taurica* RADOSZKOWSKI, Horae Societatis Entomologicae Rossicae (St. Petersburg), 21: 285. NOMEN PRAEOCCUPATUM [not *Pseudosmia taurica* RADOSZKOWSKI, 1874]. **Type material:** Holotype ♀, “Tauria” [Ukraine], ZMHB (Berlin).

- 1899 *Osmia rossica* FRIESE, Entomologische Nachrichten (Berlin), 25: 64. NOMEN NOVUM with same type specimen for preoccupied *Osmia taurica* RADOSZKOWSKI, 1887 [not *Pseudosmia taurica* RADOSZKOWSKI, 1874].—Combination *Osmia (Chalcosmia) dimidiata rossica* FRIESE in Tkalcu (1975c: 308).—Synonymy in Warncke (1988a: 34).

**Distribution—Europe:** AL, BG, E, F, GR, GR(Cr), I, I(Sa), I(Si), MK, RUS(SR), UA; Caucasus. **Northern Asia:** TM. **Southwestern Asia:** CY, IL, IR, RL, TR.

**Identification—Keys, Descriptions:** Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Schmiedeknecht (1885–1886); Tkalcu (1975c, 1979: 323–324).



– subspecies *assomatosana* LE GOFF, 2005

2005 *Osmia (Helicosmia) dimidiata assomatosana* LE GOFF, Bulletin de la Société Entomologique de France, 110: 437. Type material: Holotype ♀, “Assomatos” [Greece: Crete], MNHN (Paris); paratypes ♀♀.

**Distribution—Europe:** GR(Cr).

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

– subspecies *dimidiata* MORAWITZ, 1870

1870 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** AL, BG, E, F, GR, I, I(Sa), I(Si), MK, RUS(SR), UA; Caucasus. **Northern Asia:** TM. **Southwestern Asia:** CY, IL, IR, RL, TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*diomedia* WARNCKE, 1988

*Osmia (Helicosmia)*

1988 *Osmia (Helicosmia) diomedia* WARNCKE, Entomofauna (Ansfelden), 9: 11. Type material: Holotype ♀, “südl. Beytüssebap in 1300 m/Hakkari” [Turkey], OLML (Linz); paratype ♂.

**Distribution—Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*dives* MOCSARY, 1877

*Osmia (Helicosmia)*

1877 *Osmia dives* MOCSARY, Természetrázi Füzetek, 1: 232. Type material: ♀(♀), [Hungary].—Combination *Osmia (Helicosmia) sogdiana dives* MOCSARY in Warncke (1988a: 24). Combination *Osmia (Chalcosmia) dives* MOCSARY in Zanden (1988b: 124).

1890 *Osmia Medanae* MAGRETTI, Annali del Museo Civico di Storia Naturale di Genova, 9: 541. Type material: Holotype ♀, “dintorni di Damasco” [Syria].—Combination *Osmia (Chalcosmia) medanae* MAGRETTI in Zanden (1988b: 125).—Synonymy in Warncke (1988a: 24).

1902 *Osmia subintegra* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 65. Type material: Lectotype ♂, by designation of Warncke (1988a: 24), “Ramleh” [Palestine], MNHN (Paris).—Combination *Osmia (Chalcosmia) subintegra* PÉREZ in Zanden (1988b: 125).—Synonymy in Warncke (1988a: 24).

1934 *Osmia hierosolomita* BENOIST, Bulletin de la Société Entomologique de France, 39: 160. Type material: Holotype ♂, “Asie mineure: Jérusalem” [Israel], MNHN (Paris).—Synonymy with *Osmia sogdiana* MORAWITZ in in Tkalcu (1969a: 335) and in Zanden (1985: 67). Synonymy with *Osmia sogdiana dives* MOCSARY in Warncke (1988a: 24).

**Distribution—Europe:** GR, GR(Cr), H. **Northern Africa:** ET?. **Southwestern Asia:** CY, IL, JOR, SYR, TR.

**Identification—Keys, Descriptions:** Ducke (1900); Móczár (1958); Schmiedeknecht (1885–1886); Tkalcu (1975a: 184); Zanden (1983: 134).

*dlaboliae* TKALCU, 1978*Osmia (Helicosmia)*

- 1978 *Osmia (Diceratosmia) dlaboliae* TKALCU, Casopis Slezského Muzea Opava (A), 27: 162. Type material: Holotype ♀, “C. Anat. Darende, 1250 m” [Turkey], NMPC (Prague).—Combination *Osmia (Caerulosmia) dlaboliae* TKALCU in Zanden (1988b: 123). Combination *Osmia (Helicosmia) dlaboliae* TKALCU in Warncke (1992b: 917).

**Distribution**—Europe: GR?. **Southwestern Asia**: IL?, SYR?, TR.

**Identification**—**Keys, Descriptions**: Zanden (1991a). **Note**: Male unknown.

*dusmeti* ZANDEN, 1998*Osmia (Helicosmia)*

- 1998 *Osmia (Chalcosmia) dusmeti* ZANDEN, Linzer Biologische Beiträge, 30: 525. Type material: Holotype ♀, “Canizal” [Spain], BMNH (London).

**Distribution**—Europe: E.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*fasciata* LATREILLE, 1811*Osmia (Helicosmia)*

- 1811 *Osmia fasciata* LATREILLE, Encyclopédie Méthodique, Histoire Naturelle, Insectes, vol. 8, p. 583. Type material: Holotype ♀, “Arabie” [Arabia], MNHN (Paris).—Combination *Osmia (Chalcosmia) fasciata* LATREILLE in Zanden (1988b: 124).
- 1904 *Osmia (Acanthosmia) sita* NURSE, Journal of the Bombay Natural History Society, 15: 574. Type material: Lectotype ♀, by designation of Tkalcu (1969a: 337), “Quetta” [Pakistan], BMNH (London).—Combination *Osmia (Chalcosmia) sita* NURSE in Tkalcu (1969a: 336).—Synonymy in Warncke (1988a: 26).
- 1930 *Osmia kuznetzovi* COCKERELL, The Entomologist (London), 63: 84. Type material: ♀(♀), “Ak-Tasch Mountains, 50 kilom. N.E. of Tashkent” [Uzbekistan], BMNH (London).—Combination *Osmia (Chalcosmia) kuznetzovi* COCKERELL in Zanden (1988b: 124).—Synonymy in Warncke (1992b: 918).
- 1935 *Osmia bucharica* POPOV, Trudy Tajikskoy Bazy Akademii Nauk SSSR, 5: 390. Type material: Syntypes ♂(♂), ♀(♀), “Kulyab and Samarkand” [Tajikistan and Uzbekistan], ZIN (St. Petersburg).—Synonymy with *Osmia sita* NURSE in Tkalcu (1969a: 336). Synonymy in Warncke (1988a: 26).

**Distribution**—Northern Asia: TJ, UZ. **Southwestern Asia**: AFG, IL, JOR, PAK, SYR; Arabia; FR. **Extralimital**: Oriental (India).

**Identification**—**Keys, Descriptions**: Benoist (1969: 243); Tkalcu (1969a: 338); Warncke (1988a).

*frieseana* DUCKE, 1899*Osmia (Helicosmia)*

- 1899 *Osmia frieseana* DUCKE, Entomologische Nachrichten (Berlin), 25: 213. Type material: Lectotype ♂, by designation of Tkalcu (1975a: 184), “Algier” [Algeria], ZMHB (Berlin).—Combination *Osmia (Chalcosmia) frieseana* DUCKE in Tkalcu (1975a: 184).—Synonymy with *Osmia sogdiana heteracantha* PÉREZ in Warncke (1988a: 25), rejected by Zanden (1996b: 884).

**Distribution**—Europe: E, M, I (Sa). **Northern Africa**: DZ, ET?, LAR, MA, TN.

**Identification**—**Keys, Descriptions**: Ducke (1900); Tkalcu (1975a: 184); Zanden (1983: 134).

*frunseensis* WARNCKE, 1992

*Osmia (Helicosmia)*

- 1992 *Osmia (Helicosmia) frunseensis* WARNCKE, Linzer Biologische Beiträge, 24: 918. Type material: Holotype ♀, “Alla Arca, 50 km S Frunse” [Kyrgyzstan], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Northern Asia: KS, TJ.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*gutturalis* WARNCKE, 1988

*Osmia (Helicosmia)*

- 1988 *Osmia (Helicosmia) gutturalis* WARNCKE, Entomofauna (Ansfelden), 9: 21. Type material: Holotype ♀, “südl. Vargös im Mt. Sat in 2000 m/Hakkari” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: IL, IR, TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*haemorrhoea* MORAWITZ, 1886

*Osmia (Helicosmia)*

- 1886 *Osmia haemorrhoea* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 20: 216. Type material: Holotype ♂, “Keria-Gebirge 9000” [China], ZIN (St. Petersburg).—Combination *Osmia (Chalcosmia) haemorrhoea* MORAWITZ in Zanden (1988b: 124).

**Distribution**—Northern Asia: RC(NW), RC(WP). **Extralimital**: Oriental (India).

**Identification**—**Keys, Descriptions**: Ducke (1900); Tkalcu (1995: 142–143); Wu (2006). **Note**: Female unknown.

*heliaca* WARNCKE, 1988

*Osmia (Helicosmia)*

- 1988 *Osmia (Helicosmia) heliaca* WARNCKE, Entomofauna (Ansfelden), 9: 16. Type material: Holotype ♀, “südl. Vargös im Mt. Sat in 2000 m/Hakkari” [Turkey], OLML (Linz).

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*heteracantha* PÉREZ, 1896

*Osmia (Helicosmia)*

- 1896 *Osmia heteracantha* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 12. Type material: Lectotype ♂, by designation of Zanden (1996b: 884), “Téniet” [Algeria], MNHN (Paris).—Combination *Osmia (Helicosmia) sogdiana heteracantha* PÉREZ in Warncke (1988a: 25), rejected by Zanden (1996b: 884). Combination *Osmia (Chalcosmia) heteracantha* PÉREZ in Zanden (1988b: 124).

- 1988 *Osmia ardeola* WARNCKE, Entomofauna (Ansfelden), 9: 19 [as *Osmia ardeola*, rejected by Blank and Kraus (1994: 732)]. Type material: Holotype ♀, “Alcoutin/Algarve” [Portugal], OLML (Linz); paratypes ♀♀.—Synonymy in Zanden (1996b: 884).

**Distribution**—Europe: E, P. Northern Africa: DZ, TN.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*indigotea* MORAWITZ, 1875

*Osmia (Helicosmia)*

- 1875 *Osmia indigotea* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 86. Type material: ♂(♂), “prope Samarkand” [Uzbekistan].—Combination *Osmia (Chalcosmia) indigotea* MORAWITZ in Tkalcu (1969a: 334).

**Distribution**—Northern Asia: TM, UZ. Southwestern Asia: AFG, IRQ.

**Identification**—Keys, Descriptions: Ducke (1900); Engel (2006: 126–127); Morawitz (1880: 382); Radoszkowski (1887a: 291); Tkalcu (1969a: 334–35); Warncke (1992b: 918).

*jacoti* COCKERELL, 1929

*Osmia (Helicosmia)*

- 1929 *Osmia (Chalcosmia) jacoti* COCKERELL, The Entomologist (London), 62: 205. Type material: Syntypes ♀♀, “Tsinan” [China], USNM (Washington).

- 1973 *Osmia (Chalcosmia) imaii* HIRASHIMA, Journal of the Faculty of Agriculture, Kyushu University, 18: 64. Type material: Holotype ♀, “Himeji City, Hyogo Pref.” [Japan], KUEC (Fukuoka); paratypes ♂♂, ♀♀.—Synonymy in Wu (2006: 60).

**Distribution**—Northern Asia: J, RC, RC(NO), ROK.

**Identification**—Keys, Descriptions: Wu (2006).

*kirgisiana* ZANDEN, 1994

*Osmia (Helicosmia)*

- 1994 *Osmia (Chalcosmia) kirgisiana* ZANDEN, Linzer Biologische Beiträge, 26: 1120. Type material: Holotype ♀, “Issyk-Kub, M. Azhargyvuak” [Kyrgyzstan], ZMUM (Moscow); paratypes ♀♀.

**Distribution**—Northern Asia: KS, KZ.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*labialis* PÉREZ, 1879

*Osmia (Helicosmia)*

- 1879 *Osmia labialis* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 182. Type material: Lectotype ♀, by designation of Tkalcu (1975c: 311), “Hautes et Basses-Pyrénées” [France], MNHN (Paris).—Combination *Osmia (Chalcosmia) labialis* PÉREZ in Tkalcu (1975c: 311).—Synonymy with *Osmia leaiana* (KIRBY) in Benoist (1931: 29), rejected by Tkalcu (1975c: 311). Synonymy with *Osmia melanogaster* SPINOLA in Warncke (1986: 74) and in Schwarz *et al.* (1996: 124), rejected by Rasmont *et al.* (1995: 51).

**Distribution**—Europe: A, CH, E, F, FL, I, MK, P, SK. Northern Africa: TN.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Schmiedeknecht (1885–1886); Tkalcu (1975c).

— subspecies *labialis* PÉREZ, 1879

- 1879 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: A, CH, E, F, FL, I, P. Northern Africa: TN.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *tornensis* TKALCU, 1975

- 1975 *Osmia (Chalcosmia) labialis tornensis* TKALCU, Vestnik Československe Spolecnosti Zoologicke, 39: 312. Type material: Holotype ♀, “Slowakischer Karst, Turna n. Bodvou, in der Nähe von ‘Sedičko’, ca. 400 m” [Slovakia], Tkalcu Collection (Praha); paratypes ♂♂, ♀♀.—Synonymy with *Osmia melanogaster* SPINOLA in Warncke (1988a: 29).

**Distribution—Europe:** A, MK, SK.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*laticella* ZANDEN, 1986

*Osmia (Helicosmia)*

- 1899 *Osmia laticeps* FRIESE, Entomologische Nachrichten (Berlin), 25: 64. NOMEN PRAEOCCUPATUM [not *Osmia laticeps* THOMSON, 1872]. Type material: Holotype ♀, “Tourrah” [Egypt], ZMHB (Berlin).  
1986 *Osmia (Diceratosmia) laticella* ZANDEN, Reichenbachia (Dresden), 24: 73. NOMEN NOVUM with same type specimen for preoccupied *Osmia laticeps* FRIESE, 1899 [not *Osmia laticeps* THOMSON, 1872].—Combination *Osmia (Caerulosmia) laticella* ZANDEN in Zanden (1988b: 123).

**Distribution—Northern Africa:** ET. **Southwestern Asia:** IL.

**Identification—Keys, Descriptions:** Ducke (1900); Mavromoustakis (1956a: 857); Zanden (1991a).

*latreillei* (SPINOLA, 1806)

*Osmia (Helicosmia)*

- 1806 *Megachile latreillii* SPINOLA, Insectorum Liguria, vol. 1, p. 31. Type material: Lectotype ♀, by designation of Zanden (1983: 132), [Italy], MSDB (Torino).—Combination *Osmia (Chalcosmia) latreillei* (SPINOLA) in Tkalcu (1975a: 184).  
1811 *Osmia nasidens* LATREILLE, Encyclopédie Méthodique, Histoire Naturelle, Insectes, vol. 8, p. 578. Type material: Neotype ♀, by designation of Zanden (1988a: 60), “Nizza” [France], ZIN (St. Petersburg).—Combination *Osmia (Chalcosmia) nasidens* LATREILLE in Schmiedeknecht (1885: 96).—Synonymy in Warncke (1992b: 918).  
1869 *Osmia quadricornis* KRIECHBAUMER, Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien, 19: 600. Type material: ♀ (♀), “Insel Tinos” [Greece].—Synonymy in Dalla Torre (1869: 399).  
1892 *Osmia Friesei* VERHOEFF, Entomologische Nachrichten (Berlin), 18: 289. Type material: ♂ (♂), “Spalato” [Croatia].—Synonymy in Warncke (1988a: 10).

**Distribution—Europe:** CH, E, E(Ba), F, F(Co), GR, GR(Cr), HR, I, I(Sa), I(Si), M, MK, P. **Northern Africa:** DZ, E(Ca), ET, LAR, MA, P(Ma), TN. **Southwestern Asia:** CY, IL, JOR, TR.

**Identification—Keys, Descriptions:** Amiet *et al.* (2004); Benoist (1931); Ducke (1900); Peters (1975: 54–55); Schmiedeknecht (1885–1886); Warncke (1988a); Zanden (1988a: 60, 1991c: 168–169).

– subspecies *iberoafricana* PETERS, 1975

- 1975 *Osmia latreillei iberoafricana* PETERS, Senckenbergiana Biologica (Frankfurt), 56: 49. Type material: Holotype ♀, “Almeria: Punta Entinas” [Spain], SMFD (Frankfurt); paratypes ♂♂, ♀♀.

**Distribution**—**Europe**: E, E(Ba), F(Co), I(Sa), I(Si), M, P. **Northern Africa**: DZ, E(Ca), ET, LAR, MA, P(Ma), TN. **Southwestern Asia**: CY, IL, JOR, TR.

**Identification**—**Keys, Descriptions**: Tkalcu (1975a: 184); Zanden (1983: 132).

– subspecies *latreillei* (SPINOLA, 1806)

- 1806 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—**Europe**: CH, F, F(Co), GR, GR (Cr), HR, I, I(Sa), MK. **Northern Africa**: E(Ca).

**Identification**—**Keys, Descriptions**: Peters (1975: 48–50); Tkalcu (1975a: 184).

*lazulina* BENOIST, 1928

*Osmia (Helicosmia)*

- 1928 *Osmia lazulina* BENOIST, Bulletin de la Société Entomologique de France, 1928: 108. Type material: Lectotype ♀, by designation of Tkalcu (1970: 8), “Sfax” [Tunisia], MNHN (Paris).—Combination *Osmia (Chalcosmia) lazulina* BENOIST in Tkalcu (1970: 8).

**Distribution**—**Northern Africa**: DZ, LAR, MA, TN. **Southwestern Asia**: IL.

**Identification**—**Keys, Descriptions**: Tkalcu (1970: 8–9); Warncke (1988a).

*leaiana* (Kirby, 1802)

*Osmia (Helicosmia)*

- 1785 *Apis hirta* GEOFFROY, in: Fourcroy, Entomologia Parisiensis, vol. 2, p. 444. NOMEN PRAEOCCUPATUM [not *Apis hirta* SCHRANK, 1781]. Type material: ♂(♂), [France].
- 1802 *Apis leaiana* KIRBY, Monographia Apum Angliae, vol. 2, p. 263. Type material: Lectotype ♀, by designation of Tkalcu (1975c: 309), [United Kingdom], BMNH (London).—Combination *Osmia (Chalcosmia) leaiana* (KIRBY) in Tkalcu (1975c: 309).—Synonymy with *Osmia fulviventris* (PANZER) in Dalla Torre (1896: 395). Synonymy with *Osmia ventralis* (PANZER) in Warncke (1988a: 30), rejected by Özbek and Zanden (1992a: 27) and by Schwarz *et al.* (1996: 123).
- 1853 *Osmia atra* SCHENCK, Jahrbücher des Vereins für Naturkunde im Herzogthum Nassau, 9: 182. Type material: ♀(♀), [Germany].—Synonymy in Tkalcu (1975c: 309).
- 1869 *Osmia confusa* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 6: 38. Type material: ♀(♀), [Russia], ZIN (St. Petersburg).—Combination *Osmia (Chalcosmia) confusa* MORAWITZ in Schmiedeknecht (1885: 20 [886]).—Synonymy in Tkalcu (1975c: 309).
- 1870 *Osmia Solskyi* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 7: 317. Type material: ♀(♀), [Russia].—Combination *Osmia (Chalcosmia) solskyi* MORAWITZ in Schmiedeknecht (1885: 20 [886]).—Synonymy in Tkalcu (1975c: 309).
- 1872 *Osmia truncatula* THOMSON, Skandinaviens Hymenoptera, vol. 2, p. 239. Type material: Lectotype ♀, by designation of Tkalcu (1975c: 311), “Lund” [Sweden], MZLU (Lund).—Combination *Osmia (Chalcosmia) leaiana*

*truncatula* THOMSON in Tkalcu (1975c: 311).—Synonymy with *Osmia ventralis* (PANZER) in Warncke (1988a: 30).

1879 *Osmia bidens* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 181. Type material: Syntypes ♂(♂), ♀(♀), “Hautes et Basses-Pyrénées, jusqu’à une altitude de 11 à 1200 m” [France], MNHN (Paris).—Synonymy in Tkalcu (1975c: 309).

1924 *Osmia forsi* ALFKEN, Notulae Entomologicae (Helsinki), 4: 37. Type material: Holotype ♀, “Lojo (Süd-finnland)” [Finland], ZMHB (Berlin).—Synonymy with *Osmia ventralis* (PANZER) in Peters (1970b: 196).

**Distribution**—**Europe**: A, AND, ARM, B, BG, CH, CZ, D, DK, E, F, FIN, FL, GB, GE, GR, H, I, I(Si), L, LT, LV, N, NL, MK, PL, RO, RUS, S, SK, SLO, UA. **Northern Africa**: DZ, MA, TN. **Northern Asia**: KZ. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Radoszkowski (1887a: 289–290); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1975c).

– subspecies *leaiana* (Kirby, 1802)

1802 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—**Europe**: A, AND, ARM, B, BG, CH, CZ, D, DK, E, F, FIN, FL, GB, GE, GR, H, I, I(Si), L, LV, N, NL, MK, PL, RO, RUS, S, SK, SLO, UA. **Northern Africa**: DZ, TN. **Northern Asia**: KZ. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

– subspecies *schachtii* WARNCKE, 1988

1988 *Osmia (Helicosmia) ventralis schachtii* WARNCKE, Entomofauna (Ansfelden), 9: 31. Type material: Holotype ♀, “Oukaimeden in 2500 m/Hoher Atlas” [Morocco], OLML (Linz); paratypes ♀♀.

**Distribution**—**Northern Africa**: MA.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*livida* TKALCU, 1978

*Osmia (Helicosmia)*

1978 *Osmia (Chalcosmia) livida* TKALCU, Casopis Slezskeho Muzea Opava (A), 27: 163. Type material: Holotype ♀, “Bayburt” [Turkey], EMET (Erzurum); paratypes ♂♂, ♀♀.

**Distribution**—**Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*madeirensis* ZANDEN, 1991

*Osmia (Helicosmia)*

1991 *Osmia (Chalcosmia) madeirensis* ZANDEN, Reichenbachia (Dresden), 28: 168. Type material: Holotype ♀, “Cenigel” [Portugal: Madeira]; paratypes ♂, ♀♀.

**Distribution**—**Northern Africa**: P(Ma).

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.



*maracandica* MORAWITZ, 1894

*Osmia (Helicosmia)*

- 1875 *Osmia robusta* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 90. NOMEN PRAEOCCUPATUM [not *Heriades robustus* NYLANDER, 1848]. Type material: ♀(♀), “prope Samarkand” [Uzbekistan], ZMUM (Moscow).
- 1894 *Osmia maracandica* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 28: 28. NOMEN NOVUM with same type specimen for preoccupied *Osmia robusta* MORAWITZ, 1875 [not *Heriades robustus* NYLANDER, 1848].—Combination *Osmia (Chalcosmia) maracandica* MORAWITZ in Zanden (1988b: 125).

**Distribution**—Northern Asia: UZ.

**Identification**—Keys, Descriptions: Ducke (1900). **Note**: Male unknown.

*mediana* ENGEL, 2006

*Osmia (Helicosmia)*

- 2006 *Osmia (Helicosmia) mediana* ENGEL, Acta Entomologica Slovenica, 14: 124. Type material: Holotype ♂, “Tehran Province, Karaj, ca. 1200 m” [Iran], SEMC (Lawrence); paratype ♀.

**Distribution**—Southwestern Asia: IR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*melanogaster* SPINOLA, 1808

*Osmia (Helicosmia)*

- 1808 *Osmia melanogaster* SPINOLA, Insectorum Liguriaiae, vol. 2, p. 63. Type material: Lectotype ♀, by designation of Tkalcu (1975: 314), [Italy], MSDB (Torino).—Combination *Osmia (Chalcosmia) melanogaster* SPINOLA in Tkalcu (1975c: 314). Combination *Osmia (Melanosmia) melanogaster* SPINOLA in Wu (2006: 73).
- 1872 *Osmia aterrima* MORAWITZ, Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien, 22: 357. Type material: ♀(♀), “Südtirol” [Italy].—Combination *Osmia (Chalcosmia) aterrima* MORAWITZ in Schmiedeknecht (1885: 20 [886]).—Synonymy in Tkalcu (1975c: 314).
- 1872 *Osmia carniolica* MORAWITZ, Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien, 22: 358. Type material: Holotype ♀, “Krain” [Slovenia], NMW (Wien).—Combination *Osmia (Chalcosmia) melanogaster carniolica* MORAWITZ in Zanden (1983: 134).—Synonymy in Warncke (1986: 73).
- 1876 *Osmia incerta* RADOSZKOWSKI, Horae Societatis Entomologicae Rossicae (St. Petersburg), 12: 113. Type material: Lectotype ♂, by designation of Zanden (1991b: 353), “Egypt.” [Egypt], ZMHB (Berlin).—Combination *Osmia (Chalcosmia) incerta* RADOSZKOWSKI in Zanden (1988b: 124).—Synonymy with *Osmia (Helicosmia) notata* (FABRICIUS) in Friese (1909: 126) and in Warncke (1988a: 26), rejected by Zanden (1991b: 353). Synonymy with *Osmia melanogaster* SPINOLA in Zanden (1991b: 353).

**Distribution**—Europe: A, BG, CZ, D, E, E(Ba), F, F(Co), GR, H, HR, I, I(Si), MK, RUS, SK, SLO, UA; Caucasus. **Northern Africa**: DZ, ET, LAR, MA, TN. **Northern Asia**: RC. **Southwestern Asia**: CY, IR, TR.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931, as *Osmia notata*); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1975c); Wu (2006); Zanden (1983: 134).

— subspecies *melanogaster* SPINOLA, 1808

- 1808 Automatically established nominotypical subspecific taxon (original description and type specimen are identical)

with those of the species rank taxon of the same name above).

**Distribution**—**Europe:** A, BG, CZ, D, F, F(Co), GR, H, HR, I, MK, RUS, SK, SLO, UA; **Caucasus.** **Northern Asia:** RC. **Southwestern Asia:** CY, IR, TR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *subaenea* PÉREZ, 1895

1895 *Osmia subaenea* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 11. **Type material:** Lectotype ♀, by designation of Tkalcu (1975c: 315), [Algeria], MNHN (Paris).—Combination *Osmia (Chalcosmia) subaenea* PÉREZ in Tkalcu (1975c: 315). Combination *Osmia (Helicosmia) melanogaster subaenea* PÉREZ in Warncke (1988a: 29).

**Distribution**— **Europe:** E, E(Ba), I(Si). **Northern Africa:** DZ, ET, LAR, MA, TN.

**Identification**—**Keys, Descriptions:** Tkalcu (1975a: 183, 1975c).

*microdonta* COCKERELL, 1931

*Osmia (Helicosmia)*

1931 *Osmia (Chalcosmia) microdonta* COCKERELL, American Museum Novitates, 466: 1. **Type material:** Holotype ♂, “Zô-Sè” [China], AMNH (New York).

**Distribution**—**Northern Asia:** RC(CE).

**Identification**—**Keys, Descriptions:** Wu (2006).

*milenae* TKALCU, 1992

*Osmia (Helicosmia)*

1992 *Osmia (Chalcosmia) milenae* TKALCU, Acta Societatis Zoologicae Bohemoslovacaе (Praha), 56: 225. **Type material:** Holotype ♂, “Mus” [Turkey], EMET (Erzurum); paratypes ♂♂.

**Distribution**—**Southwestern Asia:** TR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Female unknown.

*mirhiji* MAVROMOUSTAKIS, 1957

*Osmia (Helicosmia)*

1957 *Osmia (Chalcosmia) mirhiji* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 9: 858. **Type material:** Holotype ♀, “Hammana” [Lebanon], DAAN (Nicosia); paratypes ♂, ♀.—Combination *Metallinella mirhiji* (MAVROMOUSTAKIS) in Zanden (1988b: 123), rejected by Zanden (1992b: 69).—Synonymy with *Osmia brevicornis leucogastra* MORAWITZ in Warncke (1991d: 284), rejected by Zanden (1992b: 69).

**Distribution**— **Europe:** GR. **Southwestern Asia:** RL, SYR.

**Identification**—**Keys, Descriptions:** Zanden (1992b: 69).

*nasoproducta* FERTON, 1909*Osmia (Helicosmia)*

- 1909 *Osmia nasoproducta* FERTON, Annales de la Société Entomologique de France, 78: 406. Type material: Holotype ♀, “Bonifacio” [France: Corsica], MNHN (Paris).—Combination *Osmia (Aceratosmia) nasoproducta* FERTON in Zanden (1985: 69). Combination *Osmia (Chalcosmia) nasoproducta* FERTON in Zanden (1994a: 171).
- 1950 *Osmia proboscidea* BENOIST, Bulletin de la Société Entomologique de France, 55: 101. Type material: Holotype ♀, “Moyen Atlas, Ifrane” [Morocco], MNHN (Paris).—Combination *Osmia (Aceratosmia) proboscidea* BENOIST in Zanden (1985: 69).—Synonymy in Warncke (1988a: 35).

**Distribution**—Europe: E, F, F(Co), I(Sa). Northern Africa: MA.

**Identification**—Keys, Descriptions: Benoist (1931); Zanden (1985: 69). **Note**: Male unknown.

*niveata* (FABRICIUS, 1804)*Osmia (Helicosmia)*

- 1798 *Apis fulviventris* PANZER, Faunae Insectorum Germanicae, 56: 18. NOMEN PRAEOCCUPATUM [not *Apis fulviventris* SCOPOLI, 1763]. Type material: ♀(♀), [Germany]. Type species of *Chalcosmia* SCHMIEDEKNECHT.—Combination *Osmia (Chalcosmia) fulviventris* (PANZER) in Tkalcu (1974b: 336).
- 1804 *Anthophora niveata* FABRICIUS, Systema Piezatorum, p. 377. Type material: Lectotype ♀, by designation of Tkalcu (1970: 4), “Habitat in Alger Dom. de Reh binder” [Algeria], ZMUC (Copenhagen).—Combination *Osmia (Chalcosmia) fulviventris niveata* (FABRICIUS) in Tkalcu (1970: 3).
- 1809 *Osmia fulvicornis* LATREILLE, Genera Crustaceorum et Insectorum, vol. 4, p. 164. SPELLING MISTAKE in place of *Osmia fulviventris* (PANZER) in Dalla Torre (1896: 396).
- 1879 *Osmia minuta* BRAMSON, Bulletin de la Société Impériale des Naturalistes de Moscou, 54: 292. Type material: Holotype ♂, “Jekaterinoslaw” [Ukraine].—Combination *Osmia (Chalcosmia) minuta* BRAMSON in Zanden (1988b: 125).—Synonymy in Warncke (1988a: 33).
- 1886 *Osmia Sieversi* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 20: 74. Type material: ♀(♀), “Borshom” [Georgia], ZIN (St. Petersburg).—Combination *Osmia (Chalcosmia) sieversi* MORAWITZ in Tkalcu (1975c: 307). Combination *Osmia (Helicosmia) fulviventris sieversi* MORAWITZ in Warncke (1988a: 33).—Synonymy in Schwarz *et al.* (1996: 125).
- 1887 *Osmia carneiventris* DOURS, in: Radoszkowski, Horae Societatis Entomologicae Rossicae (St. Petersburg), 21: 286. Type material: Holotype ♀, “Crimée” [Ukraine], ISZP (Krakow).—Synonymy in Tkalcu (1970: 3).
- 1914 *Osmia fulviventris albiscopa* ALFKEN, Mémoires de la Société Entomologique Belgique, 22: 202. Type material: Holotype ♀, “Alger” [Algeria], ZMHB (Berlin).—Synonymy in Tkalcu (1970: 3).

**Distribution**—Europe: A, AL, AZ, B, BG, CH, CZ, D, DK, E, E(Ba), F, F(Co), GB, GE, GR, H, HR, I, I(Sa), I(Si), L, LT, MK, NL, P, P(Az), PL, RUS, S, SK, SLO, UA. Northern Africa: DZ, E(Ca), ET, LAR, MA, P(Ma), TN. Northern Asia: RC. Southwestern Asia: CY, IL, IR, RL, SYR, TR.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Peters (1975: 54, 55); Radoszkowski (1887a: 290); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1975a: 183, 1975c); Wu (2006).

*niveibarbis* PÉREZ, 1902*Osmia (Helicosmia)*

- 1902 *Osmia niveibarbis* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 64. Type material: ♂(♂),

“Médénin et Fom-Tatahouin” [Tunisia], MNHN (Paris).—Combination *Osmia (Chalcosmia) niveibarbis* PÉREZ in Zanden (1988b: 125).

- 1908 *Osmia tarfensis* SAUNDERS, Transactions of the Entomological Society London, 1908: 246. Type material: Syn-types ♀♀, “Le Tarf” [Algeria], BMNH (London).—Synonymy with *Osmia cinctella* DOURS in Tkalcu (1977b: 232), rejected by Warncke (1988a: 23). Synonymy in Warncke (1988a: 23).

**Distribution**—Europe: E, I, I(Si). Northern Africa: DZ, MA, TN.

**Identification**—Keys, Descriptions: Warncke (1988a).

*niveocincta* PÉREZ, 1879

*Osmia (Helicosmia)*

- 1879 *Osmia niveocincta* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 184. Type material: ♀(♀), “Hautes-Pyrénées” [France], MNHN (Paris).—Combination *Osmia (Helicosmia) sogdiana niveocincta* PÉREZ in Warncke (1988a: 25). Combination *Osmia (Chalcosmia) niveocincta* PÉREZ in Zanden (1985: 69).
- 1895 *Osmia violascens* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 12. Type material: Lectotype ♀, by designation of Warncke (1988a: 25), “Balearien” [Spain], MNHN (Paris).—Combination *Osmia (Chalcosmia) violascens* PÉREZ in Zanden (1988b: 125).—Synonymy in Warncke (1988a: 25).

**Distribution**—Europe: E, E(Ba), E, GR, I, I(Sa). Northern Africa: DZ, MA. Southwestern Asia: IL?.

**Identification**—Keys, Descriptions: Benoist (1931); Zanden (1985: 69). Male description by Alfken (1942: 213) belongs to another species according to Zanden (1985: 69).

*notata* (FABRICIUS, 1804)

*Osmia (Helicosmia)*

- 1804 *Anthophora notata* FABRICIUS, Systema Piezatorum, p. 376. Type material: Lectotype ♀, by designation of Tkalcu (1970: 7), “Habitat Kiliae” [Kiel, Germany by mistake, see Tkalcu (1970: 7); Algeria according to Warncke, 1988a: 25], ZMUC (Copenhagen).—Combination *Osmia (Chalcosmia) notata* (FABRICIUS) in Tkalcu (1969a: 338).
- 1874 *Pseudosmia decemsignata* RADOSZKOWSKI, Bulletin de la Société Impériale des Naturalistes de Moscou, 48: 159. Type material: Lectotype ♀, by designation of Tkalcu (1970: 7), “Sétif” [Algeria], ZMHB (Berlin).—Synonymy in Tkalcu (1970: 6).
- 1885 *Osmia (Chalcosmia) laterefasciata* COSTA, Bullettino della Società Entomologica Italiana, 17: 246. Type material: ♀(♀), “Sardegna” [Italy: Sardinia].—Synonymy in Warncke (1988a: 26).

**Distribution**—Europe: E, F(Co), I, I(Sa), I(Si), M, P, Đ, S. Northern Africa: DZ, ET, LAR, MA, TN. Southwestern Asia: IL.

**Identification**—Keys, Descriptions: Alfken (1914: 202); Ducke (1900); Friese (1893: 354); Tkalcu (1969a: 338); Warncke (1988a).

*ocularis* WARNCKE, 1988

*Osmia (Helicosmia)*

- 1988 *Osmia (Helicosmia) ocularis* WARNCKE, Entomofauna (Ansfelden), 9: 7. Type material: Holotype ♀, “Altin Daglari (= Suvvari-Halil-Pass)/Hakkari in 2600–3000 m” [Turkey], OLMML (Linz); paratypes ♂♂, ♀♀.—Combination *Osmia (Chalcosmia) ocularis* WARNCKE in Zanden (1994b: 1115).

**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*onocrotola* WARNCKE, 1988*Osmia (Helicosmia)*

- 1988 *Osmia (Helicosmia) onocrotola* WARNCKE, Entomofauna (Ansfelden), 9: 32. Type material: Holotype ♀, “20 km W Sarikamis in 2200 m/Kars” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.—Combination *Osmia (Chalcosmia) onocrotola* WARNCKE in Zanden (1996a: 389).

**Distribution**—Europe: ARM. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*orientalis* BENOIST, 1929*Osmia (Helicosmia)*

- 1929 *Osmia orientalis* BENOIST, Annales de la Société Entomologique de France, 98: 142. Type material: Holotype ♀, “Nippon moyen: Kofou” [Japan], MNHN (Paris).—Combination *Osmia (Chalcosmia) orientalis* BENOIST in Zanden (1985: 60).

**Distribution**—Northern Asia: J, RUS(FS).

**Identification**—**Keys, Descriptions**: Hirashima (1973: 66); Romankova (1984; 1995); Yasumatsu and Hirashima (1950).

*palmae* TKALCU, 2001*Osmia (Helicosmia)*

- 2001 *Osmia (Chalcosmia) palmae* TKALCU, Bulletin de la Société entomologique de Mulhouse, 57: 29. Type material: Holotype ♀, “La Palma Herradura Pesti” [Spain: Canary Islands], Tkalcu Collection (Praha); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: E(Ca).

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*palmyrae* ZANDEN, 1998*Osmia (Helicosmia)*

- 1998 *Osmia (Chalcosmia) palmyrae* ZANDEN, Linzer Biologische Beiträge, 30: 525. Type material: Holotype ♂, “Palmyra, 400 m” [Syria], RMNH (Leiden); paratype ♂.

**Distribution**—Southwestern Asia: SYR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*pennata* WARNCKE, 1988*Osmia (Helicosmia)*

- 1988 *Osmia (Helicosmia) pennata* WARNCKE, Entomofauna (Ansfelden), 9: 13. Type material: Holotype ♂, “Sertavul/Icel, 1400 m” [Turkey], OLML (Linz); paratypes ♂, ♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*peregrina* WARNCKE, 1988*Osmia (Helicosmia)*

1988 *Osmia (Helicosmia) peregrina* WARNCKE, Entomofauna (Ansfelden), 9: 12. Type material: Holotype ♂, “Birecik/Urfa” [Turkey], OLML (Linz); paratype ♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*pieli* COCKERELL, 1931*Osmia (Helicosmia)*

1931 *Osmia (Chalcosmia) pielii* COCKERELL, American Museum Novitates, 466: 2. Type material: Holotype ♀, “Zô-Sè” [China], AMNH (New York).

**Distribution**—Northern Asia: RC(CE).

**Identification**—**Keys, Descriptions**: Hirashima (1973: 66); Wu (2006).

*satoi* YASUMATSU & HIRASHIMA, 1950*Osmia (Helicosmia)*

1950 *Osmia (Cryptosmia) satoi* YASUMATSU & HIRASHIMA, Mushi (Fukuoka), 24: 14. Type material: Holotype ♀, “Suigen, Central Korea” [South Korea], KUEC (Fukuoka). Type species of *Cryptosmia* YASUMATSU & HIRASHIMA.

**Distribution**—Northern Asia: RC, ROK.

**Identification**—**Keys, Descriptions**: Wu (2006). **Note**: Male unknown.

*saxatilis* WARNCKE, 1988*Osmia (Helicosmia)*

1988 *Osmia (Helicosmia) saxatilis* WARNCKE, Entomofauna (Ansfelden), 9: 5. Type material: Holotype ♀, “20 km W Karakurt im Arastal, 1600 m” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*sexsignata* BENOIST, 1950*Osmia (Helicosmia)*

1950 *Osmia sexsignata* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 30: 44. Type material: Holotype ♀, “Goulimine” [Morocco], MNHN (Paris).—Combination *Osmia (Chalcosmia) sexsignata* BENOIST in Zanden (1985: 67).—Synonymy with *Osmia sogdiana heteracantha* PÉREZ in Warncke (1988a: 25), rejected by Zanden (1996b: 884).

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions**: Zanden (1985: 67).



*shaanxiensis* WU, 2004*Osmia (Helicosmia)*

2004 *Osmia shaanxiensis* WU, Acta Zootaxonomica Sinica, 29: 533. Type material: Holotype ♀, “Shaanxi, Hanzhong Dongzhi (33°N, 107°E)” [China], IZCAS (Beijing).

**Distribution**—Northern Asia: RC(NO).

**Identification**—Keys, Descriptions: Wu (2006). **Note**: Male unknown.

*signata* ERICHSON, 1835*Osmia (Helicosmia)*

1808 *Osmia melanippa* SPINOLA, Insectorum Liguria, vol. 2, p. 66. Type material: Syntypes ♂(♂), ♀(♀), “Habitat passim in agro Ligustico” [Italy].—Synonymy with *Osmia caerulescens* (LINNAEUS) in Rasmont *et al.* (1995: 51). Synonymy with *Osmia signata* ERICHSON in Warncke (1988a: 27). See Warncke (1988a: 28) for the validity of the name *Osmia signata* ERICHSON over *Osmia melanippa* SPINOLA.

1835 *Osmia signata* ERICHSON, in: Walzl, Reise durch Tirol, Oberitalien und Piemont nach dem südlichen Spanien (Passau), vol. 2, p. 107. Type material: Lectotype ♀, by designation of Tkalcu (1974b: 336), “Andalusien” [Spain], ZMHB (Berlin).—Combination *Osmia (Chalcosmia) signata* ERICHSON in Tkalcu (1974b: 336).

1853 *Osmia jucunda* SMITH, Catalogue of Hymenopterous Insects in the Collection of the British Museum, I: 139. Type material: Lectotype ♀, by designation of Tkalcu (1974b: 336), “Albania” [Albania], BMNH (London).—Synonymy in Tkalcu (1974b: 336).

1869 *Osmia vidua* GERSTAECKER, Entomologische Zeitung (Stettin), 30: 345. Type material: Lectotype ♀, by designation of Tkalcu (1974b: 336), “Auf Sicilien” [Italy: Sicily], ZMHB (Berlin).—Synonymy in Alfken (1935b: 175).

1873 *Osmia cincta* DOURS, Revue et Magasin de Zoologie Pure et Appliquée, ser. 3, 1: 295. Type material: Syntypes ♂(♂), ♀(♀), “Iles de l’Archipel grec” [Greece], “Algérie” [Algeria], Dours Collection, presumed destroyed (Zanden 1990: 52).—Synonymy in Warncke (1988a: 28).

1874 *Pseudosmia taurica* RADOSZKOWSKI, Bulletin de la Société Impériale des Naturalistes de Moscou, 48: 157. Type material: Syntypes ♂(♂), ♀(♀), “Crimée (Salguir)” [Ukraine].—Combination *Osmia taurica* (RADOSZKOWSKI) in Dalla Torre (1896: 412). Combination *Hoplitis (Pseudosmia) taurica* (RADOSZKOWSKI) in Zanden (1988b: 119).—Synonymy with ♀ of *Osmia dimidiata* MORAWITZ and with ♂ of *Osmia vidua* GERSTAECKER in Friese (1909: 126).

1879 *Osmia laticincta* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 177. Type material: Syntypes ♂(♂), ♀(♀), “Marseille” [France], “Aragon” [Spain], MNHN (Paris).—Combination *Osmia (Helicosmia) vidua laticincta* PÉREZ in Schmiedeknecht (1885: 28 [894]). Combination *Osmia (Chalcosmia) signata laticincta* PÉREZ in Zanden (1988b: 125).—Synonymy in Warncke (1988a: 28).

1883 *Osmia atriventris* COSTA, Atti dell’Accademia delle Scienze Fisiche e Matematiche (Napoli), ser. 2, 1: 95. NOMEN PRAEOCCUPATUM [not *Osmia atriventris* CRESSON, 1864]. Type material: Lectotype ♀, by designation of Zanden (1990: 53), “Samassi” [Italy], DEZA (Portici); paralectotype ♀.—Synonymy in Warncke (1988a: 28) and in Zanden (1988b: 125).

1895 *Osmia costaniana* DALLA TORRE & FRIESE, Entomologische Nachrichten (Berlin), 21: 70. NOMEN NOVUM with same type specimen for preoccupied *Osmia atriventris* COSTA, 1883 [not *Osmia atriventris* CRESSON, 1864].

**Distribution**—Europe: AL, E, E(Ba), F, F(Co), GR, I, I(Sa), I(Si), P, UA. **Northern Africa**: DZ, ET, MA. **Northern Asia**: RC. **Southwestern Asia**: CY, IL, IR, JOR, TR.



**Identification—Keys, Descriptions:** Benoist (1931); Ducke (1900); Radoszkowski (1887a: 287); Schmiedeknecht (1885–1886); Wu (2006).

*simplex* MORAWITZ, 1875

*Osmia (Helicosmia)*

- 1875 *Osmia simplex* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 83. **Type material:** ♀(♀), “in valle Sarafschan” [Tajikistan].—Combination *Osmia (Chalcosmia) simplex* MORAWITZ in Zanden (1988b: 125).

**Distribution—Northern Asia:** KZ, TJ, UZ.

**Identification—Keys, Descriptions:** Morawitz (1894: 26–27).

*sogdiana* MORAWITZ, 1875

*Osmia (Helicosmia)*

- 1875 *Osmia sogdiana* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 84. **Type material:** Holotype ♀, “in valle Sarafschan” [Tajikistan], ZMUM (Moscow).—Combination *Osmia (Chalcosmia) sogdiana* MORAWITZ in Tkalcu (1969a: 335).
- 1875 *Osmia prasina* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 80. **Type material:** ♂(♂), “in valle Sarafschan” [Tajikistan].—Combination *Osmia (Chalcosmia) prasina* MORAWITZ in Zanden (1988b: 125).—Synonymy in Warncke (1988a: 23).
- 1902 *Osmia Nassonowi* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 64. **Type material:** Lectotype ♀, by designation of Zanden (1985: 428), “Transcaspie” [Turkestan], MNHN (Paris).—Combination *Osmia (Chalcosmia) nassonowi* PÉREZ in Zanden (1988b: 125).—Synonymy in Warncke (1988a: 23).

**Distribution—Northern Asia:** TJ. **Southwestern Asia:** AFG, IL, SYR, TR.

**Identification—Keys, Descriptions:** Tkalcu (1969a: 336).

*sponsa* NURSE, 1904

*Osmia (Helicosmia)*

- 1904 *Osmia sponsa* NURSE, Journal of the Bombay Natural History Society, 15: 573. **Type material:** Lectotype ♀, by designation of Tkalcu (1969a: 333), “Quetta” [Pakistan], BMNH (London); paralectotype ♂.—Combination *Osmia (Diceratosmia) sponsa* NURSE in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) sponsa* NURSE in Zanden (1988b: 124).

**Distribution—Northern Asia:** TM, UZ. **Southwestern Asia:** PAK. **Extralimital:** Oriental (India).

**Identification—Keys, Descriptions:** Tkalcu (1969a: 334–335); Zanden (1991a).

*subcornuta* MORAWITZ, 1875

*Osmia (Helicosmia)*

- 1875 *Osmia subcornuta* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 79. **Type material:** Lectotype ♀, by designation of Zanden (1986: 73), “Mundanay, in valle Sarafschan” [Tajikistan], ZMUM (Moscow).—Combination *Osmia (Chalcosmia) subcornuta* MORAWITZ in Zanden (1988b: 125).
- 1891 *Osmia rubicola* FRIESE, Entomologische Nachrichten (Berlin), 17: 257. **Type material:** Lectotype ♀, by designation of Zanden (1986: 73), “Triest” [Italy], “Fiume” [Croatia], ZMHB (Berlin); paralectotype ♂.—Synonymy in Zanden (1986: 73).

**Distribution**—Europe: GR, GR(Cr), HR, I, MK. Northern Asia: TJ. Southwestern Asia: IL, JOR, RL, TR.

**Identification**—Keys, Descriptions: Duce (1900); Warncke (1988a).

*subtersa* COCKERELL, 1930

*Osmia (Helicosmia)*

1930 *Osmia (Chalcosmia) subtersa* COCKERELL, The Entomologist (London), 63: 83. **Type material**: Syntypes  $\sigma\sigma$ , “Tsinan” [China].

**Distribution**—Northern Asia: RC(NO).

**Identification**—Keys, Descriptions: Wu (2006). **Note**: Female unknown.

*torquata* WARNCKE, 1988

*Osmia (Helicosmia)*

1988 *Osmia (Helicosmia) torquata* WARNCKE, Entomofauna (Ansfelden), 9: 8. **Type material**: Holotype ♀, “Suvari-Halil-Pass in 2800 m/Hakkari” [Turkey], OLML (Linz); paratypes  $\sigma\sigma$ , ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*tunensis* (FABRICIUS, 1787)

*Osmia (Helicosmia)*

1787 *Apis tunensis* FABRICIUS, Mantissa Insectorum, vol. 1, p. 304. **Type material**: Lectotype ♀, by designation of Tkalcu (1970: 10), “Habitat in Barbariae Tunis” [Tunisia], ZMUC (Copenhagen).—Combination *Osmia (Osmia) tunensis* (FABRICIUS) in Friese (1911b: 87).

1790 *Apis tunetana* GMELIN, Caroli a Linné systema naturae [...], edn. 13, vol. 1, p. 2773 [not seen].—Synonymy in Dalla Torre (1896: 413).

1873 *Osmia pseudo-aurulenta* DOURS, Revue et Magasin de Zoologie Pure et Appliqué, ser. 3, 1: 294. **Type material**: Syntypes  $\sigma(\sigma)$ , ♀(♀), “Algérie” [Algeria], Dours Collection, presumed destroyed (Zanden 1990: 52).—Synonymy in Warncke (1988a: 9) and in Zanden (1988b: 125).

1894 *Osmia aurulenta meridionalis* GRIBODO, Bullettino della Società Entomologica Italiana, 26: 99. **Type material**: Syntypes ♀♀, “Algeria” [Algeria].—Synonymy in Warncke (1988a: 9).

1899 *Osmia dissimilis* FRIESE, Entomologische Nachrichten (Berlin), 25: 63. **Type material**: Holotype ♂, “Algerien” [Algeria], ZMHB (Berlin).—Synonymy with *Osmia pseudoaurulenta* DOURS in Alfken (1914: 198). Synonymy with *Osmia tunensis* (FABRICIUS) in Alfken (1914: 198).

**Distribution**—Europe: E, I(Si), P. Northern Africa: DZ, ET, LAR, MA, TN.

**Identification**—Keys, Descriptions: Alfken (1914: 198–199); Duce (1900); Tkalcu (1970: 10); Warncke (1988a).

*Osmia* subgenus *Hemiosmia* TKALCU

Palearctic species: 7

*anceps* PÉREZ, 1895

*Osmia (Hemiosmia)*

1895 *Osmia anceps* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 11. **Type material**: Lectotype ♀, by designation of Tkalcu (1975b: 46), “Médénin” [Tunisia], MNHN (Paris).—Combination *Osmia (Osmia) anceps*

PÉREZ in Friese (1911b: 89).—Synonymy with *Osmia unicoloris* PÉREZ in Tkalcu (1975b: 45), rejected by Haeseler (2005: 489).

- 1975 *Osmia (Hemiosmia) pulchra* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 72: 46. Type material: Holotype ♂, “Gafsa” [Tunisia], MNHN (Paris).—Synonymy in Haeseler (2005: 475).

**Distribution**— **Europe**: E. **Northern Africa**: LAR, TN; DZ, MA.

**Identification**—**Keys, Descriptions**: Haeseler (2005); Tkalcu (1975b).

*argyropyga* PÉREZ, 1879

*Osmia (Hemiosmia)*

- 1879 *Osmia argyropyga* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 175. Type material: Lectotype ♀, by designation of Tkalcu (1975b: 38), “Marseille” [France], MNHN (Paris). Type species of *Hemiosmia* TKALCU.—Combination *Osmia (Acanthosmia) argyropyga* PÉREZ in Schmiedeknecht (1885: 21 [887]). Combination *Osmia (Osmia) argyropyga* PÉREZ in Friese (1911b: 90).

- 1879 *Osmia entoprocta* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 179. Type material: Lectotype ♂, by designation of Tkalcu (1975b: 38), “Marseille” [France], MNHN (Paris).—Combination *Osmia (Helicosmia) entoprocta* PÉREZ in Schmiedeknecht (1885: 22 [888]). Combination *Osmia (Osmia) entoprocta* PÉREZ in Friese (1911b: 89).—Synonymy in Tkalcu (1975b: 38).

**Distribution**—**Europe**: E, F, I. **Northern Africa**: MA.

**Identification**—**Keys, Descriptions**: Benoist (1931); Duce (1900); Haeseler (2005); Schmiedeknecht (1885–1886); Tkalcu (1975b).

*balearica* SCHMIEDEKNECHT, 1886

*Osmia (Hemiosmia)*

- 1886 *Osmia balearica* SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 177 [1043]. Type material: Lectotype ♂, by designation of Haeseler (2005: 477), “Palma” [Spain: Balearic Islands], ZMHB (Berlin).—Combination *Osmia (Helicosmia) balearica* SCHMIEDEKNECHT in Schmiedeknecht (1885: 22 [888]). Combination *Osmia (Osmia) balearica* SCHMIEDEKNECHT in Friese (1911b: 89).

**Distribution**—**Europe**: E, E(Ba). **Northern Africa**: ET, LAR, MA, TN. **Southwestern Asia**: IL.

**Identification**—**Keys, Descriptions**: Duce (1900); Haeseler (2005); Schmiedeknecht (1885–1886); Tkalcu (1975b).

*chrysolepta* HAESELER, 2005

*Osmia (Hemiosmia)*

- 2005 *Osmia (Hemiosmia) chrysolepta* HAESELER, Entomofauna (Ansfelden), 26: 479. Type material: Holotype ♂, “Tel-Aviv” [Israel], Schwarz Collection (Ansfelden); paratypes ♂♂, ♀♀.

**Distribution**— **Northern Africa**: ET?. **Southwestern Asia**: IL, JOR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*difficilis* MORAWITZ, 1875

*Osmia (Hemiosmia)*

- 1875 *Osmia difficilis* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 91. Type material: ♀(♀), “in valle Sarafschan” [Tajikistan]. Type species of *Exosmia* TKALCU.—Combination *Osmia (Osmia) difficilis* MORAWITZ

in Friese (1911b: 87). Combination *Osmia (Exosmia) difficilis* MORAWITZ in Zanden (1988b: 125) and in Warncke (1988b: 397).

1875 *Osmia falcata* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 102. Type material: ♂(♂), “in valle Sarafschan” [Tadjikistan].—Combination *Osmia (Osmia) falcata* MORAWITZ in Friese (1911b: 90).—Synonymy in Popov (1960a: 435).

1935 *Osmia alborufa* ALFKEN, Entomologische Rundschau (Stuttgart), 52: 161. Type material: Holotype ♀, “bei Ankara in Anatolien und auf der Reise nach da” [Turkey], SMFD (Frankfurt); paratype ♀.—Synonymy in Warncke (1988b: 398).

**Distribution**—Northern Asia: RUS, TJ, UZ. Southwestern Asia: IL, TR.

**Identification**—Keys, Descriptions: Ducke (1900); Popov (1960a: 435–437); Tkalcu (1979: 321); Warncke (1988b); Zanden (1987: 73–74).

*iberica* ZANDEN, 1987

*Osmia (Hemiosmia)*

1987 *Osmia (Exosmia) iberica* ZANDEN, Reichenbachia (Dresden), 25: 73. Type material: Holotype ♂, “La Gargenta (Caceres)” [Spain], RMNH (Leiden); paratypes ♂♂, ♀♀.

1988 *Osmia (Exosmia) difficilis clanga* WARNCKE, Entomofauna (Ansfelden), 9: 398. Type material: Holotypus ♂, “Alia de las Bojes/Granada, 1200 m” [Spain], OLML (Linz).—Synonymy in Zanden (1991c: 166).

**Distribution**—Europe: E, P.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*uncicornis* PÉREZ, 1895

*Osmia (Hemiosmia)*

1895 *Osmia unicoloris* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 10. Type material: ♂(♂), no original material known.—Combination *Osmia (Osmia) unicoloris* PÉREZ in Friese (1911b: 89).

**Distribution**—Europe: E, P. Northern Africa: MA; ~~DZ~~, TN.

**Identification**—Keys, Descriptions: Haeseler (2005); Tkalcu (1975b).

*Osmia* subgenus *Melanosmia* SCHMIEDEKNECHT

Palearctic species: 20

*alticola* BENOIST, 1922

*Osmia (Melanosmia)*

1922 *Osmia alticola* BENOIST, Bulletin de la Société Entomologique de France, 91: 323. Type material: Syntypes ♂(♂), ♀(♀), “Pyénées-Orientales” [France], presumed lost (Haeseler, 1999: 455).—Synonymy with *Osmia maritima* FRIESE in Stöckert (1954: 49), rejected by Tkalcu (1983: 152).

**Distribution**—Europe: A, CH, E, F

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Benoist (1931); Haeseler (1999); Tkalcu (1983).

*disjuncta* TKALCU, 1995

*Osmia (Melanosmia)*

1995 *Osmia (Melanosmia) disjuncta* TKALCU, Entomologische Abhandlungen (Dresden), 57: 138. Type material:

Holotype ♀, “SW-Mongolei: Bulgan-gol/Jarantaj” [Mongolia], MLUH (Halle); paratypes ♂♂, ♀♀.

**Distribution**—Northern Asia: MGL.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*ephippiata* SMITH, 1879

*Osmia (Melanosmia)*

1879 *Osmia ephippiata* SMITH, Description of New Species of Hymenoptera in the Collection of the British Museum, p. 60. **Type material:** Holotype ♀, “Angara River, Siberia” [Russia], BMNH (London).

**Distribution**—Northern Asia: RUS(ES); Turkestan.

**Identification**—**Keys, Descriptions:** Tkalcu (1983: 155). **Note:** Male unknown.

*hyperborea* TKALCU, 1983

*Osmia (Melanosmia)*

1983 *Osmia (Melanosmia) hyperborea* TKALCU, Vestnik Ceskoslovenske Spolecnosti Zoologicke, 47: 156. **Type material:** Holotype ♂, “N-Schweden, Abisko” [Sweden], UZIU (Uppsala); paratype ♂.—Synonymy with *Osmia parietina* CURTIS in Schwarz *et al.* (1996: 126), rejected by Haeseler (1999: 454).

**Distribution**—Europe: D, RUS(NR), S.

**Identification**—**Keys, Descriptions:** Amiet *et al.* (2004); Haeseler (1999); Tkalcu (1995: 140).

*inermis* (ZETTERSTEDT, 1838)

*Osmia (Melanosmia)*

1838 *Anthophora inermis* ZETTERSTEDT, Insecta Lapponica, vol. 1, p. 466. **Type material:** Lectotype ♂, by designation of Tkalcu (1983: 153), “Lapponiararius; in ipso alpium Tornensium jugo (Lapponia; Gottlandia Sueciae)” [Sweden], MZLU (Lund).—Combination *Osmia (Chenosmia) inermis* (ZETTERSTEDT) in Zanden (1988b: 125).

1864 *Osmia globosa* CRESSON, Proceedings of the Entomological Society of Philadelphia, 3: 36. NOMEN PRAEOCCUPATUM [not *Apis globosa* SCOPOLI, 1763]. **Type material:** Holotype ♀, “Great Slave Lake, British America” [USA].—Synonymy in Tkalcu (1983: 153).

1869 *Osmia vulpecula* GERSTAECKER, Entomologische Zeitung (Stettin), 30: 335. **Type material:** Lectotype ♀, by designation of Tkalcu (1983: 153), “Chur” [Switzerland], ZMHB (Berlin); paralectotype ♀.—Synonymy in Dalla Torre (1896: 398).

1910 *Osmia globosiformis* COCKERELL, The Canadian Entomologist, 42: 311 [not seen]. **Type material:** Holotype ♂, [USA].—Synonymy in Tkalcu (1983: 153).

**Distribution**—Europe: A, CH, CZ, D, E, F, FIN, FL, GB, GR, HR, I, L?, LV, MK, N, PL, RUS, S. **Northern Asia:** RC. **Extralimital:** Nearctic (Canada, USA).

**Identification**—**Keys, Descriptions:** Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Müller (2002: 805); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1983); Wu (2006).

– subspecies *bulgarica* FRIESE, 1922

1922 *Osmia bulgarica* FRIESE, Zoologisches Jahrbuch (Jena), 46: 207. **Type material:** Syntypes ♀♀, “vom Pepelak, Lisec” [Macedonia], presumed lost (Tkalcu, 1983: 157).—Combination *Osmia inermis bulgarica* FRIESE in Warncke (1988c: 104).

**Distribution—Europe:** GR, I, MK.

**Identification—Keys, Descriptions:** Tkalcu (1983: 157).

– subspecies *inermis* (ZETTERSTEDT, 1838)

1838 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** A, CH, CZ, D, E, F, FIN, FL, GB, HR, I, L?, LV, N, PL, RUS, S. **Northern Asia:** RC. **Extralimital:** Nearctic (Canada, USA).

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*ishikawai* HIRASHIMA, 1973

*Osmia (Melanosmia)*

1973 *Osmia (Melanosmia) ishikawai* HIRASHIMA, Journal of the Faculty of Agriculture, Kyushu University, 18: 64. Type material: Holotype ♀, “Mt. Meakan, Hokkaido” [Japan], KUEC (Fukuoka); paratype ♀.

**Distribution—Northern Asia:** J, RC(NO).

**Identification—Keys, Descriptions:** Wu (2006). **Note:** Male unknown.

*jilinensis* WU, 2004

*Osmia (Melanosmia)*

2004 *Osmia (Melanosmia) jilinense* WU, Acta Zootaxonomica Sinica, 29: 533. Type material: Holotype ♀, “Jilin, Changbaishan (41.4°N, 128.1°E)” [China], IZCAS (Beijing).

**Distribution—Northern Asia:** RC(NE).

**Identification—Keys, Descriptions:** Wu (2006). **Note:** Male unknown.

*maritima* FRIESE, 1885

*Osmia (Melanosmia)*

1885 *Osmia maritima* FRIESE, Entomologische Nachrichten (Berlin), 11: 85. Type material: Lectotype ♀, by designation of Tkalcu (1983: 152), “Dünen der Ostsee bei Warnemünde (Rostock)” [Germany], ZMHB (Berlin).

**Distribution—Europe:** D, DK, FIN, N, NL, PL, RUS, S; **A**. **Northern Asia:** MGL, RUS(FS).

**Identification—Keys, Descriptions:** Banaszak and Romasenko (2001); Duce (1900); Haeseler (1999); Medvedeva (1978); Romankova (1984, 1995); Scheuchl (1996); Tkalcu (1983).

*melanota* MORAWITZ, 1888

*Osmia (Melanosmia)*

1888 *Osmia melanota* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 22: 243. Type material: ♀(♀), “am Atrek” [Turkestan].

**Distribution—Northern Asia:** Turkestan.

**Identification—Keys, Descriptions:** Duce (1900). **Note:** Male unknown.

*nigriventris* (ZETTERSTEDT, 1838)*Osmia (Melanosmia)*

- 1838 *Anthophora nigriventris* ZETTERSTEDT, Insecta Lapponica, vol. 1, p. 465. Type material: ♀(♀), “Lapponia rarissime; ad Bossekop Finmarkiae occidentalis (Lapponia Norvegica; in Gottlandia ad Sanda)” [Norway, Sweden], presumed lost (Tkalcu, 1995: 141).—Combination *Osmia (Centrosmia) nigriventris* (ZETTERSTEDT) in Zanden (1988b: 124).—Nearctic population of this holarctic species accepted as combination *Osmia (Melanosmia) nigriventris frigida* SMITH, 1853 with synonym *Osmia hudsonica* CRESSON, 1864 (Tkalcu, 1995: 141).
- 1867 *Osmia Baicalensis* RADOSZKOWSKI, Horae Societatis Entomologicae Rossicae (St. Petersburg), 5: 80. Type material: Lectotype ♀, by designation of Zanden (1991b: 353), “Sibérie: environs du Baikal” [Russia], ZMHB (Berlin).—Synonymy with *Osmia dimidiata* MORAWITZ in Friese (1909: 126) and in Warncke (1988a: 34), rejected by Zanden (1991b: 353). Synonymy with *Osmia nigriventris* (ZETTERSTEDT) in Zanden (1991b: 353).
- 1869 *Osmia corticalis* GERSTAECKER, Entomologische Zeitung (Stettin), 30: 331. Type material: Lectotype ♀, by designation of Tkalcu (1995: 141), “Deutschland” [Germany], ZMHB (Berlin).—Synonymy in Dalla Torre (1896: 403) and in Tkalcu (1995: 140).

**Distribution**—**Europe**: A, CH, CZ, D, F, FIN, LT, LV, N, PL, RUS, S, SK. **Northern Asia**: MGL, RC, RUS(ES), RUS(FS). **Extralimital**: Nearctic (Canada, USA).

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Radoszkowski (1874a: 193, 1887a: 281–282); Romankova (1984, 1995); Scheuchl (1996); Schmiedeknecht (1885–1886); Wu (2006).

*nigroscopula* (WU, 1982)*Osmia (Melanosmia)*

- 1982 *Chelostoma nigroscopula* WU, Insects of Xizang, vol. 2, p. 406, p. 424. Type material: Holotype ♀, “Xizang: Chagyab, 3600 m” [China], IZCAS (Beijing).—Combination *Osmia (Melanosmia) nigroscopula* (WU) in Wu (2006: 73).

**Distribution**—**Northern Asia**: RC(WP).

**Identification**—**Keys, Descriptions**: Wu (2006). **Note**: Male unknown.

*pamirensis* GUSSAKOVSKII, 1930*Osmia (Melanosmia)*

- 1930 *Osmia (Melanosmia) pamirensis* GUSSAKOVSKII, Pamir-Expedition, 1928, Zoology, p. 71. Type material: Syntypes ♂♂, ♀♀, “Ridge Sary-col, the Chinese border of Pamir Mountains (4300 m)”, “Pamir Mountains, North-East shore of the lake Kara-kul” [Tajikistan].
- 1930 *Osmia rickmersi* ALFKEN, Mitteilungen aus dem Zoologischen Museum in Berlin, 16: 833. Type material: Syntypes ♀♀, “Gletschertäler im Osten des Karakul (nördl. Pamire, 23), 4200–4500 m” [Central Asian Ranges], ZMHB (Berlin).—Synonymy in Gussakovskij (1936: 757).

**Distribution**—**Northern Asia**: RC, TJ; Central Asian Ranges.

**Identification**—**Keys, Descriptions**: Wu (2006).

*parietina* CURTIS, 1828*Osmia (Melanosmia)*

- 1828 *Osmia parietina* CURTIS, British Entomology, vol. 5, [no.] 222. Type material: Syntypes ♀♀, “near Ambleside” [United Kingdom], presumed lost (Tkalcu, 1983: 156).



1838 *Anthophora angustula* ZETTERSTEDT, Insecta Lapponica, vol. 1, p. 466. Type material: Lectotype ♀, by designation of Tkalcu (1983: 156), “Lapponia” [Sweden], MZLU (Lund).—Synonymy in Tkalcu (1983: 156).

1887 *Osmia Vankovitzii* RADOSZKOWSKI, Horae Societatis Entomologicae Rossicae (St. Petersburg), 21: 283. Type material: Holotype ♀, “Gouvernement de Minsk” [Belarus], destroyed (Tkalcu, 1983: 156).—Synonymy with *Osmia angustula* (ZETTERSTEDT) in Friese (1909: 126). Synonymy with *Osmia parietina* CURTIS in Tkalcu (1983: 156).

**Distribution**—Europe: A, B, BG, BY, CH, CZ, D, DK, E, EST, F, FIN, FL, GB, GR, H, I, L, LV, LT, N, NL, PL, RUS, S, SK, SLO, UA; Caucasus. **Northern Asia**: RUS. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Haeseler (1999); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1983, 1995: 139–140).

*pilicornis* SMITH, 1846

*Osmia (Melanosmia)*

1846 *Osmia pilicornis* SMITH, The Zoologist (London), 4: 1567. Type material: Syntypes ♂(♂), ♀(♀), “near Bristol”, “Birch Wood” [United Kingdom], not found at BMNH (London) according to Tkalcu (1983: 155).

**Distribution**—Europe: A, B, CH, CZ, D, DK, F, FIN, GB, H, LT, LV, NL, PL, RUS, S, SK, SLO, UA. **Northern Asia**: RC.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Müller (2002: 806); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1983); Wu (2006).

*recta* PÉREZ, 1902

*Osmia (Melanosmia)*

1902 *Osmia recta* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 63. Type material: ♂(♂), “Algérie” [Algeria], MNHN (Paris).

**Distribution**—Northern Africa: DZ.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*steinmanni* MÜLLER, 2002

*Osmia (Melanosmia)*

2002 *Osmia (Melanosmia) steinmanni* MÜLLER, Revue Suisse de Zoologie, 109: 804. Type material: Holotype ♀, “Appenzell Innerrhoden, Wasserauen, Ebenalp, 1500 m” [Switzerland], ETHZ (Zürich); paratypes ♂♂, ♀♀.

**Distribution**—Europe: A, CH.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004).

*svenssoni* TKALCU, 1983

*Osmia (Melanosmia)*

1983 *Osmia svenssoni* TKALCU, Vestník Československe Spolecnosti Zoologicke, 47: 154. Type material: Holotype ♂, “N-Schweden, Abisko” [Sweden], UZIU (Uppsala); paratypes ♂♂, ♀♀.—Synonymy with *Osmia uncinata* GERSTAECKER in Schwarz *et al.* (1996: 128), rejected by Müller (2002: 804).

**Distribution**—Europe: S.

**Identification**—**Keys, Descriptions**: Müller (2002: 805, 806).

*thoracica* RADOSZKOWSKI, 1874*Osmia (Melanosmia)*

- 1874 *Osmia thoracica* RADOSZKOWSKI, Horae Societatis Entomologicae Rossicae (St. Petersburg), 10: 192. Type material: ♀(♀), “Erivan” [Armenia].
- 1905 *Osmia Pantheri* KOHL, Annalen des Kaiserlich-Königlichen Naturhistorischen Hofmuseums, 20: 242. Type material: Syntypes ♂♂, “Erdschias (Ewlije-Dagh)” [Turkey].—Synonymy in Zanden (1983: 136).

**Distribution**—Europe: ARM. Southwestern Asia: TR.**Identification**—Keys, Descriptions: Zanden (1983: 137).*uncinata* GERSTAECKER, 1869*Osmia (Melanosmia)*

- 1869 *Osmia uncinata* GERSTAECKER, Entomologische Zeitung (Stettin), 30: 336. Type material: Lectotype ♂, by designation of Tkalcu (1983: 154), “Umgegend Berlin’s (Brieselanger Forst, Machnow)” [Germany], ZMHB (Berlin).
- 1872 *Osmia laticeps* THOMSON, Skandinaviens Hymenoptera, vol. 2, p. 242. Type material: Lectotype ♀, by designation of Tkalcu (1983: 154), “Rössjöholm” [Sweden], MZLU (Lund).—Synonymy in Dalla Torre (1896: 414) and in Tkalcu (1983: 154).

**Distribution**—Europe: A, B, CH, CZ, D, DK, F, FIN, FL, GB, I, L, LT, LV, NL, PL, RUS, S, SLO, UA. Northern Asia: RUS(FS).**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Duce (1900); Haeseler (1999); Medvedeva (1978); Romankova (1984, 1995); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1983).*xanthomelana* (KIRBY, 1802)*Osmia (Melanosmia)*

- 1802 *Apis xanthomelana* KIRBY, Monographia Apum Angliae, vol. 2, p. 246. Type material: Lectotype ♀, by designation of Tkalcu (1983: 151), [United Kingdom], BMNH (London); paralectotype ♀.
- 1811 *Osmia fuciformis* LATREILLE, Encyclopédie Méthodique, Histoire Naturelle, Insectes, vol. 8, p. 579. Type material: ♀(♀), “Bois de Boulogne, près de Paris” [France]. Type species of *Melanosmia* SCHMIEDEKNECHT.—Synonymy in Tkalcu (1983: 151).
- 1812 *Osmia chrysomelina* PANZER, Faunae Insectorum Germanicae, 110: 15 [not seen]. Type material: Syntypes ♂(♂), ♀(♀), [Germany].—Synonymy with *Osmia fuciformis* LATREILLE in Dalla Torre (1896: 395). Synonymy with *Osmia xanthomelana* (KIRBY) in Tkalcu (1983: 151).

**Distribution**—Europe: A, B, CH, CZ, D, DK, E, F, GB, GR, H, HR, I, NL, PL, RO, RUS, SK, SLO; S. Northern Asia: RUS.**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Duce (1900); Haeseler (1999); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1983).– subspecies *clarior* TKALCU, 1983

- 1983 *Osmia (Melanosmia) xanthomelana clarior* TKALCU, Vestnik Československe Spolecnosti Zoologicke, 47: 152. Type material: Holotype ♀, “Sierra de Cazorla, El Puerto” [Spain], Tkalcu Collection (Praha); paratypes ♀♀.

**Distribution**—Europe: E, F.**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

– subspecies *xanthomelana* (KIRBY, 1802)

1802 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—**Europe:** A, B, CH, CZ, D, DK, E, F, GB, GR, H, HR, I, NL, PL, RO, RUS, SK, SLO. **Northern Asia:** RUS.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*Osmia* subgenus *Metallinella* TKALCU

Palearctic species: 1

*brevicornis* (FABRICIUS, 1798)

*Osmia* (*Metallinella*)

1798 *Eucera brevicornis* FABRICIUS, Supplementum Entomologiae Systematicae, p. 278. **Type material:** Holotype ♂, “Habitat in Italia” [Italy], ZMUC (Copenhagen).—Combination *Metallinella brevicornis* (FABRICIUS) in Tkalcu (1970: 11). Combination *Osmia* (*Cephalosmia*) *brevicornis* (FABRICIUS) in Warncke (1991d: 284).

1849 *Osmia atrocaerulea* SCHILLING, Übersicht der Arbeiten und Veränderungen der schlesischen Gesellschaft für vaterländische Cultur im Jahre 1848: 100. **Type material:** ♀(♀), “Schlesien” [Poland?]. **Type species** of *Metallinella* TKALCU.—Synonymy in Tkalcu (1970: 11).

1869 *Osmia Panzeri* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 6: 65. **Type material:** Syntypes ♂(♂), ♀(♀), “Europa media et meridionali” [Europe].—Synonymy in Tkalcu (1970: 11).

**Distribution**—**Europe:** A, CH, CZ, D, DK, E, F, FL, GR, H, I, L, LT, MK, PL, RO, RUS, SK, SLO, UA; Caucasus. **Northern Africa:** DZ, MA. **Northern Asia:** KS, TJ; Central Asian Ranges. **Southwestern Asia:** CY, IR, TR.

**Identification**—**Keys, Descriptions:** Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Mavroustakis (1956a: 859); Medvedeva (1978); Móczár (1958); Radoszkowski (1874c: 159–160, 1887a: 290); Scheuchl (1996); Schmiedeknecht (1885–1886); Warncke (1991d).

– subspecies *brevicornis* (FABRICIUS, 1798)

1798 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—**Europe:** A, CH, CZ, D, DK, E, F, FL, H, I, L, PL, RO, RUS, SK, SLO, UA.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *leucogastra* MORAWITZ, 1875

1875 *Osmia leucogastra* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 87. **Type material:** Syntypes ♂(♂), ♀(♀), “in Sarafschan” [Tajikistan].—Combination *Metallinella brevicornis leucogastra* (MORAWITZ) in Zanden (1988b: 123). Combination *Osmia* (*Cephalosmia*) *brevicornis leucogastra* MORAWITZ in Warncke (1991d: 284).

**Distribution**—**Europe:** GR, MK; Caucasus. **Northern Asia:** KS, TJ; Central Asian Ranges. **Southwestern Asia:** CY, IR, TR.

**Identification**—**Keys, Descriptions:** Ducke (1900).

– subspecies *subcyanea* ALFKEN, 1935

1931 *Osmia atrocaerulea cyanella* ALFKEN, Entomologische Zeitung (Stettin), 92: 57. NOMEN PRAEOCCUPATUM [not *Osmia cyanella* COCKERELL, 1897]. Type material: Holotype ♀, “Mittlerer Atlas, Azru” [Morocco], FMNH (Helsinki).

1935 *Osmia atrocaerulea subcyanea* ALFKEN, Veröffentlichungen aus dem Deutschen Kolonial- und Übersee-Museum in Bremen, 1: 316. NOMEN NOVUM with same type specimen for preoccupied *Osmia atrocaerulea cyanella* ALFKEN, 1931 [not *Osmia cyanella* COCKERELL, 1897].—Combination *Metallinella brevicornis subcyanea* (ALFKEN) in Zanden (1987: 75). Combination *Osmia (Cephalosmia) brevicornis subcyanea* ALFKEN in Warncke (1991d: 284).

**Distribution**—Europe: E. Northern Africa: DZ, MA.

**Identification**—Keys, Descriptions: Zanden (1987: 78).

*Osmia* subgenus *Monosmia* TKALCU

Palearctic species: 1

*apicata* SMITH, 1853

*Osmia (Monosmia)*

1853 *Osmia apicata* SMITH, Catalogue of Hymenopterous Insects in the Collection of the British Museum, vol. 1, p. 140. Type material: Lectotype ♀, by designation of Tkalcu (1974b: 339), “Albania” [Albania], BMNH (London). Type species of *Monosmia* TKALCU.

1869 *Osmia macroglossa* GERSTAECKER, Entomologische Zeitung (Stettin), 30: 349. Type material: Lectotype ♀, by designation of Tkalcu (1974b: 339), “Griechenland” [Greece], ZMHB (Berlin).—Combination *Osmia (Acertostomia) macroglossa* GERSTAECKER in Schmiedeknecht (1885: 19 [1885]). Combination *Osmia (Pachyosmia) macroglossa* GERSTAECKER in Friese (1911b: 124).—Synonymy in Tkalcu (1974b: 339).

**Distribution**—Europe: AL, BG, I, GE, GR, HR, MK, RUS, SCG, SLO. Southwestern Asia: IL, JOR, TR.

**Identification**—Keys, Descriptions: Ducke (1900); Medvedeva (1978); Peters (1978a), Schmiedeknecht (1885–1886); Tkalcu (1974b: 337–339).

*Osmia* subgenus *Nasutosmia* GRISWOLD & MICHENER

Palearctic species: 2

*corniculata* (ZANDEN, 1989)

*Osmia (Nasutosmia)*

1989 *Hoplitis (Micreriades) corniculata* ZANDEN, Entomologische Abhandlungen (Dresden), 53: 81. Type material: Holotype ♀, “± 20 km s. Tizi-n-Test (Taroudant rd), High Atlas, ca. 1500 m” [Morocco], RMNH (Leiden); paratypes ♀♀, ♂♂.—Combination *Hoplitis (Nasutosmia) corniculata* ZANDEN in Griswold and Michener (1997: 225).

**Distribution**—Europe: E. Northern Africa: DZ, MA.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*nasuta* FRIESE, 1899

*Osmia (Nasutosmia)*

- 1899 *Osmia nasuta* FRIESE, Entomologische Nachrichten (Berlin), 25: 27. Type material: Lectotype ♀, by designation of Zanden (1989: 81), “Biskra” [Algeria], OUMNH (Oxford). Type species of *Nasutosmia* GRISWOLD & MICHENER.—Combination *Osmia (Osmia) nasuta* FRIESE in Friese (1911b: 76). Combination *Hoplitis (Micreriades) nasuta* (FRIESE) in Zanden (1988b: 122). Combination *Hoplitis (Nasutosmia) nasuta* (FRIESE) in Griswold and Michener (1998: 225).
- 1905 *Osmia rhynchaena* PÉREZ, Butlletí de la Institució Catalana d'Història Natural, 5: 83. Type material: Holotype ♀, “Garriga” [Spain], MNHN (Paris).—Synonymy in Benoist (1928e: 120).

**Distribution**—Europe: E, F Northern Africa: DZ, MA, TN.

**Identification**—Keys, Descriptions: Benoist (1929a); Ducke (1900); Zanden (1989: 81–82).

*Osmia* subgenus *Neosmia* TKALCU

Palearctic species: 8

*bicolor* (SCHRANK, 1781)

*Osmia (Neosmia)*

- 1781 *Apis bicolor* SCHRANK, Enumeratio Insectorum Austriae Indigenorum, p. 400. Type material: ♀(♀), “Viennae” [Austria], presumed lost (Tkalcu, 1977a: 97).—Combination *Osmia (Helicosmia) bicolor* (SCHRANK) in Schmiedeknecht (1885: 22 [888]).
- 1785 *Apis rustica* GEOFFROY, in: Fourcroy, Entomologia Parisiensis, vol. 2, p. 451. Type material: ♀(♀), “Paris” [France], presumed lost (Tkalcu, 1977a: 97).—Synonymy in Tkalcu (1977a: 97).
- 1791 *Apis fusca* CHRIST, Naturgeschichte, Klassifikation und Nomenclatur der Insekten, p. 182. NOMEN PRAEOCCUPATUM [not *Apis fusca* SCOPOLI, 1763]. Type material: No original material known, [Germany].—Synonymy in Warncke (1986: 99).
- 1791 *Apis hirundinaria* CHRIST, Naturgeschichte, Klassifikation und Nomenclatur der Insekten, p. 188. Type material: No original material known, [Germany].—Synonymy in Warncke (1986: 101).
- 1841 *Osmia pyrenaea* LEPELETIER, Histoire Naturelle des Insectes, Hyménoptères, vol. 2, p. 319 [not seen]. Type material: ♀(♀), “Pyrénées. Barèges” [France], MNHN (Paris).—Combination *Osmia bicolor pyrenaea* LEPELETIER in Dalla Torre (1896: 387).—Synonymy in Pérez (1879: 175).
- 1857 *Osmia fusca* GISTEL, Vacuna, 2: 537. NOMEN PRAEOCCUPATUM [not *Apis fusca* CHRIST, 1791]. Type material: No original material known, “Monachii” [Munich] [Germany].—Synonymy in Schwarz *et al.* (1996: 121).
- 1879 *Osmia rufitarsis* SMITH, Description of New Species of Hymenoptera in the Collection of the British Museum, p. 61. Type material: Holotype ♀, “Angara River, Siberia” [Russia], BMNH (London).—Synonymy in Tkalcu (1995: 142).
- 1917 *Osmia monachiensis* STRAND, Archiv für Naturgeschichte, 82: 98. NOMEN NOVUM with same type specimen for preoccupied *Osmia fusca* GISTEL, 1857 [not *Apis fusca* CHRIST, 1791].

**Distribution**—Europe: A, AL, B, CH, CZ, D, E, F, FIN, FL, GB, GE, H, I, L, LT, NL, P, PL, RUS, S, SCG, SK, SLO, UA. **Northern Asia**: RUS(ES); Turkestan.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Móczár (1958); Radoszkowski (1887a: 292); Scheuchl (1996); Schmiedeknecht (1885–1886); Tkalcu (1977a).

*cinnabarina* PÉREZ, 1895*Osmia (Neosmia)*

- 1895 *Osmia cinnabarina* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 10. Type material: Lectotype ♀, by designation of Tkalcu (1977a: 93), “Tlemcen” [Algeria], MNHN (Paris).—Combination *Osmia (Osmia) cinnabarina* PÉREZ in Friese (1911b: 88).

**Distribution**—Northern Africa: DZ, E(Ca), MA, TN. **Southwestern Asia**: IL.

**Identification**—**Keys, Descriptions**: Duce (1900); Peters (1975: 54–55); Tkalcu (1977a, 1993b: 815).

*gracilicornis* PÉREZ, 1895*Osmia (Neosmia)*

- 1895 *Osmia gracilicornis* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 10. Type material: Lectotype ♀, by designation of Tkalcu (1974b: 335), “Tunis” [Tunisia], MNHN (Paris). Type species of *Neosmia* TKALCU.—Combination *Osmia (Osmia) gracilicornis* PÉREZ in Friese (1911b: 88).

**Distribution**—Northern Africa: DZ, MA, TN. **Southwestern Asia**: IL.

**Identification**—**Keys, Descriptions**: Duce (1900); Tkalcu (1974b: 334, 1977a).

*jason* BENOIST, 1929*Osmia (Neosmia)*

- 1929 *Osmia Jason* BENOIST, Bulletin de la Société Entomologique de France, 1929: 95. Type material: Holotype ♀, “Comana Vlasca” [Romania], MNHN (Paris).

**Distribution**—Europe: GR, MK, RO, SCG. **Southwestern Asia**: IL.

**Identification**—**Keys, Descriptions**: Tkalcu (1977a).

*purpurata* DUCKE, 1899*Osmia (Neosmia)*

- 1899 *Osmia purpurata* DUCKE, Entomologische Nachrichten (Berlin), 25: 215. Type material: Syntypes ♀♀, “Algerien” [Algeria], ZMHB (Berlin), presumed lost (Tkalcu, 1977a: 93).—Combination *Osmia (Osmia) purpurata* DUCKE in Friese (1911b: 88).

**Distribution**—Northern Africa: DZ.

**Identification**—**Keys, Descriptions**: Duce (1900); Tkalcu (1977a).

*rufigastra* LEPELETIER, 1841*Osmia (Neosmia)*

- 1841 *Osmia rufigastra* LEPELETIER, Histoire Naturelle des Insectes, Hyménoptères, vol. 2, p. 324 [not seen]. Type material: Lectotype ♀, by designation of Tkalcu (1977a: 92), “Oran” [Algeria], MNHN (Paris).—Combination *Osmia (Helicosmia) rufigastra* LEPELETIER in Schmiedeknecht (1885: 92 [888]). Combination *Osmia (Osmia) rufigastra* LEPELETIER in Friese (1911b: 107). Combination *Osmia (Diceratosmia) rufigastra* LEPELETIER in Michener (1941: 162).

**Distribution**—Northern Africa: DZ, MA, TN.

**Identification**—**Keys, Descriptions**: Duce (1900); Schmiedeknecht (1885–1886); Tkalcu (1977a).

*scutispina* GRIBODO, 1894*Osmia* (*Neosmia*)

- 1894 *Osmia scutispina* GRIBODO, *Bullettino della Società Entomologica Italiana*, 26: 102. Type material: Syntypes ♀♀, “Boghari, Ponteaba” [Algeria], MSNG (Genova).
- 1920 *Osmia rosea* FRIESE, *Deutsche Entomologische Zeitschrift* (Berlin), 1920: 50. Type material: Lectotype ♂, by designation of Tkalcu (1977a: 93), “Tunis merid.” [Tunisia], ZMHB (Berlin).—Synonymy in Tkalcu (1977a: 93).

**Distribution**—Northern Africa: DZ, TN.**Identification**—Keys, Descriptions: Duce (1900); Tkalcu (1977a).*tingitana* BENOIST, 1969*Osmia* (*Neosmia*)

- 1969 *Osmia tingitana* BENOIST, *Bulletin de la Société Entomologique de France*, 74: 243. Type material: Lectotype ♂, by designation of Zanden (1986: 74), “Tanger” [Morocco], MNHN (Paris); paralectotypes ♂♂.
- 1977 *Osmia* (*Neosmia*) *tkalcui* PETERS, *Entomologische Zeitschrift* (Stuttgart), 87: 22. Type material: Holotype ♂, “Cyrenaica” [Libya], SMFD (Frankfurt); paratypes ♂♂, ♀♀.—Synonymy in Zanden (1986: 74).

**Distribution**—Northern Africa: DZ, ET, LAR, MA.**Identification**—Keys, Descriptions: Tkalcu (1977a); Zanden (1986: 74).– subspecies *secunda* PETERS, 1977

- 1977 *Osmia* (*Neosmia*) *tkalcui secunda* PETERS, *Entomologische Zeitschrift* (Stuttgart), 87: 25. Type material: Holotype ♂, “Tripolitania, Garian, ca. 2500 Fuss” [Libya], BMNH (London).

**Distribution**—Northern Africa: LAR.**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.– subspecies *tingitana* BENOIST, 1969

- 1969 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Northern Africa: DZ, ET, LAR, MA.**Identification**—Keys, Descriptions: Tkalcu (1977a); Zanden (1986: 74).*Osmia* subgenus *Orientosmia* PETERS

Palearctic species: 1

*maxillaris* MORAWITZ, 1875*Osmia* (*Orientosmia*)

- 1875 *Osmia maxillaris* MORAWITZ, *Travel to Turkestan by A. P. Fedtschenko*, p. 82. Type material: Lectotype ♂, by designation of Peters (1978a: 317) “in valle Sarafschan, Warsaminor, Obburden, Iskander” [Tajikistan], ZIN (St. Petersburg); paralectotypes ♂, ♀♀. Type species of *Orientosmia* PETERS.—Combination *Osmia* (*Pachyosmia*)



*maxillaris* MORAWITZ in Friese (1911b: 125).

**Distribution**—Northern Asia: TJ, TM. Southwestern Asia: IR, TR.

**Identification**—**Keys, Descriptions**: Duce (1900); Peters (1978a).

– subspecies *dinazade* PETERS, 1978

1978 *Osmia (Orientosmia) maxillaris dinazade* PETERS, Senckenbergiana Biologica (Frankfurt), 58: 319. Type material: Holotype ♂, “Pul-i-chatum (an der Grenze von Turkmenien)” [Iran], ZIN (St. Petersburg); paratype ♂.

**Distribution**—Northern Asia: TM. Southwestern Asia: IR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Female unknown.

– subspecies *maxillaris* MORAWITZ, 1875

1875 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Northern Asia: TJ.

**Identification**—**Keys, Descriptions**: Peters (1978a).

– subspecies *scheherazade* PETERS, 1978

1978 *Osmia (Orientosmia) maxillaris scheherazade* PETERS, Senckenbergiana Biologica (Frankfurt), 58: 319. Type material: Holotype ♂, “Gürün” [Turkey], SMFD (Frankfurt); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*Osmia* subgenus *Osmia* PANZER

Palearctic species: 23

*ariadne* PETERS, 1978

*Osmia (Osmia)*

1978 *Osmia (Osmia) ariadne* PETERS, Senckenbergiana Biologica (Frankfurt), 58: 296. Type material: Holotype ♀, “W-Kreta, Meskla” [Greece: Crete], SMFD (Frankfurt); paratype ♀.

**Distribution**—Europe: GR(Cr).

**Identification**—**Keys, Descriptions**: Zanden (1986: 72).

*bicornis* (LINNAEUS, 1758)

*Osmia (Osmia)*

1758 *Apis bicornis* LINNAEUS, Systema Naturae, 10th edn, vol. 1, p. 575. Type material: Holotype ♀, “in Europa” [Sweden], LSUK (London). Type species of *Osmia* PANZER.—Combination *Osmia (Ceratosmia) bicornis* (LINNAEUS) in Schmiedeknecht (1885: 19 [885]).—Synonymy with *Osmia rufa* (LINNAEUS) in Dalla Torre (1896:

407) and in Warncke (1986: 121), but see Day (1979: 51, 70).

- 1758 *Apis rufa* LINNAEUS, Systema Naturae, 10<sup>th</sup> edn, vol. 1, p. 575. Type material: Lectotype ♂, by designation of Day (1979: 70), “in Europa” [Sweden], LSUK (London).—Combination *Osmia (Pachyosmia) rufa* (LINNAEUS) in Friese (1911b: 126). Combination *Osmia (Osmia) rufa* (LINNAEUS) in Zanden (1988b: 127).—Synonymy in Kirby (1802: 273) and in Day (1979: 51, 70).

**Distribution**—Europe: A, AL, ARM, B, BG, CH, CZ, D, DK, E, E(Ba), F, F(Co), FIN?, FL, GB, GR, H, HR, I, I(Sa), I(Si), IRL, L, LT, LV, MK, N, NL, P, PL, RUS, S, SK, SLO, UA. **Northern Africa**: DZ, MA, TN. **Northern Asia**: RUS(FS); J. **Southwestern Asia**: CY, IR, SYR, TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Peters (1978a); Radoszkowski (1887a: 279); Romankova (1984); Scheuchl (1996); Schmiedeknecht (1885–1886).

— subspecies *bicornis* (LINNAEUS, 1758)

- 1758 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).—Combination *Osmia rufa rufa* (LINNAEUS) in Peters (1978a: 290).
- 1776 *Apis agino* HARRIS, Exposition of English Insects, p. 163. Type material: ♂(♂), [England].—Synonymy in Peters (1978a: 290).
- 1844 *Osmia hedera* SMITH, The Zoologist (London), 2: 747. Type material: Holotype ♂, “Hampshire” [United Kingdom].—Synonymy in Tkalcu (1977b: 232).
- 1899 *Osmia rufa borealis* DUCKE, Entomologische Nachrichten (Berlin), 25: 215. Type material: Holotype ♀, “aus Norwegen” [Norway], NMW (Wien).—Combination *Osmia (Pachyosmia) rufa borealis* DUCKE in Friese (1911b: 126).—Synonymy in Tkalcu (1977b: 232).

**Distribution**—Europe: DK, E, F(Co), FIN?, GB, I(Sa), IRL, N, P, S. **Southwestern Asia**: IR.

**Identification**—**Keys, Descriptions**: Ducke (1900); Peters (1978a).

— subspecies *globosa* (SCOPOLI, 1763)

- 1763 *Apis globosa* SCOPOLI, 1763, Entomologia Carniolica, p. 300. Type material: Neotype ♂, by designation of Warncke (1986: 74), “Klagenfurt, Kärnten” [Austria], ZSM (München).—Combination *Osmia rufa globosa* (SCOPOLI) in Warncke (1986: 100).
- 1790 *Apis cornigera* ROSSI, Fauna Etrusca, vol. 2, p. 108. Type material: ♀(♀), [Italy].—Combination *Osmia rufa cornigera* (ROSSI) in Peters (1978a: 294).—Synonymy in Warncke (1986: 94).
- 1799 *Apis fronticornis* PANZER, Faunae Insectorum Germanicae, 63: 20. Type material: ♀(♀), [Germany].—Synonymy with *Osmia rufa cornigera* (ROSSI) in Peters (1978a: 294). Synonymy with *Osmia rufa globosa* (SCOPOLI) in Warncke (1986: 98).

**Distribution**—Europe: A, AL, ARM, B, BG, CH, CZ, D, DK, E, F, F(Co), FL, GR, H, HR, I, I(Si), L, LT, LV, MK, NL, PL, RUS, S, SK, SLO, UA. **Northern Africa**: TN. **Southwestern Asia**: CY?, IR, SYR, TR.

**Identification**—**Keys, Descriptions**: Peters (1978a); Radoszkowski (1887a: 280).

– subspecies *fracticornis* PÉREZ, 1895

- 1895 *Osmia fracticornis* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 10. Type material: Syntypes ♂(♂), ♀(♀), [Algeria], MNHN (Paris).—Combination *Osmia (Pachyosmia) fracticornis* PÉREZ in Friese (1911b: 126). Combination *Osmia rufa fracticornis* PÉREZ in Peters (1978a: 295).

**Distribution**—Europe: E(Ba), I(Sa), I(Si). **Northern Africa**: DZ, MA, TN.

**Identification**—**Keys, Descriptions**: DUCKE (1900); PETERS (1978a).

*cerinthis* MORAWITZ, 1876

*Osmia (Osmia)*

- 1876 *Osmia cerinthis* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 12: 41. Type material: ♀(♀), “Borshom” [Georgia], ZIN (St. Petersburg).—Combination *Osmia (Ceratosmia) cerinthis* MORAWITZ in Schmiedeknecht (1885: 19 [885]). Combination *Osmia (Pachyosmia) rufa cerinthis* MORAWITZ in Friese (1911b: 126).

**Distribution**—Europe: A, CZ, D, F, GE, GR, I, I(Si), MK, PL, RUS, SK, SLO, UA; B. **Northern Asia**: RC. **Southwestern Asia**: IR, TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); DUCKE (1900, as *Osmia rufa* var. *cerinthis*); Medvedeva (1978); PETERS (1978a); Scheuchl (1996); Schmiedeknecht (1885–1886); Wu (2006).

– subspecies *cerinthis* MORAWITZ, 1876

- 1876 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: A, CZ, D, F, GE, GR, I, MK, PL, RUS, SK, SLO, UA. **Northern Asia**: RC. **Southwestern Asia**: IR, TR.

**Identification**—**Keys, Descriptions**: PETERS (1978a).

– subspecies *crassicypeata* PETERS, 1978

- 1978 *Osmia (Osmia) cerinthis crassicypeata* PETERS, Senckenbergiana Biologica (Frankfurt), 58: 299. Type material: Holotype ♀, “Palermo” [Italy: Sicily], Schwarz Collection (Ansfelden).

**Distribution**—Europe: I(Si).

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*cornifrons* (RADOSZKOWSKI, 1887)

*Osmia (Osmia)*

- 1887 *Chalicodoma cornifrons* RADOSZKOWSKI, Horae Societatis Entomologicae Rossicae (St. Petersburg), 21: 430. Type material: ♀(♀), “Korée” [Korea].—Combination *Osmia (Ceratosmia) cornifrons* (RADOSZKOWSKI) in Gussakovskij (1932: 61).

**Distribution**—**Northern Asia**: J, RC, ROK, RUS(FS); Korea. **Extralimital**: Nearctic (USA) [Introduced].

**Identification**—**Keys, Descriptions**: Romankova (1984, 1985b: 943–944, 1995); Wu (2006); Yasumatsu and Hirashima (1950).

*cornuta* (LATREILLE, 1805)*Osmia* (*Osmia*)

1805 *Megachile cornuta* LATREILLE, Histoire Naturelle des Crustacés et des Insectes, vol. 14: 59 [not seen]. Type material: [France]. Combination *Osmia* (*Ceratostmia*) *cornuta* (LATREILLE) in Schmiedeknecht (1885: 19 [885]). Combination *Osmia* (*Pachyosmia*) *cornuta* (LATREILLE) in Friese (1911b: 127).

**Distribution**—**Europe**: A, AND, ARM, B, CH, CZ, D, E, E(Ba), E, F(Co), FL, GE, GR, GR(Cr), H, I, I(Sa), I(Si), L, MK, NL, P, PL, RO, RUS, SK, SLO, UA. **Northern Africa**: ET, DZ, TN. **Northern Asia**: TM; Turkestan. **Southwestern Asia**: CY, IR, TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Peters (1978a); Radoszkowski (1887a: 291–292); Scheuchl (1996); Schmiedeknecht (1885–1886).

– subspecies *cornuta* (LATREILLE, 1805)

1805 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—**Europe**: A, AND, B, CH, CZ, D, E, E(Ba), E, F(Co), FL, GR, H, I, I(Sa), I(Si), L, MK, NL, P, PL, RO, RUS, SK, SLO, UA. **Northern Africa**: DZ, TN.

**Identification**—**Keys, Descriptions**: Peters (1978a).

– subspecies *divergens* FRIESE, 1920

1920 *Osmia divergens* FRIESE, Deutsche Entomologische Zeitschrift (Berlin), 1920: 51. Type material: Lectotype ♀, by designation of Peters (1978a: 304), “Turkestan” [Turkestan], ZMHB (Berlin).—Combination *Osmia* (*Osmia*) *cornuta divergens* FRIESE in Peters (1978a: 304).

**Distribution**—**Northern Asia**: TM; Turkestan. **Southwestern Asia**: IR.

**Identification**—**Keys, Descriptions**: Peters (1978a).

– subspecies *neoregaena* MAVROMOUSTAKIS, 1938

1938 *Osmia neoregaena* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 11, 2: 471. Type material: Holotype ♀, “Saittas, 2500 ft” [Cyprus], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Osmia* (*Osmia*) *cornuta neoregaena* MAVROMOUSTAKIS in Peters (1978a: 304).

**Distribution**— **Europe**: GR. **Southwestern Asia**: CY.

**Identification**—**Keys, Descriptions**: Peters (1978a).

– subspecies *quasirufa* PETERS, 1978

1978 *Osmia* (*Osmia*) *cornuta quasirufa* PETERS, Senckenbergiana Biologica (Frankfurt), 58: 303. Type material: Holotype ♀, “Kingi (Maryut, sw von Alexandria) im Garten” [Egypt], SMFD (Frankfurt); paratypes ♂♂, ♀♀.

**Distribution**—**Europe**: ARM, GE, GR(Cr)? **Northern Africa**: ET. **Southwestern Asia**: IR, TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*cyrenaica* PETERS, 1978*Osmia (Osmia)*

- 1978 *Osmia (Osmia) cyrenaica* PETERS, Senckenbergiana Biologica (Frankfurt), 58: 308. Type material: Holotype ♂, “Cyrenaica, Cyrene, 1800 feet” [Libya], BMNH (London); paratype ♂.

**Distribution**—Northern Africa: LAR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

*emarginata* LEPELETIER, 1841*Osmia (Osmia)*

- 1841 *Osmia emarginata* LEPELETIER, Histoire Naturelle des Insectes, Hyménoptères, vol. 2, p. 317 [not seen]. Type material: Holotype ♀, “Bois du Vésinet, près Saint-Germain-en-Laye” [France], MNHN (Paris). Type species of *Aceratosmia* SCHMIEDEKNECHT.—Combination *Osmia (Aceratosmia) emarginata* LEPELETIER in Schmiedeknecht (1885: 19 [885]). Combination *Osmia (Pachyosmia) emarginata* LEPELETIER in Friese (1911b: 125).

**Distribution**—Europe: B, E, E, F(Co), I, I(Sa), L, P. Northern Africa: DZ, MA. Southwestern Asia: Æ.

**Identification**—Keys, Descriptions: Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900, incl. *Osmia mustelina*); Peters (1978a), Schmiedeknecht (1885–1886, incl. *Osmia mustelina*); Tkalcu (1971). **Misapplication**: Historically often confounded with *Osmia mustelina* GERSTAECKER, see Tkalcu (1971).

– subspecies *emarginata* LEPELETIER, 1841

- 1841 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: B, E, E, F(Co), I, I(Sa), L, P.

**Identification**—Keys, Descriptions: Peters (1978a).

– subspecies *infusata* PETERS, 1978

- 1928 *Osmia emarginata fusca* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 8: 215. NOMEN PRAEOCCUPATUM [not *Apis fusca* CHRIST, 1791; not *Osmia fusca* GISTEL, 1857]. Type material: Syntypes ♂(♂), ♀(♀), “Moyen Atlas, au sud de Taza: Tizi n’Bouftène (2300 m), Tasrah des Ighezzane (2300 m)” [Morocco], MNHN (Paris).
- 1978 *Osmia emarginata infusata* PETERS, Senckenbergiana Biologica (Frankfurt), 58: 310. NOMEN NOVUM with same type specimen for preoccupied *Osmia emarginata fusca* BENOIST, 1928 [not *Apis fusca* CHRIST, 1791; not *Osmia fusca* GISTEL, 1857].

**Distribution**—Northern Africa: DZ, MA.

**Identification**—Keys, Descriptions: Tkalcu (1971).

*excavata* ALFKEN, 1903*Osmia (Osmia)*

- 1903 *Osmia (Chalcosmia) excavata* ALFKEN, Zeitschrift für Systematische Hymenopterologie und Dipterologie, 3:

210. Type material: ♀(♀), “Tokio” [Japan], ZMHB (Berlin).

1911 *Osmia mitsukurii* COCKERELL, Proceedings of the United States National Museum, 39: 639. Type material: Holotype ♀, [Japan], USNM (Washington).—Synonymy in Yasumatsu and Hirashima (1950: 3).

1931 *Osmia (Pachyosmia) heudei* COCKERELL, American Museum Novitates, 466: 2. Type material: Holotype ♀, “Zi-ka-wei” [China], AMNH (New York).—Synonymy in Yasumatsu and Hirashima (1950: 3).

**Distribution**—Northern Asia: J, RC, ROK.

**Identification**—Keys, Descriptions: Wu (2006); Yasumatsu and Hirashima (1950).

*fedtschenkoi* MORAWITZ, 1875

*Osmia (Osmia)*

1875 *Osmia Fedtschenkoi* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 81. Type material: Syntypes ♂(♂), ♀(♀), “prope Samarkand” [Uzbekistan].—Combination *Osmia (Chalcosmia) fedtschenkoi* MORAWITZ in Friese (1911b: 114). Combination *Osmia (Aceratosmia) fedtschenkoi* MORAWITZ in Tkalcu (1969a: 340).

1904 *Osmia (Ceratosmia) balucha* NURSE, Journal of the Bombay Natural History Society, 15: 573. Type material: Lectotype ♀, by designation of Tkalcu (1969a: 341), “Quetta” [Pakistan], BMNH (London); paralectotype ♂.—Synonymy in Tkalcu (1969a: 340).

1930 *Osmia usbekistana* COCKERELL, The Annals and Magazine of Natural History, ser. 10, 5: 408. Type material: Lectotype ♀, by designation of Tkalcu (1969a: 341), “Tashkent” [Uzbekistan], BMNH (London).—Synonymy in Tkalcu (1969a: 340).

**Distribution**—Northern Asia: TJ, TM, UZ. Southwestern Asia: AFG, PAK.

**Identification**—Keys, Descriptions: Duce (1900); Peters (1978a), Tkalcu (1969a: 341–342).

*kohli* DUCKE, 1899

*Osmia (Osmia)*

1899 *Osmia kohlii* DUCKE, Entomologische Nachrichten (Berlin), 25: 213. Type material: Lectotype ♀, by designation of Peters (1978a: 306), “Sicilien” [Italy: Sicily], NMW (Wien); paralectotypes ♂♂, ♀♀.—Combination *Osmia (Pachyosmia) kohli* DUCKE in Friese (1911b: 127).

**Distribution**—Europe: I, I(Si), M; F(☉). Northern Africa: DZ?.

**Identification**—Keys, Descriptions: Benoist (1931); Duce (1900); Peters (1978a).

*longicornis* MORAWITZ, 1875

*Osmia (Osmia)*

1875 *Osmia longicornis* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 78. Type material: Lectotype ♀, by designation of Tkalcu (1969a: 343), “Taschkent” [Uzbekistan], ZMHB (Berlin); paralectotype ♂.—Combination *Osmia (Pachyosmia) longicornis* MORAWITZ in Friese (1911b: 125).

**Distribution**—Europe: Caucasus. Northern Asia: UZ. Southwestern Asia: AFG

**Identification**—Keys, Descriptions: Duce (1900); Peters (1978a); Romankova (1985b: 943–944); Tkalcu (1969a: 343).

*melanocephala* MORAWITZ, 1875

*Osmia* (*Osmia*)

- 1875 *Osmia melanocephala* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 80. Type material: Syntypes ♂(♂), ♀(♀), “in valle Sarafschan” [Tajikistan].—Combination *Osmia* (*Pachyosmia*) *melanocephala* MORAWITZ in Friese (1911b: 124). Combination *Osmia* (*Aceratosmia*) *melanocephala* MORAWITZ in Tkalcu (1969a: 340).

**Distribution**—Northern Asia: KS, MGL, RC, RUS, TJ, TM, UZ.

**Identification**—Keys, Descriptions: Ducke (1900); Peters (1978a), Radoszkowski (1886: 13); Tkalcu (1995: 142); Wu (2006); Zanden (1996b: 895).

*mustelina* GERSTAECKER, 1869

*Osmia* (*Osmia*)

- 1869 *Osmia mustelina* GERSTAECKER, Entomologische Zeitung (Stettin), 30: 348. Type material: Lectotype ♀, by designation of Tkalcu (1971: 225), “Franken (bei Culmbach)” [Germany], ZMHB (Berlin); paralectotype ♀.—Combination *Osmia* (*Aceratosmia*) *mustelina* GERSTAECKER in Tkalcu (1969a: 340).—Synonymy with *Osmia emarginata* LEPELETIER in Friese (1911b: 125), rejected by Tkalcu (1971).

**Distribution**—Europe: A, ARM, CH, CZ, D, FL, GE, GR, H, I, I(Si), MK, PL, RUS, SK, SLO, UA. **Southwestern Asia**: IL, IR, RL, TR.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Ducke (1900, incl. *Osmia emarginata*); Medvedeva (1978, as *Osmia emarginata*); Móczár (1958, as *Osmia emarginata*); Peters (1978a); Scheuchl (1996); Schmiedeknecht (1885–1886, incl. *Osmia emarginata*); Tkalcu (1971; 1974b: 339–340). **Misapplication**: Historically often confounded with *Osmia emarginata* LEPELETIER, see Tkalcu (1971).

– subspecies *griseohirta* ALFKEN, 1935

*Osmia* (*Osmia*)

- 1935 *Osmia emarginata griseohirta* ALFKEN, Mitteilungen aus dem Entomologischen Verein in Bremen, 23: 23. Type material: Lectotype ♂, by designation of Tkalcu (1971), “Elburs, Pish-Kuh” [Iran], ZMHB (Berlin).—Combination *Osmia* (*Osmia*) *mustelina griseohirta* ALFKEN in Tkalcu (1971: 226).

**Distribution**—Europe: ARM, GE. **Southwestern Asia**: IR, TR.

**Identification**—Keys, Descriptions: Peters (1978a), Tkalcu (1971).

– subspecies *mustelina* GERSTAECKER, 1869

- 1869 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: A, CH, CZ, D, FL, GR, H, I, MK, PL, RUS, SK, SLO, UA. **Southwestern Asia**: IL, RL, TR.

**Identification**—Keys, Descriptions: Peters (1978a).

– subspecies *umbrosa* PETERS, 1978

- 1978 *Osmia* (*Osmia*) *mustelina umbrosa* PETERS, Senckenbergiana Biologica (Frankfurt), 58: 313. Type material: Holotype ♀, “Palermo” [Italy: Sicily], SMFD (Frankfurt); paratypes ♀♀.



**Distribution**—Europe: I, I(Si).

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*mutensis* PETERS, 1978

*Osmia (Osmia)*

1978 *Osmia (Osmia) mutensis* PETERS, Senckenbergiana Biologica (Frankfurt), 58: 315. **Type material**: Holotype ♀, “Mut, Sertavul, 1600 m” [Turkey], SMFD (Frankfurt).

**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*nigrohirta* FRIESE, 1899

*Osmia (Osmia)*

1899 *Osmia bicolor nigrohirta* FRIESE, Entomologische Nachrichten (Berlin), 25: 25. **Type material**: Lectotype ♀, “Poros” [Greece], ZMHB (Berlin).—Combination *Osmia (Aceratosmia) nigrohirta* FRIESE in Tkalcu (1969a: 340).

**Distribution**—Europe: AL, GR, MK; Caucasus. **Southwestern Asia**: IR, RL, TR.

**Identification**—Keys, Descriptions: Duce (1900); Peters (1978a), Tkalcu (1974b: 339–340).

*opima* ROMANKOVA, 1985

*Osmia (Osmia)*

1985 *Osmia (Osmia) opima* ROMANKOVA, Zoologicheskii Zhurnal (Moscow), 64: 942. **Type material**: Syntypes ♂(♂), ♀(♀), “Primorye, 14 km north of the village Kievka” [Russia].

**Distribution**—Northern Asia: RC(NE), RC(NO), ROK, RUS(FS).

**Identification**—Keys, Descriptions: Romankova (1995).

*pedicornis* COCKERELL, 1919

*Osmia (Osmia)*

1919 *Osmia (Pachyosmia) pedicornis* COCKERELL, Proceedings of the United States National Museum (Washington), 55: 182. **Type material**: Holotype ♀, “Soochow” [China], USNM (Washington); paratype ♂.

**Distribution**—Northern Asia: J, RC(CE), ROK, RUS(FS).

**Identification**—Keys, Descriptions: Romankova (1994: 123, 1995); Wu (2006); Yasumatsu and Hirashima (1950).

*quadricornuta* WU, 2004

*Osmia (Osmia)*

2004 *Osmia quadricornuta* WU, Acta Zootaxonomica Sinica, 29: 531. **Type material**: Holotype ♀, “Yunnan, Kunming Xishan (25°N, 102.2°E), 2100 m” [China], IZCAS (Beijing); paratype ♂.

**Distribution**—Northern Asia: RC(SW).

**Identification**—Keys, Descriptions: Wu (2006).

*rufina* COCKERELL, 1931

*Osmia* (*Osmia*)

1931 *Osmia* (*Pachyosmia*) *rufina* COCKERELL, American Museum Novitates (New York), 466: 3. Type material: Holotype ♀, “Zô-Sè” [China], AMNH (New York).

**Distribution**—Northern Asia: RC.

**Identification**—Keys, Descriptions: Wu (2006).

*rufinoides* WU, 2004

*Osmia* (*Osmia*)

2004 *Osmia rufinoides* WU, Acta Zootaxonomica Sinica, 29: 532. Type material: Holotype ♀, “Shanghai” [China], IZCAS (Beijing); paratypes ♀♀.

**Distribution**—Northern Asia: RC(CE).

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*taurus* SMITH, 1873

*Osmia* (*Osmia*)

1873 *Osmia Taurus* SMITH, Transactions of the Entomological Society of London, 1873: 201. Type material: Syntypes ♂(♂), ♀(♀), “Hiogo” [Japan], BMNH (London).

1911 *Osmia matsumurae* COCKERELL, Proceedings of the United States National Museum, 39: 640. Type material: Holotype ♂, “Sapporo” [Japan], USNM (Washington).—Synonymy in Yasumatsu and Hirashima (1950: 2).

**Distribution**—Northern Asia: J, RC, ROK, RUS(FS).

**Identification**—Keys, Descriptions: Romankova (1984, 1995); Wu (2006); Yasumatsu and Hirashima (1950).

*tricornis* LATREILLE, 1811

*Osmia* (*Osmia*)

1811 *Osmia tricornis* LATREILLE, Encyclopédie Méthodique, Histoire Naturelle, Insectes, vol. 8, p. 575. Type material: Syntypes ♂(♂), ♀(♀), “environs d’Aix, Montpellier” [France].—Combination *Osmia* (*Ceratosmia*) *tricornis* LATREILLE in Schmiedeknecht (1885: 19 [885]). Combination *Osmia* (*Pachyosmia*) *tricornis* LATREILLE in Friese (1911b: 126).

**Distribution**—Europe: AND, E, E(Ba), E, F(Co), I, I(Sa), P. **Northern Africa**: DZ, E(Ca), LAR, MA, TN.

**Identification**—Keys, Descriptions: Benoist (1931); Ducke (1900); Peters (1978a); Radoszkowski (1887a: 292); Schmiedeknecht (1885–1886).

*yanbianensis* WU, 2004

*Osmia* (*Osmia*)

2004 *Osmia* (*Osmia*) *yanbianense* WU, Acta Zootaxonomica Sinica, 29: 532. Type material: Holotype ♂, “Jilin, Yanbian (42.9°N, 129.5°E)” [China], IZCAS (Beijing); paratype ♀.

**Distribution**—Northern Asia: RC(NE).

**Identification**—Keys, Descriptions: Wu (2006).

*Osmia* subgenus *Ozbekosmia* ZANDEN

Palaeartic species: 1

*avosetta* WARNCKE, 1988*Osmia* (*Ozbekosmia*)

1988 *Osmia* (*Tergosmia*) *avosetta* WARNCKE, Entomofauna (Ansfelden), 9: 394. Type material: Holotype ♀, “Erçek/Van” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀. Type species of *Ozbekosmia* ZANDEN.—Combination *Osmia* (*Heterosmia*) *avosetta* WARNCKE in Tkalcu (1993a: 56).

**Distribution**—Southwestern Asia: JOR, TR.

**Identification**—Keys, Descriptions: Zanden (1994a: 168).

*Osmia* subgenus *Pyrosmia* TKALCU

Palaeartic species: 30

*amathusica* MAVROMOUSTAKIS, 1937*Osmia* (*Pyrosmia*)

1937 *Osmia* (*Chalcosmia*) *amathusica* MAVROMOUSTAKIS, Annals and Magazine of Natural History (London), 20: 522. Type material: Holotype ♀, “Amathus (ruins)” [Cyprus], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Osmia* (*Diceratosmia*) *amathusica* MAVROMOUSTAKIS in Tkalcu (1969a: 333). Combination *Osmia* (*Caerulosmia*) *amathusica* MAVROMOUSTAKIS in Zanden (1988b: 123).

**Distribution**— Europe: GR, GR(Cr), I(Si). Southwestern Asia: CY, IL, JOR, SYR, TR.

**Identification**—Keys, Descriptions: Mavromoustakis (1956a: 857); Warncke (1992b); Zanden (1991a).

*avedata* WARNCKE, 1992*Osmia* (*Pyrosmia*)

1992 *Osmia* (*Pyrosmia*) *avedata* WARNCKE, Linzer Biologische Beiträge, 24: 901. Type material: Holotype ♀, “Avedat” [Israel], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Southwestern Asia: JOR, IL.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*cephalotes* MORAWITZ, 1870*Osmia* (*Pyrosmia*)

1870 *Osmia* *cephalotes* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 7: 315. Type material: Holotype ♀, “Gallia merid., in der Umgebung von Nizza” [France], ZIN (St. Petersburg).—Combination *Osmia* (*Chalcosmia*) *cephalotes* MORAWITZ in Schmiedeknecht (1885: 20 [886]). Combination *Osmia* (*Caerulosmia*) *cephalotes* MORAWITZ in Zanden (1988b: 123).

1879 *Osmia* *bacillus* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 203. Type material: ♀(♀), “Marseille” [France], MNHN (Paris).—Synonymy with *Osmia longiceps* MORAWITZ in Dalla Torre (1896: 401).

1899 *Osmia* *pulsata* BUYSSON, Annales de la Société Entomologique de France, 68: 668. Type material: Holotype ♂, “Tunis” [Tunisia], MNHN (Paris).—Synonymy in Zanden (1986: 73).

**Distribution**—Europe: ARM, AZ, BG, E, E, GE, GR, H, HR, I, I(Si), P, SLO. Northern Africa: DZ, LAR, MA, TN. Southwestern Asia: CY, IL, IR, JOR, SYR, TR.

**Identification—Keys, Descriptions:** Banaszak and Romasenko (2001); Benoist (1931); Duce (1897: 40); Móczár (1958); Warncke (1992b); Zanden (1991a).

– subspecies *cephalotes* MORAWITZ, 1870

1870 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** E, E, I, I(Si), P. **Northern Africa:** DZ, LAR, MA, TN.

**Identification—Keys, Descriptions:** Duce (1900); Schmiedeknecht (1885–1886); Zanden (1991a).

– subspecies *longiceps* MORAWITZ, 1876

1876 *Osmia longiceps* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 12: 40. **Type material:** Lectotype ♀, by designation of Zanden (1991a: 51), “Borshom” [Georgia], ZIN (St. Petersburg).—Combination *Osmia (Chalcosmia) longiceps* MORAWITZ in Schmiedeknecht (1885: 20 [886]).—Synonymy with *Osmia cephalotes* MORAWITZ in Alfken (1914: 201).—Combination *Osmia (Caerulosmia) cephalotes longiceps* MORAWITZ in Zanden (1988b: 123).

**Distribution—Europe:** ARM, AZ, BG, GE, GR, H, HR, I, SLO. **Southwestern Asia:** CY, IL, IR, JOR, SYR, TR.

**Identification—Keys, Descriptions:** Duce (1900); Schmiedeknecht (1885–1886); Zanden (1991a).

*cyanoxantha* PÉREZ, 1879

*Osmia (Pyrosmia)*

1879 *Osmia cyanoxantha* PÉREZ, Actes de la Société Linnéenne de Bordeaux, 33: 185. **Type material:** Lectotype ♀, by designation of Zanden (1991a: 52), “Marseille” [France], MNHN (Paris); paralectotypes ♂♂, ♀♀.—Combination *Osmia (Chalcosmia) cyanoxantha* PÉREZ in Schmiedeknecht (1885: 20 [886]). Combination *Osmia (Diceratosmia) cyanoxantha* PÉREZ in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) cyanoxantha* PÉREZ in Zanden (1988b: 123).

1991 *Osmia (Caerulosmia) cyanoxura* ZANDEN, Linzer Biologische Beiträge, 23: 53. **Type material:** Holotype ♂, “Erimanthos Mts., Pelop.” [Greece], RMNH (Leiden); paratypes ♂♂, ♀♀.—Synonymy in Warncke (1992b: 909).

1992 *Osmia (Pyrosmia) elbaba* WARNCKE, Linzer Biologische Beiträge, 24: 904. **Type material:** Holotype ♀, “Medjez el Bab” [Tunisia], OLML (Linz); paratype ♀.—Synonymy in Zanden (1996b: 884).

**Distribution—Europe:** ARM, E, E, F(Co), GR, HR, I, I(Si), MK, P, SLO. **Northern Africa:** DZ, MA, TN. **Southwestern Asia:** CY, IL, JOR, SYR, TR.

**Identification—Keys, Descriptions:** Amiet *et al.* (2004); Benoist (1931); Duce (1900); Schmiedeknecht (1885–1886); Warncke (1992b); Zanden (1991a).

*derasa* PÉREZ, 1895

*Osmia (Pyrosmia)*

1895 *Osmia derasa* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 12. **Type material:** Lectotype ♀, by designation of Tkalcu (1970: 9), “Tènet” [Algeria], MNHN (Paris).—Combination *Osmia (Diceratosmia) derasa*

PÉREZ in Tkalcu (1969a: 333). Combination *Osmia* (*Caerulosmia*) *derasa* PÉREZ in Zanden (1988b: 123).

- 1929 *Osmia Crosi* BENOIST, Bulletin de la Société Entomologique de France, 1929: 96. Type material: Lectotype ♂, by designation of Zanden (1985: 55), “Mascara” [Algeria], MNHN (Paris); paralectotype ♂.—Combination *Osmia* (*Diceratosmia*) *croisi* BENOIST in Tkalcu (1969a: 333). Combination *Osmia* (*Caerulosmia*) *croisi* BENOIST in Zanden (1988b: 123).—Synonymy with *Osmia derasa* PÉREZ in Warncke (1992b: 905). Synonymy with *Osmia tricolor* SAUNDERS in Zanden (1995: 429), which is a mistake (T. Griswold, personal communication).
- 1950 *Osmia pseudoderasa* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 30: 184. Type material: Holotype ♀, “Midelt” [Morocco], MZLS (Lausanne).—Synonymy in Zanden (1985: 68).

**Distribution**—Northern Africa: DZ, LAR, MA, TN.

**Identification**—Keys, Descriptions: Tkalcu (1970: 9; 1975a: 183); Zanden (1991a; 1994b: 1120).

– subspecies *derasa* PÉREZ, 1896

- 1896 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Northern Africa: DZ, LAR, MA, TN.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

– subspecies *violetta* WARNCKE, 1992

- 1992 *Osmia* (*Pyrosmia*) *derasa violetta* WARNCKE, Linzer Biologische Beiträge, 24: 905. Type material: Holotype ♀, “Cap Bon” [Tunisia], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Northern Africa: TN.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*dilaticornis* MORAWITZ, 1875

*Osmia* (*Pyrosmia*)

- 1875 *Osmia dilaticornis* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 87. Type material: Holotype ♂, “prope Taschkent” [Uzbekistan], ZMUM (Moscow).—Combination *Osmia* (*Diceratosmia*) *dilaticornis* MORAWITZ in Tkalcu (1969a: 333). Combination *Osmia* (*Caerulosmia*) *dilaticornis* MORAWITZ in Zanden (1988b: 123).

**Distribution**—Europe: GR. Northern Asia: TJ, UZ. Southwestern Asia: IL, JOR, TR.

**Identification**—Keys, Descriptions: Warncke (1992b); Zanden (1989: 85–86, 1991a).

*ferruginea* LATREILLE, 1811

*Osmia* (*Pyrosmia*)

- 1811 *Osmia ferruginea* LATREILLE, Encyclopédie Méthodique, Histoire Naturelle, Insectes, vol. 8, p. 579. Type material: ♀(♀), [Egypt]. Type species of *Pyrosmia* TKALCU.—Combination *Osmia* (*Chalcosmia*) *ferruginea* LATREILLE in Friese (1911b: 109).

- 1849 *Osmia metallica* LUCAS, Exploration scientifique de l’Algérie, p. 191. Type material: Holotype ♀, “environs de Misserghin” [Algeria], MNHN (Paris).—Synonymy in Zanden (1988b: 127).

**Distribution**—Europe: E, F, F(Co), I(Sa), I(Si), M, P; GR. Northern Africa: DZ, ET, LAR, MA, TN. Southwestern Asia: CY, IL, JOR.

**Identification—Keys, Descriptions:** Benoist (1931); Ducke (1900); Warncke (1992b).

– subspecies *ferruginea* LATREILLE, 1811

1811 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** E, F, P. **Northern Africa:** DZ, ET, LAR, MA, TN. **Southwestern Asia:** CY, IL, JOR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *igneopurpurea* COSTA, 1882

1882 *Osmia igneo-purpurea* COSTA, Rendiconti dell'Accademia delle Scienze Fisiche e Matematiche de Napoli, 21: 198. **Type material:** ♀(♀), [Italy: Sardinia].—Synonymy with *Osmia ferruginea* LATREILLE in Tkalcu (1975a: 182).—Combination *Osmia (Pyrosmia) ferruginea igneopurpurea* COSTA in Warncke (1992b: 917).

**Distribution—Europe:** F(Co), I(Sa), I(Si), M.

**Identification—Keys, Descriptions:** Benoist (1931); Ferton (1897: 39); Schmiedeknecht (1885–1886); Warncke (1992b).

*forticornis* ZANDEN, 1989

*Osmia (Pyrosmia)*

1989 *Osmia (Caerulosmia) forticornis* ZANDEN, Entomologische Abhandlungen (Dresden), 53: 85. **Type material:** Holotype ♂, “Chelmos Pelopon., 1900 m” [Greece], RMNH (Leiden); paratypes ♂♂, ♀♀.

**Distribution—Europe:** ARM, GR. **Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** Warncke (1992b); Zanden (1991a).

*gallarum* SPINOLA, 1808

*Osmia (Pyrosmia)*

1808 *Osmia gallarum* SPINOLA, Insectorum Liguria, vol. 2, p. 69. **Type material:** Neotype ♀, by designation of Zanden (1984c: 187), “Venezia-Ciulia” [Italy], RMNH (Leiden).—**Type species** of *Caerulosmia* ZANDEN.—Combination *Osmia (Chalcosmia) gallarum* SPINOLA in Schmiedeknecht (1885: 20 [886]). Combination *Osmia (Diceratosmia) gallarum* SPINOLA in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) gallarum* SPINOLA in Zanden (1988b: 123).

1840 *Osmia ruborum* DUFOUR & PERRIS, Annales de la Société Entomologique de France, 9: 13. **Type material:** Lectotype ♀, by designation of Zanden (1991a: 56), “Gallia meridionali-occidentali (Landes)” [France], MNHN (Paris).—Synonymy in Zanden (1991a: 56).

**Distribution—Europe:** A, AL, BG, CH, CZ, D, E, F, GR, H, HR, I, L, MK, P, PL, RO, RUS, SK, SLO. **Northern Africa:** DZ, MA, TN. **Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Mavroustakis (1956a: 857); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Warncke (1992b); Zanden (1984c: 186–191, 1991a).

– subspecies *gallarum* SPINOLA, 1808

1808 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: A, AL, BG, CH, CZ, D, E, F, GR, H, HR, I, L, MK, P, PL, RO, RUS, SK, SLO. **Southwestern Asia:** TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

– subspecies *lapidistractor* FERTON, 1920

1920 *Osmia lapidistractor* FERTON, Annales de la Société Entomologique de France (Paris), 89: 343. Type material: Holotype ♀, “La Calle” [Algeria], MNHN (Paris).—Synonymy with *Osmia gallarum* SPINOLA in Zanden (1988b: 123).—Combination *Osmia gallarum lapidistractor* FERTON in Warncke (1992b: 904).

**Distribution**—Northern Africa: DZ, MA, TN.

**Identification**—Keys, Descriptions: Warncke (1992b).

*gemmea* PÉREZ, 1896

*Osmia (Pyrosmia)*

1895 *Osmia purpurea* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 11. NOMEN PRAEOCCUPATUM [not *Osmia purpurea* CRESSON, 1864]. Type material: Lectotype ♂, by designation of Zanden (1991a: 57), “Tunis” [Tunisia], MNHN (Paris); paralectotype ♀.

1896 *Osmia gemmea* PÉREZ, Correctures: Espèces nouvelles de mellifères de Barbarie, not paginated single page appendix to Pérez (1895). NOMEN NOVUM with same type specimen for preoccupied *Osmia purpurea* PÉREZ, 1895 [not *Osmia purpurea* CRESSON, 1864].—Combination *Osmia (Chalcosmia) gemmea* PÉREZ in Friese (1911b: 109). Combination *Osmia (Diceratosmia) gemmea* PÉREZ in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) gemmea* PÉREZ in Zanden (1988b: 123).

1899 *Osmia ligulicornis* FRIESE, Entomologische Nachrichten (Berlin), 25: 330. Type material: Lectotype ♀, by designation of Zanden (1987: 78), “Jaffa” [Israel], ZMHB (Berlin).—Synonymy in Zanden (1987: 78).

**Distribution**—Northern Africa: DZ, ET, LAR, TN. **Southwestern Asia:** IL.

**Identification**—Keys, Descriptions: Alfken (1942: 214–215); Warncke (1992b); Zanden (1991a).

*hellados* ZANDEN, 1984

*Osmia (Pyrosmia)*

1984 *Osmia (Diceratosmia) hellados* ZANDEN, Reichenbachia (Dresden), 22: 189. Type material: Holotype ♂, “Palaiokastritsa, Korfu” [Greece], RMNH (Leiden); paratypes ♂♂, ♀♀.—Combination *Osmia (Caerulosmia) hellados* ZANDEN in Zanden (1988b: 115). Combination *Osmia (Pyrosmia) gallarum hellados* ZANDEN in Warncke (1992b: 903). Combination *Osmia hellados* ZANDEN in Standfuss *et al.* (2003: 302).

**Distribution**—Europe: AZ, GE, GR, GR(Cr), I(Si); Yugoslavia. **Southwestern Asia:** CY, IL, JOR, TR.

**Identification**—Keys, Descriptions: Warncke (1992b); Zanden (1991a).



*hermona* WARNCKE, 1992*Osmia (Pyrosmia)*

- 1992 *Osmia (Pyrosmia) hermona* WARNCKE, Linzer Biologische Beiträge, 24: 906. Type material: Holotype ♂, “Mt. Hermon in 2050 m” [Israel], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Northern Asia: TJ. **Southwestern Asia**: IL, SYR, TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*laticauda* STANEK, 1969*Osmia (Pyrosmia)*

- 1969 *Osmia (Chalcosmia) laticauda* STANEK, Nachrichten des Naturwissenschaftlichen Museums der Stadt Aschaffenburg, 78: 5. Type material: Holotype ♂, “Mut-Sertavul, 1410 m” [Turkey], SMFD (Frankfurt).—Combination *Osmia (Caerulosmia) laticauda* STANEK in Zanden (1988b: 123).
- 1992 *Osmia tichodroma* WARNCKE, Linzer Biologische Beiträge, 24: 912. NOMEN NOVUM with same type specimen for preoccupied *Osmia laticauda* STANEK, 1969 [not *Heriades laticaudus* BENOIST, 1938].

**Distribution**—Europe: GR. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Warncke (1992b); Zanden (1991a).

*lobata* FRIESE, 1899*Osmia (Pyrosmia)*

- 1899 *Osmia lobata* FRIESE, Entomologische Nachrichten (Berlin), 25: 63. Type material: Holotype ♂, “Algerien” [Algeria], ZMHB (Berlin).—Combination *Osmia (Chalcosmia) lobata* FRIESE in Friese (1911b: 111). Combination *Osmia (Diceratosmia) lobata* FRIESE in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) lobata* FRIESE in Zanden (1988b: 123).
- 1899 *Osmia leucopyga* DUCKE, Entomologische Nachrichten (Berlin), 25: 214. Type material: Holotype ♀, “Constantine” [Algeria], ZMHB (Berlin).—Combination *Osmia (Caerulosmia) leucopyga* DUCKE in Zanden (1988b: 123).—Synonymy in Warncke (1992b: 910).

**Distribution**—Europe: E, P. **Northern Africa**: DZ, MA, TN. **Southwestern Asia**: IL.

**Identification**—**Keys, Descriptions**: Duce (1900); Zanden (1991a).

*mongolica* MORAWITZ, 1880*Osmia (Pyrosmia)*

- 1880 *Osmia mongolica* MORAWITZ, Bulletin de l'Académie Impériale des Sciences de St.-Petersbourg, 26: 382. Type material: Lectotype ♀, by designation of Tkalcu (1995: 137), “südöstliche Mongolei” [Mongolia], ZIN (St. Petersburg).—Combination *Osmia (Chalcosmia) mongolica* MORAWITZ in Zanden (1988b: 125). Combination *Osmia (Helicosmia) mongolica* MORAWITZ in Wu (2006: 62).
- 1930 *Osmia jacoti lilacina* COCKERELL, The Entomologist (London), 63: 83. Type material: ♀(♀), “Tsinan, near the Shantung Christian University” [China].—Synonymy in Zanden (1988b: 125), but see Tkalcu (1995: 137).

**Distribution**—Northern Asia: MGL, RC(NO).

**Identification**—**Keys, Descriptions**: Duce (1900); Tkalcu (1995: 137–138); Wu (2006).

*moreensis* ZANDEN, 1984*Osmia (Pyrosmia)*

- 1984 *Osmia (Diceratosmia) moreensis* ZANDEN, Reichenbachia (Dresden), 22: 184. Type material: Holotype ♂, “Rodini, Rhodos“ [Greece], RMNH (Leiden); paratypes ♂♂, ♀♀.—Combination *Osmia (Caerulosmia) moreensis* ZANDEN in Zanden (1988b: 123).

**Distribution**—Europe: GR, GR(Cr). **Southwestern Asia**: IL, SYR, TR.

**Identification**—**Keys, Descriptions**: Warncke (1992b); Zanden (1991a).

*nana* MORAWITZ, 1874*Osmia (Pyrosmia)*

- 1874 *Osmia nana* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 10: 152. Type material: Lectotype ♂, by designation of Zanden (1981: 154), “Derbent” [Russia], ZIN (St. Petersburg).—Combination *Osmia (Chalcosmia) nana* MORAWITZ in Friese (1911b: 111). Combination *Osmia (Diceratosmia) nana* MORAWITZ in Zanden (1981: 153). Combination *Osmia (Caerulosmia) nana* MORAWITZ in Zanden (1988b: 123).

- 1934 *Osmia tetrodonta* BENOIST, Bulletin de la Société Entomologique de France, 39: 106. Type material: Holotype ♂, “Asie mineure: Betmeri” [Lebanon], MNHN (Paris).—Synonymy in Zanden (1985: 62).

**Distribution**—Europe: BG, GR, GR(Cr), HR, I, I(Si), RUS(SR); Caucasus. **Northern Africa**: DZ?. **Northern Asia**: Turkestan. **Southwestern Asia**: CY, IL, JOR, RL, SYR, TR.

**Identification**—**Keys, Descriptions**: Ducke (1900); Medvedeva (1978); Stanek (1969a: 39–40); Warncke (1992b); Zanden (1981: 153–156, 1985: 61, 1991a).

*nigricollis* WARNCKE, 1992*Osmia (Pyrosmia)*

- 1992 *Osmia (Pyrosmia) nigricollis* WARNCKE, Linzer Biologische Beiträge, 24: 900. Type material: Holotype ♀, “Semdinli in 1700 m/Hakkari” [Turkey], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*oramara* WARNCKE, 1992*Osmia (Pyrosmia)*

- 1992 *Osmia (Pyrosmia) oramara* WARNCKE, Linzer Biologische Beiträge, 24: 908. Type material: Holotype ♀, “Oramar in 1500 m/Hakkari” [Turkey], OLML (Linz); paratypes ♀♀.

**Distribution**—Southwestern Asia: IR, TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*polkruga* WARNCKE, 1992*Osmia (Pyrosmia)*

- 1992 *Osmia (Pyrosmia) polkruga* WARNCKE, Linzer Biologische Beiträge, 24: 915. Type material: Holotype ♀, “80 km NO Aqaba an der Strasse nach Amman” [Jordan], OLML (Linz).

**Distribution**—Southwestern Asia: JOR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*punica* PÉREZ, 1895

*Osmia (Pyrosmia)*

- 1895 *Osmia punica* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 11. **Type material:** Lectotype ♂, by designation of Zanden (1991a: 61), “Constantine” [Algeria], MNHN (Paris); paralectotypes ♂♂.—Combination *Osmia (Chalcosmia) punica* PÉREZ in Friese (1911b: 113). Combination *Osmia (Diceratosmia) punica* PÉREZ in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) punica* PÉREZ in Zanden (1988b: 124).

**Distribution**—Northern Africa: DZ, ET, LAR, MA, TN.

**Identification**—**Keys, Descriptions:** Ducke (1900); Zanden (1991a).

– subspecies *irherma* WARNCKE, 1992

- 1992 *Osmia (Pyrosmia) punica irherma* WARNCKE, Linzer Biologische Beiträge, 24: 905. **Type material:** Holotype ♀, “50 km OSO Marrakesch” [Morocco], OLML (Linz); paratypes ♀♀.

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

– subspecies *punica* PÉREZ, 1896

- 1896 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Northern Africa: DZ, ET, LAR, MA.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*ramona* WARNCKE, 1992

*Osmia (Pyrosmia)*

- 1992 *Osmia (Pyrosmia) ramona* WARNCKE, Linzer Biologische Beiträge, 24: 903. **Type material:** Holotype ♀, “Wadi Ramon/6 km O Mizpe Ramon” [Israel], OLML (Linz); paratype ♀.

**Distribution**—Southwestern Asia: IL.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*saxicola* DUCKE, 1899

*Osmia (Pyrosmia)*

- 1899 *Osmia saxicola* DUCKE, Entomologische Nachrichten (Berlin), 25: 215. **Type material:** Lectotype ♂, by designation by Peters (Zanden, 1991a: 63), “bei Triest” [Italy], ZMHB (Berlin); paralectotype ♂. **Type species** of *Viridosmia* WARNCKE.—Combination *Osmia (Chalcosmia) saxicola* DUCKE in Friese (1911b: 112). Combination *Osmia (Diceratosmia) saxicola* DUCKE in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) saxicola* DUCKE in Zanden (1988b: 124).

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- 1934 *Osmia caelestina* BENOIST, Bulletin de la Société Entomologique de France, 39: 160. Type material: Holotype ♀, “Asie mineure: Jaffa” [Israel], MNHN (Paris).—Combination *Osmia (Diceratosmia) caelestina* BENOIST in Zanden (1985: 66). Combination *Osmia (Caerulosmia) caelestina* BENOIST in Zanden (1988b: 123).—Synonymy in Warncke (1992b: 907).
- 1937 *Osmia (Chalcosmia) cypricola* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), 20: 520. Type material: Holotype ♀, “Pera Pedi” [Cyprus], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Osmia (Diceratosmia) cypricola* MAVROMOUSTAKIS in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) cypricola* MAVROMOUSTAKIS in Zanden (1988b: 123).—Synonymy in Warncke (1992b: 907).
- 1956 *Osmia (Chalcosmia) posti* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 9: 856. Type material: Holotype ♀, “Jebel el Knaissé, 1700 m” [Lebanon], DAAN (Nicosia); paratype ♂.—Combination *Osmia (Diceratosmia) posti* MAVROMOUSTAKIS in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) posti* MAVROMOUSTAKIS in Zanden (1988b: 124).—Synonymy in Warncke (1992b: 907).

**Distribution**—Europe: E, F, GR, GR(Cr), HR, I, SCG Northern Asia: TJ. Southwestern Asia: CY, IL, JOR, RL, TR.**Identification**—Keys, Descriptions: Ducke (1900); Mavromoustakis (1956a: 857); Warncke (1992b); Zanden (1985: 66, 1991a).– subspecies *riemanni* WARNCKE, 1992

- 1992 *Osmia saxicola riemanni* WARNCKE, Linzer Biologische Beiträge, 24: 908. Type material: Holotype ♀, “Malia/32 km O Heraklion, Kreta” [Greece: Crete], OLML (Linz); paratypes ♀♀.

**Distribution**—Europe: GR(Cr).**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.– subspecies *saxicola* DUCKE, 1899

- 1899 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: E, F, GR, HR, I, SCG Northern Asia: TJ. Southwestern Asia: CY, IL, JOR, RL, TR.**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.*submicans* MORAWITZ, 1870*Osmia (Pyrosmia)*

- 1870 *Osmia submicans* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 7: 314. Type material: Lectotype ♀, by designation of Zanden (1991a: 64), “Tauria” [Ukraine], ZIN (St. Petersburg); paralectotype ♀.—Combination *Osmia (Chalcosmia) submicans* MORAWITZ in Friese (1911b: 113). Combination *Osmia (Diceratosmia) submicans* MORAWITZ in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) submicans* MORAWITZ in Zanden (1988b: 124).
- 1886 *Osmia (Chalcosmia) Giraudi* SCHMIEDEKNECHT, Apidae Europaeae, vol. 2, p. 117 [1983]. Type material: Lectotype ♀, by designation of Zanden (1991a: 64), “Mallorca, Miramar” [Spain: Balearic Islands], ZMHB (Berlin).—Synonymy in Ferton (1908: 539).

**Distribution**—Europe: CH, CZ, D, E, E(Ba), F, F(Co), FL, GR, GR(Cr), H, HR, I, I(Sa), I(Si), M, MK, P, RUS, SK, SLO, UA. Northern

**Africa:** DZ, E(Ca), ET, LAR, MA, TN. **Southwestern Asia:** CY, IL, JOR, RL, TR.

**Identification—Keys, Descriptions:** Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Warncke (1992b); Zanden (1991a).

– subspecies *canaria* MAVROMOUSTAKIS, 1957

1957 *Osmia submicans canaria* MAVROMOUSTAKIS, Societas Scientiarum Fennica, Commentationes Biologicae (Helsinki), 16: 1. **Type material:** Holotype ♀, “Gran Canaria, Arucas” [Spain: Canary Islands], FMNH (Helsinki).—Combination *Osmia (Diceratosmia) canaria* MAVROMOUSTAKIS in Tkalcu (1977c: 97). Combination *Osmia (Pyrosmia) submicans canaria* MAVROMOUSTAKIS in Peters (1975: 50) and in Warncke (1992b: 911).

**Distribution—Northern Africa:** E(Ca).

**Identification—Keys, Descriptions:** Peters (1975: 50, 54–55); Tkalcu (1977c: 97; 1993b: 816–820); Zanden (1991a, 1996b: 892).

– subspecies *columbina* ZANDEN, 1996

1996 *Osmia (Pyrosmia) submicans columbina* ZANDEN, Linzer Biologische Beiträge, 28: 891. **Type material:** Holotype ♀, “Puntagorde, Isla La Palma, Cumbercito” [Spain: Canary Islands], RMNH (Leiden); paratypes ♂♂, ♀.

**Distribution—Northern Africa:** E(Ca).

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

– subspecies *hebraea* BENOIST, 1934

1934 *Osmia hebraea* BENOIST, Bulletin de la Société Entomologique de France, 39: 160. **Type material:** Holotype ♀, “Asie mineure: Jérusalem” [Israel], MNHN (Paris).—Combination *Osmia (Diceratosmia) hebraea* BENOIST in Tkalcu (1969a: 333). Combination *Osmia submicans hebraea* BENOIST in Zanden (1988b: 124).

1969 *Osmia aurantiaca* STANEK, Annalen des Naturhistorischen Museums in Wien, 73: 379. **Type material:** Holotype ♂, “El Doqqi” [Egypt], USNM (Washington); paratypes ♂♂.—Combination *Osmia (Diceratosmia) submicans aurantiaca* STANEK in Tkalcu (1977c: 94).—Synonymy in Zanden (1985: 67).

**Distribution—Europe:** I(Si), M. **Northern Africa:** DZ, ET, LAR, MA, TN. **Southwestern Asia:** CY, IL, JOR, RL, TR.

**Identification—Keys, Descriptions:** Tkalcu (1977c: 94–97); Zanden (1991a, 1996b: 892).

– subspecies *lanzarotae* WARNCKE, 1992

1992 *Osmia (Pyrosmia) submicans lanzarotae* WARNCKE, Linzer Biologische Beiträge, 24: 911. **Type material:** Holotype ♀, “Penas del Chache, Lanzarote” [Spain: Canary Islands], OLML (Linz); paratypes ♀♀.

1993 *Osmia (Caerulosmia) lanzarotensis* TKALCU, Veröffentlichungen des Übersee-Museum Bremen (Naturwissenschaften), 12: 816. **Type material:** Holotype ♀, “Lanzarote 300 m La Florida 10 km NW Arrecife” [Spain: Canary Islands], MICN (Santa Cruz de Tenerife); paratypes ♂♂, ♀♀.—New synonymy based on the original description.

**Distribution—Northern Africa:** E(Ca).

**Identification—Keys, Descriptions:** Zanden (1996b: 892).

– subspecies *submicans* MORAWITZ, 1870

1870 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** CH, CZ, D, E, E(Ba), F, F(Co), FL, GR, GR(Cr), H, HR, I, I(Sa), MK, P, RUS, SK, SLO, UA.

**Identification—Keys, Descriptions:** Mavromoustakis (1957a: 2); Tkalcu (1977c: 97, 1993b: 816–820); Zanden (1996b: 892).

*tadjika* WARNCKE, 1992

*Osmia (Pyrosmia)*

1992 *Osmia (Pyrosmia) tadjika* WARNCKE, Linzer Biologische Beiträge, 24: 901. **Type material:** Holotype ♀, “20 km W Tawil-Dara in 2000 m” [Tajikistan], OLML (Linz); paratype ♀.

**Distribution—Northern Asia:** TJ.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*tawildara* WARNCKE, 1992

*Osmia (Pyrosmia)*

1992 *Osmia (Pyrosmia) tawildara* WARNCKE, Linzer Biologische Beiträge, 24: 900. **Type material:** Holotype ♀, “20 km W Tawil-Dara in 2000 m” [Tajikistan], OLML (Linz); paratype ♀.

**Distribution—Northern Asia:** TJ. **Southwestern Asia:** TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*teunissenii* ZANDEN, 1981

*Osmia (Pyrosmia)*

1981 *Osmia (Diceratosmia) teunissenii* ZANDEN, Reichenbachia (Dresden), 19: 156. **Type material:** Holotype ♂, “Samos, Manolates” [Greece], RMNH (Leiden); paratypes ♂♂, ♀♀.—Combination *Osmia (Caerulosmia) teunissenii* ZANDEN in Zanden (1988b: 124).

**Distribution—Europe:** GR, HR, I. **Southwestern Asia:** CY, IL, JOR, SYR, TR.

**Identification—Keys, Descriptions:** Warncke (1992b); Zanden (1991a).

*versicolor* LATREILLE, 1811

*Osmia (Pyrosmia)*

1811 *Osmia versicolor* LATREILLE, Encyclopédie Méthodique, Histoire Naturelle, Insectes, vol. 8, p. 586. **Type material:** Neotype ♀, by designation of Zanden (1984c: 182), “Cattolica” [Italy], RMNH (Leiden), in original description “près de Marseille” [France], see Warncke (1992b: 915).—Combination *Osmia (Chalcosmia) versicolor* LATREILLE in Schmiedeknecht (1885: 20 [886]). Combination *Osmia (Diceratosmia) versicolor* LATREILLE in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) versicolor* LATREILLE in Zanden (1988b: 124).

**Distribution—Europe:** AL, BG, D, E, E(Ba), F, F(Co), GE, GR, GR(Cr), H, HR, I, I(Si), MK, P, RUS, SLO; CH. **Northern Africa:** DZ,

LAR, MA. **Southwestern Asia:** IL, RL, SYR, TR.

**Identification—Keys, Descriptions:** Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Warncke (1992b); Zanden (1984c: 184, 1991a).

– subspecies *corrusca* ERICHSON, 1835

1835 *Osmia corrusca* ERICHSON, in: Waltl, Reise durch Tirol, Oberitalien und Piemont nach dem südlichen Spanien (Passau), vol. 2, p. 107. **Type material:** Lectotype ♀, by designation of Zanden (1991a: 67), “Andalusien” [Spain], ZMHB (Berlin).—Combination *Osmia (Caerulosmia) versicolor corrusca* ERICHSON in Zanden (1988b: 124).

1857 *Megachile laeta* GISTEL, Vacuna, 2: 564. NOMEN PRAEOCCUPATUM (not *Megachile laeta* SMITH, 1853). **Type material:** ♀(♀), “Algarbia” [Portugal].—Synonymy in Warncke (1992b: 916).

1917 *Megachile algarbiensis* STRAND, Archiv für Naturgeschichte, 82: 98. NOMEN NOVUM with same type specimen for preoccupied *Megachile laeta* GISTEL, 1857 [not *Megachile laeta* SMITH, 1853].

**Distribution—Europe:** E, E(Ba), F(Co), P; ~~H(Si)~~. **Northern Africa:** DZ, LAR, MA.

**Identification—Keys, Descriptions:** Warncke (1992b); Zanden (1984c: 183, 1991a).

– subspecies *versicolor* LATREILLE, 1811

1811 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution—Europe:** AL, BG, D, E, F, GE, GR, GR(Cr), H, HR, I, I(Si), MK, P, RUS, SLO.

**Identification—Keys, Descriptions:** Warncke (1992b).

– subspecies *viricephalica* WARNCKE, 1992

1992 *Osmia (Pyrosmia) versicolor viricephalica* WARNCKE, Linzer Biologische Beiträge, 24: 916. **Type material:** Holotype ♀, “Efes/Aydin” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution—Southwestern Asia:** IL, RL, SYR, TR.

**Identification—Keys, Descriptions:** No supplementary or more detailed morphological description known.

*viridana* MORAWITZ, 1874

*Osmia (Pyrosmia)*

1874 *Osmia viridana* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 10: 150. **Type material:** Lectotype ♀, by designation of Zanden (1984c: 183), “Derbent” [Russia], ZIN (St. Petersburg); paralectotypes ♂♂.—Combination *Osmia (Chalcosmia) viridana* MORAWITZ in Schmiedeknecht (1885: 20 [886]). Combination *Osmia (Diceratosmia) viridana* MORAWITZ in Tkalcu (1969a: 333). Combination *Osmia (Caerulosmia) viridana* MORAWITZ in Zanden (1988b: 124).

1896 *Osmia angulata* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 11. **Type material:** Lectotype ♂, see Warncke (1992b: 913), “Marseille” [France], MNHN (Paris).—Combination *Osmia (Diceratosmia) angulata* PÉREZ in Tkalcu (1969a: 333).—Synonymy in Zanden (1991a: 68).



- 1984 *Osmia (Diceratosmia) viridana mulleolus* ZANDEN, Reichenbachia (Dresden), 22: 184. Type material: Holotype ♀, “Kavarna” [Bulgaria], RMNH (Leiden); paratypes ♂♂, ♀♀.—Combination *Osmia (Caerulosmia) viridana mulleolus* ZANDEN in Zanden (1988b: 124).—Synonymy in Warncke (1992b: 913).

**Distribution**—Europe: BG, CH, D, E, F, GR, GR(Cr), HR, I, MK, RUS(SR), SLO, UA; Caucasus. **Northern Africa**: DZ, TN. **Northern Asia**: KS, TJ, TM, UZ. **Southwestern Asia**: CY, IL, JOR, SYR, TR.

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Medvedeva (1978); Móczár (1958); Scheuchl (1996); Schmiedeknecht (1885–1886); Warncke (1992b); Zanden (1984c: 184, 1991a).

– subspecies *nicosiana* MAVROMOUSTAKIS, 1939

- 1939 *Osmia (Chalcosmia) nicosiana* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 11, 3: 155. Type material: Holotype ♀, “Ayia Phyla” [Cyprus], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Osmia (Caerulosmia) nicosiana* MAVROMOUSTAKIS in Zanden (1988b: 124). Combination *Osmia (Pyrosmia) viridana nicosiana* MAVROMOUSTAKIS in Warncke (1992b: 913).

**Distribution**—Southwestern Asia: CY.

**Identification**—**Keys, Descriptions**: Warncke (1992b); Zanden (1991a).

– subspecies *rufispina* MORAWITZ, 1875

- 1875 *Osmia rufispina* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 83. Type material: Holotype ♀, “in valle Sarafschan” [Tajikistan], ZMUM (Moscow).—Combination *Osmia (Caerulosmia) rufispina* MORAWITZ in Zanden (1988b: 124). Combination *Osmia (Pyrosmia) viridana rufispina* MORAWITZ in Warncke (1992b: 913).

**Distribution**—Northern Asia: KS, TJ, TM, UZ.

**Identification**—**Keys, Descriptions**: Warncke (1992b); Zanden (1991a). **Note**: Male unknown.

– subspecies *viridana* MORAWITZ, 1874

- 1874 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: BG, CH, D, E, F, GR, GR(Cr), HR, I, MK, RUS(SR), SLO, UA; Caucasus. **Northern Africa**: DZ, TN. **Southwestern Asia**: IL, JOR, SYR, TR.

**Identification**—**Keys, Descriptions**: Zanden (1991a).

*zarzisa* WARNCKE, 1992

*Osmia (Pyrosmia)*

- 1992 *Osmia (Pyrosmia) zarzisa* WARNCKE, Linzer Biologische Beiträge, 24: 913. Type material: Holotype ♂, “30 km S Zarzis” [Tunisia], OLML (Linz); paratypes ♂♂, ♀.

**Distribution**—Northern Africa: TN.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*Osmia* subgenus *Tergosmia* WARNCKE

Palearctic species: 6

*agilis* MORAWITZ, 1875*Osmia* (*Tergosmia*)

1875 *Osmia agilis* MORAWITZ, Travel to Turkestan by A. P. Fedtschenko, p. 88. Type material: Lectotype ♀, by designation of Zanden (1991a: 48), “Tschardara” [Kazakhstan], ZMUM (Moscow); paralectotypes ♂♂, ♀♀.—Combination *Osmia* (*Chalcosmia*) *agilis* MORAWITZ in Friese (1911b: 110). Combination *Osmia* (*Diceratosmia*) *agilis* MORAWITZ in Tkalcu (1969a: 333). Combination *Osmia* (*Caerulosmia*) *agilis* MORAWITZ in Zanden (1988b: 123).

**Distribution**—Northern Asia: KZ, TJ, TM, UZ.

**Identification**—Keys, Descriptions: Ducke (1900); Warncke (1992b: 917); Zanden (1991a).

*glareola* WARNCKE, 1988*Osmia* (*Tergosmia*)

1988 *Osmia* (*Tergosmia*) *glareola* WARNCKE, Entomofauna (Ansfelden), 9: 393. Type material: Holotype ♀, “Erçek/Van” [Turkey], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*lunata* BENOIST, 1928*Osmia* (*Tergosmia*)

1928 *Osmia lunata* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 8: 213. Type material: Lectotype ♂, by designation of Zanden (1985: 53), “environs de Rabat” [Morocco], MNHN (Paris); paralectotype ♂.—Combination *Anthocopa* (*Anthocopa*) *lunata* (BENOIST) in Zanden (1985: 53).

**Distribution**—Europe: E, F Northern Africa: MA.

**Identification**—Keys, Descriptions: Benoist (1931); Warncke (1988b); Zanden (1985: 54).

*pratincola* WARNCKE, 1988*Osmia* (*Tergosmia*)

1988 *Osmia* (*Tergosmia*) *pratincola* WARNCKE, Entomofauna (Ansfelden), 9: 392. Type material: Holotype ♀, “20 km N Patnos/Agri, 1650 m” [Turkey], OLML (Linz); paratypes ♂(♂), ♀(♀).

**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*rhodoensis* (ZANDEN, 1983)*Osmia* (*Tergosmia*)

1983 *Anthocopa rhodoensis* ZANDEN, Faunistische Abhandlungen (Dresden), 10: 126. Type material: Holotype ♂, “Profitis Ilias, Rhodos” [Greece], RMNH (Leiden); paratypes ♂♂, ♀♀.

**Distribution**—Europe: GR. Southwestern Asia: JOR, TR.

**Identification**—Keys, Descriptions: Warncke (1988b).

– subspecies *arquata* WARNCKE, 1988

1988 *Osmia (Tergosmia) rhodoensis arquata* WARNCKE, Entomofauna (Ansfelden), 9: 391. Type material: Holotype ♀, “südlich Rize, 1800 m” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.—Validity of this subspecies doubted by Özbek and Zanden (1992a: 18).

**Distribution**—Southwestern Asia: JOR?, TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

– subspecies *ferina* WARNCKE, 1988

1988 *Osmia (Tergosmia) rhodoensis ferina* WARNCKE, Entomofauna (Ansfelden), 9: 391. Type material: Holotype ♀, “Delphi” [Greece], OLML (Linz); paratypes ♂♂.

**Distribution**—Europe: GR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

– subspecies *rhodoensis* (ZANDEN, 1983)

1983 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: GR. Southwestern Asia: TR.

**Identification**—Keys, Descriptions: Warncke (1988b).

*tergestensis* DUCKE, 1897

*Osmia (Tergosmia)*

1897 *Osmia tergestensis* DUCKE, Entomologische Nachrichten (Berlin), 23: 41. Type material: Lectotype ♀, by designation of Zanden (1983: 125), “Triest” [Italy], ZMHB (Berlin); paralectotype ♂. Type species of *Tergosmia* WARNCKE.—Combination *Osmia (Osmia) tergestensis* DUCKE in Friese (1911b: 91). Combination *Anthocopa tergestensis* (DUCKE) in Zanden (1983: 125).

1922 *Osmia wolhynica* NOSKIEWICZ, Polskie Pismo Entomologiczne, 1: 9. Type material: Syntypes ♂♂, “Lösstal bei Krasny Staw in der Nähe von Lublin” [Poland].—Synonymy in Warncke (1988b: 392).

**Distribution**—Europe: A, BG, CH, CZ, E, F, GR, H, I, PL, SK, SLO, UA. Northern Africa: ET, MA. Southwestern Asia: TR.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Banaszak and Romasenko (2001); Benoist (1931); Ducke (1900); Móczár (1958); Scheuchl (1996); Warncke (1988b); Zanden (1983: 126–129).

– subspecies *ononidis* FERTON, 1897

1897 *Osmia ononidis* FERTON, Actes de la Société Linnéenne de Bordeaux, 52: 44. Type material: Lectotype ♀, by designation of Tkalcu (1979: 319), “Massenienie” [France], MNHN (Paris).—Combination *Osmia (Tergosmia) tergestensis ononidis* FERTON in Warncke (1988b: 392).

1902 *Osmia Rondoui* PÉREZ, Procès-verbaux de la Société Linnéenne de Bordeaux, 57: 66. Type material: Lectotype

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♀, by designation of Tkalcu (1979: 329), “Gèdre” [France], MNHN (Paris).—Synonymy in Warncke (1988b: 392).

1934 *Osmia atlantica* BENOIST, Bulletin de la Société Entomologique de France, 39: 107. Type material: Holotype ♀, “Asni” [Morocco], MNHN (Paris).—Synonymy in Zanden (1985: 63).

1979 *Anthocopa tergestensis remota* TKALCU, Acta Entomologica Bohemoslovaca (Praha), 76: 320. Type material: Holotype ♀, “O-Türkei” [Turkey], EMET (Erzurum); paratypes ♂♂, ♀♀.—Synonymy in Warncke (1988b: 392).

**Distribution**—Europe: CH, E, F. Northern Africa: ET, MA. Southwestern Asia: TR.

**Identification**—Keys, Descriptions: Warncke (1988b).

– subspecies *tergestensis* DUCKE, 1897

1897 Automatically established nominotypical subspecific taxon (original description and type specimen are identical with those of the species rank taxon of the same name above).

**Distribution**—Europe: A, BG, CZ, GR, H, I, PL, SK, SLO, UA.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

Genus *Protosmia* DUCKE

Palearctic subgenera: 3 Palaeartic species: 24

Subgeneric placement uncertain

Palaeartic species: 2

*judaica* (MAVROMOUSTAKIS, 1948)

*Protosmia*

1948 *Heriades judaica* MAVROMOUSTAKIS, The Annals and Magazine of Natural History (London), ser. 12, 1: 180. Type material: Holotype ♀, “Palestine: Jerusalem” [Israel], DAAN (Nicosia).

**Distribution**—Southwestern Asia: IL.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*megaceps* (KOHL, 1906)

*Protosmia*

1906 *Osmia megaceps* KOHL, Zoologische Ergebnisse der Expedition der Kaiserlichen Akademie der Wissenschaften nach Südarabien und Sokotra im Jahre 1898–1899: Hymenopteren, 182. Type material: Syntypes ♂(♂), ♀(♀), “Sokotra (Ras Shoab)”, NMW (Wien).

**Distribution**—Southwestern Asia: Y(So).

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*Protosmia* subgenus *Chelostomopsis* COCKERELL

Palearctic species: 2

*capitata* (SCHLETTERER, 1889)

*Protosmia (Chelostomopsis)*

- 1889 *Chelostoma capitatum* SCHLETTERER, Zoologisches Jahrbuch für Systematik, 4: 647. Type material: ♀(?), “Nord-Afrika (Algier)” [Algeria].—Combination *Heriades capitatus* (SCHLETTERER) in Friese (1911b: 17). Combination *Chelostomopsis capitatus* (SCHLETTERER) in Tkalcu (1975a: 176).
- 1895 *Chelostoma mystax* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 20. Type material: Syntypes ♂♂, [Algeria], MNHN (Paris).—Combination *Heriades mystax* (PÉREZ) in Friese (1911b: 22).—Synonymy in Benoist (1928d: 107).
- 1897 *Eriades trilobatus* FRIESE, Entomologische Nachrichten (Berlin), 23: 194. Type material: Syntypes ♂♂, “Algeria” [Algeria], ZMHB (Berlin) and NMW (Wien).—Synonymy in Benoist (1928d: 108).

**Distribution**—Europe: E, P. Northern Africa: DZ, MA, TN.

**Identification**—Keys, Descriptions: Friese (1898).

*longiceps* (FRIESE, 1899)

*Protosmia (Chelostomopsis)*

- 1899 *Eriades longiceps* FRIESE, Entomologische Nachrichten (Berlin), 25: 326. Type material: Lectotype ♀, by designation of Griswold (1994a: 26), “Libanon” [Lebanon], ZMHB (Berlin).
- 1928 *Heriades depauperata* BENOIST, Bulletin du Muséum d'Histoire Naturelle Paris, 34: 334. Type material: Holotype ♀, “Anatolie” [Turkey], MNHN (Paris).—Synonymy in Griswold (1994a: 26).

**Distribution**—Europe: GR. Southwestern Asia: IL, JOR, RL, TR.

**Identification**—Keys, Descriptions: Griswold (1994a: 26); Mavromoustakis (1955b: 333–334).

*Protosmia* subgenus *Nanosmia* GRISWOLD

Palearctic species: 7

*asensioi* GRISWOLD & PARKER, 1987

*Protosmia (Nanosmia)*

- 1987 *Protosmia asensioi* GRISWOLD & PARKER, Psyche, 94: 51. Type material: Holotype ♂, “San Miguel de Bernuy, 14 km N Cantalejo” [Spain], USNM (Washington); paratypes ♂♂, ♀♀. Type species of *Nanosmia* GRISWOLD.

**Distribution**—Europe: E.

**Identification**—Keys, Descriptions: Zanden (1994b: 1116).

*decipiens* (BENOIST, 1935)

*Protosmia (Nanosmia)*

- 1935 *Heriades decipiens* BENOIST, Bulletin de la Société Entomologique de France, 40: 278. Type material: Holotype ♀, “Tafingoult, dans le Grand-Atlas” [Morocco], MNHN (Paris).—Combination *Protosmia (Rhodosmia) decipiens* (BENOIST) in Zanden (1988b: 127).

**Distribution**—Northern Africa: MA.

**Identification**—Keys, Descriptions: Griswold and Parker (1987: 55). **Note**: Male unknown.

*devia* TKALCU, 1978*Protosmia (Nanosmia)*

- 1978 *Protosmia (Rhodosmia) devia* TKALCU, Casopis Slezského Muzea Opava (A), 27: 158. Type material: Holotype ♀, “Kashmir: Gulmarg” [India], BMNH (London).

**Distribution**—Southwestern Asia: PAK. **Extralimital**: Oriental (India).

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*limbata* (BENOIST, 1935)*Protosmia (Nanosmia)*

- 1935 *Heriades limbata* BENOIST, Bulletin de la Société Entomologique de France, 40: 278. Type material: Holotype ♀, “Syrie: Ksara” [Lebanon], MNHN (Paris).—Combination *Protosmia (Rhodosmia) limbata* (BENOIST) in Zanden (1985: 67). Combination *Protosmia (Protosmia) limbata* (BENOIST) in Zanden (1988b: 127).

**Distribution**—Southwestern Asia: RL, SYR, TR.

**Identification**—**Keys, Descriptions**: Griswold and Parker (1987: 55); Mavromoustakis (1955b: 332); Zanden (1994b: 1116). **Note**: Male unknown.

*minutula* (PÉREZ, 1896)*Protosmia (Nanosmia)*

- 1895 *Osmia pumila* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 18. NOMEN PRAEOCCUPATUM [not *Osmia pumila* CRESSON, 1864]. Type material: Syntypes ♂♂, ♀, “Marseille” [France], “Sicily” [Italy], MNHN (Paris).
- 1896 *Osmia minutula* PÉREZ, Correctures: Espèces nouvelles de mellifères de Barbarie, not paginated single page appendix. NOMEN NOVUM with same type specimen for preoccupied *Osmia pumila* PÉREZ, 1896 [not *Osmia pumila* CRESSON, 1864].—Combination *Heriades (Micreriades) minutulus* (PÉREZ) in Mavromoustakis (1958: 445). Combination *Hoplitis (Micreriades) minutula* (PÉREZ) in Tkalcu (1977c: 88). Combination *Heriades minutulus* (PÉREZ) in Zanden (1986: 67).
- 1921 *Osmia cataniae* STRAND, Archiv für Naturgeschichte, 87: 321. Type material: Holotype ♂, “Catania” [Italy: Sicily], DEI (Müncheberg).—Synonymy in Zanden (1986: 67).

**Distribution**—Europe: CH, E, F, I(Si).

**Identification**—**Keys, Descriptions**: Amiet *et al.* (2004); Benoist (1929a); Ducke (1900); Griswold and Parker (1987: 55); Zanden (1986: 67, 1994b: 1116).

*pulex* (BENOIST, 1935)*Protosmia (Nanosmia)*

- 1935 *Heriades pulex* BENOIST, Bulletin de la Société Entomologique de France, 40: 278. Type material: Holotype ♂, “Syrie: Jaffa” [Israel], MNHN (Paris).—Combination *Hoplitis (Micreriades) pulex* (BENOIST) in Zanden (1985: 67).

**Distribution**—Southwestern Asia: IL.

**Identification**—**Keys, Descriptions**: Griswold and Parker (1987: 55); Zanden (1994b: 1116). **Note**: Female unknown.

*querquedula* ZANDEN, 1994*Protosmia* (*Nanosmia*)

- 1994 *Protosmia querquedula* ZANDEN, Linzer Biologische Beiträge, 26: 1115. Type material: Holotype ♂, “Sfax, 30 km S.W.” [Tunisia], Schwarz Collection (Ansfelden); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: TN.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*Protosmia* subgenus *Protosmia* DUCKE

Palaeartic species: 13

*exenterata* (PÉREZ, 1895)*Protosmia* (*Protosmia*)

- 1895 *Osmia exenterata* PÉREZ, in: Fertou, Actes de la Société Linnéenne de Bordeaux, 47: 213. Type material: Syntypes ♂(♂), ♀(♀), “Bizerte” [Tunisia], “Téniet el Haad” [Algeria], “Sicile” [Italy: Sicily], MNHN (Paris).—Combination *Osmia* (*Protosmia*) *exenterata* PÉREZ in Friese (1911b: 70). Combination *Protosmia* (*Rhodosmia*) *exenterata* (PÉREZ) in Zanden (1988b: 127).

**Distribution**—Europe: E, F, I(Si), P. Northern Africa: DZ, MA, TN. Southwestern Asia: TR?.

**Identification**—Keys, Descriptions: Duce (1900); Stanek (1969a: 15–16).

*glutinosa* (GIRAUD, 1871)*Protosmia* (*Protosmia*)

- 1871 *Heriades glutinosus* GIRAUD, Annales de la Société Entomologique de France, ser. 5, 1: 389. Type material: Syntypes ♂(♂), ♀(♀), “près de Saragosse” [Spain]. Type species of *Protosmia* DUCKE.—Combination *Osmia* (*Protosmia*) *glutinosa* (GIRAUD) in Friese (1911b: 68).

**Distribution**—Europe: BG, E, F, GR, HR, I, SLO; Caucasus. Northern Africa: DZ, MA. Southwestern Asia: CY, TR.

**Identification**—Keys, Descriptions: Amiet *et al.* (2004); Benoist (1929a); Duce (1900); Stanek (1969a: 13–14).

*humeralis* (PÉREZ, 1895)*Protosmia* (*Protosmia*)

- 1895 *Osmia humeralis* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 18. Type material: Syntypes ♂(♂), ♀(♀), [Algeria], MNHN (Paris).—Combination *Osmia* (*Protosmia*) *humeralis* PÉREZ in Friese (1911b: 69).

**Distribution**—Europe: E. Northern Africa: DZ. Southwestern Asia: IL, JOR, TR.

**Identification**—Keys, Descriptions: Duce (1900).

*luctuosa* (LUCAS, 1849)*Protosmia* (*Protosmia*)

- 1849 *Osmia luctuosa* LUCAS, Exploration scientifique de l'Algérie, p. 190. Type material: Holotype ♀, “les environs de Constantine” [Algeria], MNHN (Paris).

- 1895 *Osmia cavigena* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 19. Type material: Syntypes ♂♂, [Algeria], MNHN (Paris).—Combination *Osmia* (*Protosmia*) *cavigena* PÉREZ in Friese (1911b: 69).—Synonymy in Benoist (1950b: 183).



**Distribution**—Northern Africa: DZ, MA.

**Identification**—Keys, Descriptions: Duce (1900).

*magnicapitis* (STANEK, 1969)

*Protosmia* (*Protosmia*)

- 1969 *Osmia* (*Protosmia*) *magnicapitis* STANEK, Nachrichten des Naturwissenschaftlichen Museums der Stadt Aschaffenburg, 78: 7. **Type material**: Holotype ♀, “Birecik” [Turkey], SMFD (Frankfurt).

**Distribution**—Southwestern Asia: TR.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Male unknown.

*monstrosa* (PÉREZ, 1895)

*Protosmia* (*Protosmia*)

- 1895 *Osmia monstrosa* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 19. **Type material**: Syntypes ♂♂, [Algeria], presumed lost (Griswold, 1985: 121).—Combination *Osmia* (*Protosmia*) *monstrosa* PÉREZ in Friese (1911b: 70).
- 1899 *Osmia mirabilis* FRIESE, Entomologische Nachrichten (Berlin), 25: 330. **Type material**: Syntypes ♂(♂), ♀(♀), “Brumana” [Lebanon], “Jerusalem” [Israel], OUMNH (Oxford) and ZMHB (Berlin).—Synonymy in Alfken (1935b: 175).

**Distribution**— Europe: GR. Northern Africa: DZ. Southwestern Asia: CY, IL, JOR, RL, SYR, TR.

**Identification**—Keys, Descriptions: Duce (1900).

*octomaculata* (PÉREZ, 1895)

*Protosmia* (*Protosmia*)

- 1895 *Osmia octomaculata* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 17. **Type material**: Syntypes ♀♀, [Algeria], MNHN (Paris).—Combination *Osmia* (*Protosmia*) *octomaculata* PÉREZ in Friese (1911b: 69).

**Distribution**—Northern Africa: DZ, TN.

**Identification**—Keys, Descriptions: Duce (1900). **Note**: Male unknown.

*paradoxa* (FRIESE, 1899)

*Protosmia* (*Protosmia*)

- 1899 *Osmia paradoxa* FRIESE, Entomologische Nachrichten (Berlin), 25: 328. **Type material**: Lectotype ♂, by designation by Peters (Tkalcu, 1978: 158), “Brumana” [Lebanon], ZMHB (Berlin); paralectotype ♀. **Type species** of *Rhodosmia* MICHENER.—Combination *Heriades* (*Protosmia*) *paradoxa* (FRIESE) in Zanden (1980: 229). Combination *Protosmia* (*Rhodosmia*) *paradoxa* FRIESE in Zanden (1988b: 127).

**Distribution**— Europe: GR. Southwestern Asia: CY, IL, JOR, RL, SYR, TR.

**Identification**—Keys, Descriptions: Popov (1961: 365); Tkalcu (1978: 154–158).

*sideritis* TKALCU, 1978

*Protosmia* (*Protosmia*)

- 1978 *Protosmia* (*Rhodosmia*) *sideritis* TKALCU, Casopis Slezského Muzea Opava (A), 27: 154. **Type material**: Holo-

type ♂, “Bulgaria sept.-or. Albena” [Bulgaria], Tkalcu Collection (Praha); paratypes ♂♂, ♀♀.

**Distribution**—Europe: BG, GR. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*stelidoides* (PÉREZ, 1895)

*Protosmia* (*Protosmia*)

1895 *Osmia stelidoides* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 17. **Type material**: Syntypes ♀♀, [Algeria], presumed lost (Griswold, 1985: 122).—Combination *Osmia* (*Protosmia*) *stelidoides* PÉREZ in Friese (1911b: 70). Combination *Protosmia* (*Rhodosmia*) *stelidoides* (PÉREZ) in Zanden (1988b: 127).

**Distribution**—Northern Africa: DZ, MA.

**Identification**—**Keys, Descriptions**: Ducke (1900). **Note**: Male unknown.

*stigmatica* (PÉREZ, 1895)

*Protosmia* (*Protosmia*)

1895 *Osmia stigmatica* PÉREZ, Espèces nouvelles de mellifères de Barbarie, p. 17. **Type material**: ♀(?), [Algeria], MNHN (Paris).—Combination *Osmia* (*Protosmia*) *stigmatica* PÉREZ in Friese (1911b: 69). Combination *Protosmia* (*Rhodosmia*) *stigmatica* (PÉREZ) in Zanden (1988b: 127).—Synonymy with *Protosmia tiflensis* (MORAWITZ) in Griswold (1985: 122), not followed by subsequent authors.

**Distribution**—Europe: E, F, GR. **Northern Africa**: MA, DZ. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Ducke (1900); Stanek (1969a: 17–18). **Note**: Male unknown.

*tauricola* POPOV, 1961

*Protosmia* (*Protosmia*)

1961 *Protosmia tauricola* POPOV, Zoologicheskij Zhurnal (Moscow), 40: 364. **Type material**: Syntypes ♂(♂), ♀(?), “Crimea” [Ukraine], ZIN (St. Petersburg).—Combination *Protosmia* (*Rhodosmia*) *tauricola* POPOV in Zanden (1988b: 128).

**Distribution**—Europe: BG, RUS, UA. **Southwestern Asia**: TR.

**Identification**—**Keys, Descriptions**: Banaszak and Romasenko (2001); Medvedeva (1978).

*tiflensis* (MORAWITZ, 1876)

*Protosmia* (*Protosmia*)

1876 *Osmia tiflensis* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 12: 45. **Type material**: Holotype ♀, “Tiflis, im botanischen Garten” [Georgia], ZIN (St. Petersburg).—Combination *Osmia* (*Protosmia*) *tiflensis* MORAWITZ in Friese (1911b: 68). Combination *Protosmia* (*Rhodosmia*) *tiflensis* (MORAWITZ) in Zanden (1988b: 128).

1890 *Osmia* (*Acanthosmia*) *Gräffei* SCHMIEDEKNECHT, Atti del Museo Civico di Storia Naturale di Trieste, 8: 137. **Type material**: Syntypes ♂(♂), ♀(?), “giardini del Campo Marzio” [Italy], NMW (Wien).—Combination *Osmia* (*Protosmia*) *graeffei* SCHMIEDEKNECHT in Friese (1911b: 70).—Synonymy in Popov (1961: 363).

**Distribution**—Europe: BG, GE, GR, HR, I, RUS, UA. **Southwestern Asia**: IL, JOR, TR.

**Identification**—**Keys, Descriptions**: Banaszak and Romasenko (2001); Ducke (1900); Medvedeva (1978); Popov (1961: 363–364). Schmiedeknecht (1885–1886).

Genus *Pseudoheriades* PETERS

Palaeartic subgenera: – Palaeartic species: 2

*grandiceps* PETERS, 1988*Pseudoheriades*

1988 *Pseudoheriades (Pseudoheriades) grandiceps* PETERS, Entomologische Zeitschrift, 98: 74. Type material: Holotype ♀, “Iran: Belutschistan: Iranshar, 800m” [Iran], SMNS (Stuttgart); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: IR, PAK, SA, UAE. **Extralimital**: Oriental (India).

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*moricei* (FRIESE, 1897)*Pseudoheriades*

1897 *Eriades moricei* FRIESE, Entomologische Berichte (Berlin), 23: 194. Type material: Lectotype ♂, by designation of Griswold (1994a: 27), “Koubbek” [Egypt], ZMHB (Berlin). Type species of *Pseudoheriades* PETERS.

**Distribution**—Northern Africa: DZ, ET. **Southwestern Asia**: IL, JOR. **Extralimital**: Afrotropic (Chad, Ethiopia, Mauritania, Sudan).

**Identification**—**Keys, Descriptions**: Friese (1898, 1911b); Peters (1970a: 155, 1988).

Genus *Stenoheriades* TKALCU

Palaeartic subgenera: – Palaeartic species: 5

*asiaticus* (FRIESE, 1921)*Stenoheriades*

1921 *Heriades asiaticus* FRIESE, Archiv für Naturgeschichte, 87: 175. Type material: Syntypes ♂♂, “Airan” [Turkey].—Combination *Pseudoheriades (Stenoheriades) asiaticus* (FRIESE) in Tkalcu (1984b: 1).

1935 *Heriades coelostoma* BENOIST, Bulletin de la Société Entomologique de France, 40: 277. Type material: ♀(?), “Asie mineure: Taurus” [Turkey], MNHN (Paris).—Combination *Pseudoheriades (Stenoheriades) coelostomus* (BENOIST) in Tkalcu (1984b: 1).—Synonymy in Griswold (1994a: 18).

**Distribution**—Europe: BG, GR, HR. **Southwestern Asia**: IL, JOR, RL, SYR, TR.

**Identification**—**Keys, Descriptions**: Mavromoustakis (1955b: 334–335); Tkalcu (1984b: 5).

*ingeddicus* GRISWOLD, 1994*Stenoheriades*

1994 *Stenoheriades ingeddicus* GRISWOLD, Journal of the Kansas Entomological Society, 67: 18. Type material: Holotype ♂, “Ejn Geddi Palestine” [Israel], DAAN (Nicosia); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: IL, JOR, OM.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*hofferi* (TKALCU, 1984)*Stenoheriades*

1984 *Pseudoheriades (Stenoheriades) hofferi* TKALCU, Annotationes Zoologicae et Botanicae (Bratislava), 158: 2. Type material: Holotype ♂, “Bulgaria mer.-occ. Peju Javorov (im Struma-Tal)” [Bulgaria], Tkalcu Collection (Praha). Type species of *Stenoheriades* TKALCU.

**Distribution**—Europe: BG Southwestern Asia: TR.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Female unknown.

*integer* (BENOIST, 1934)

*Stenoheriades*

1934 *Heriades integer* BENOIST, Bulletin de la Société Entomologique de France, 39: 159. Type material: Holotype ♂, “Tanger” [Morocco], MNHN (Paris).

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Female unknown.

*maroccanus* (BENOIST, 1928)

*Stenoheriades*

1928 *Heriades maroccana* BENOIST, Bulletin de la Société des Sciences Naturelles du Maroc (Rabat), 8: 212. Type material: Syntypes ♂(♂), ♀(♀), “Aïn Leuh” [Morocco], MNHN (Paris).

**Distribution**—Northern Africa: MA.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

Genus *Stenosmia* MICHENER

Palearctic subgenera: – Palearctic species: 10

*albaterra* (WARNCKE, 1991)

*Stenosmia*

1991 *Osmia (Stenosmia) albaterra* WARNCKE, Entomofauna (Ansfelden), 12: 405. Type material: Holotype ♀, “Albaterra/südwestlich Alicante” [Spain], OLML (Linz).

**Distribution**—Europe: E.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known. **Note:** Male unknown.

*aravensis* ZANDEN, 1992

*Stenosmia*

1992 *Stenosmia aravensis* ZANDEN, Linzer Biologische Beiträge, 24: 822. Type material: Holotype ♂, “4 km W of Hazewa, Arava” [Israel], RMNH (Leiden); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: IL, SYR.

**Identification**—**Keys, Descriptions:** Zanden (1992c: 824).

*denticulata* ZANDEN, 1992

*Stenosmia*

1992 *Stenosmia denticulata* ZANDEN, Linzer Biologische Beiträge, 24: 823. Type material: Holotype ♂, “5 km NW of Irovat, Negev” [Israel], RMNH (Leiden); paratypes ♂♂, ♀.

**Distribution**—Southwestern Asia: IL.

**Identification**—**Keys, Descriptions:** No supplementary or more detailed morphological description known.

*flavicornis* (MORAWITZ, 1877)*Stenosmia*

- 1877 *Osmia flavicornis* MORAWITZ, Horae Societatis Entomologicae Rossicae (St. Petersburg), 14: 47. Type material: Lectotype ♂, by designation of Warncke (1991b: 406), “Etschmiadsin” [Armenia], ZIN (St. Petersburg). Type species of *Stenosmia* MICHENER.—Combination *Osmia (Acanthosmia) flavicornis* MORAWITZ in Schmiedeknecht (1885: 21 [887]). Combination *Osmia (Stenosmia) flavicornis* MORAWITZ in Warncke (1991b: 406).

**Distribution**—Europe: ARM. Northern Asia: RC; Turkestan. Southwestern Asia: JOR.

**Identification**—**Keys, Descriptions**: Ducke (1900); Mavromoustakis (1954b: 267); Schmiedeknecht (1885–1886); Warncke (1991b); Wu (2006); Zanden (1992c: 824).

*hartliebi* (FRIESE, 1899)*Stenosmia*

- 1899 *Osmia hartliebi* FRIESE, Entomologische Nachrichten (Berlin), 25: 333. Type material: Syntypes ♂(♂), ♀(♀), “Fayum”, “Helouan” [Egypt].—Combination *Anthocopa (Anthocopa) hartliebi* (FRIESE) in Zanden (1988b: 118). Combination *Osmia (Stenosmia) hartliebi* FRIESE in Warncke (1991b: 405).

**Distribution**—Northern Africa: DZ?, ET, LAR, TN. Southwestern Asia: IL.

**Identification**—**Keys, Descriptions**: Warncke (1991b).

*jordanica* (WARNCKE, 1991)*Stenosmia*

- 1991 *Osmia (Stenosmia) jordanica* WARNCKE, Entomofauna (Ansfelden), 12: 406. Type material: Holotype ♂, “Fidan/125 km N Aqaba” [Jordan], OLML (Linz); paratypes ♂♂, ♀.

**Distribution**—Northern Africa: ET. Southwestern Asia: JOR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*kotschisa* (WARNCKE, 1991)*Stenosmia*

- 1991 *Osmia (Stenosmia) kotschisa* WARNCKE, Entomofauna (Ansfelden), 12: 404. Type material: Holotype ♂, “Sereflikochisar/Ankara” [Turkey], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Southwestern Asia: TR.

**Identification**—**Keys, Descriptions**: No supplementary or more detailed morphological description known.

*minima* (SCHULTHESS, 1924)*Stenosmia*

- 1924 *Osmia minima* SCHULTHESS, Bulletin de la Société d’Histoire Naturelle de l’Afrique du Nord, 15: 314. Type material: Lectotype ♂, by designation of Zanden (1986: 68), “Kairouan” [Tunisia], ETHZ (Zürich); paralectotype ♀.—Combination *Hoplitis (Tridentosmia) minima* (SCHULTHESS) in Zanden (1987: 68).
- 1991 *Osmia (Stenosmia) minutissima* WARNCKE, Entomofauna (Ansfelden), 12: 404. NOMEN NOVUM with same type specimen for preoccupied *Osmia minima* SCHULTHESS [not *Apis florissomnis minima* CHRIST, 1791].

**Distribution**—Northern Africa: MA, TN.

**Identification**—Keys, Descriptions: Warncke (1991b); Zanden (1986: 68).

*tagmouta* (WARNCKE, 1991)

*Stenosmia*

- 1991 *Osmia* (*Stenosmia*) *tagmouta* WARNCKE, Entomofauna (Ansfelden), 12: 405. Type material: Holotype ♂, “Tagmout N” [Morocco], OLML (Linz); paratypes ♂♂, ♀♀.

**Distribution**—Northern Africa: MA.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known.

*xinjiangensis* WU, 2004

*Stenosmia*

- 2004 *Stenosmia xinjiangense* WU, Acta Zootaxonomica Sinica, 29: 534. Type material: Holotype ♀, “Xingjiang, Shufu (39.4°N, 79.8°E), 1200 m” [China], IZCAS (Beijing).

**Distribution**—Northern Asia: RC(NW).

**Identification**—Keys, Descriptions: Wu (2006). **Note**: Male unknown.

Genus *Wainia* TKALCU

Palaeartic subgenera: 1 Palaeartic species: 2

*Wainia* subgenus *Caposmia* PETERS

Palaeartic species: 2

*eremoplana* (MAVROMOUSTAKIS, 1949)

*Wainia* (*Caposmia*)

- 1949 *Osmia eremoplana* MAVROMOUSTAKIS, Eos (Madrid), 25: 285. Type material: Holotype ♀, “Palestine, El-Auja-Rafan (Negev)” [Israel], DAAN (Nicosia); paratypes ♂♂, ♀♀.—Combination *Anthocopa* (*Anthocopa*) *eremoplana* (MAVROMOUSTAKIS) in Zanden (1988b: 118). Combination *Anthocopa* (*Eremoplosmia*) *eremoplana* (MAVROMOUSTAKIS) in Zanden (1991c: 164).

**Distribution**—Northern Africa: ET, TN. Southwestern Asia: IL, JOR.

**Identification**—Keys, Descriptions: Zanden (1991c: 164–166).

*guichardi* (ZANDEN, 1991)

*Wainia* (*Caposmia*)

- 1991 *Anthocopa* (*Eremoplosmia*) *guichardi* ZANDEN, Reichenbachia (Dresden), 28: 166. Type material: Holotype ♂, “Laayoune” [Morocco], BMNH (London).

**Distribution**—Northern Africa: MA.

**Identification**—Keys, Descriptions: No supplementary or more detailed morphological description known. **Note**: Female unknown.

## Fossil taxa

Listed here are three extinct taxa described from their fossilized remains in the Palaearctic region. Further compression fossils of putative Osmiini taxa have been described from Florissant, Colorado, USA (Eocene-Oligocene) (see Zeuner and Manning, 1976 and Engel and Perkovsky, 2006 for reviews). The Palaearctic Baltic amber fossils described in detail by Engel (2001) on the other hand are attributed to the now extinct tribes Ctenoplectrellini ENGEL and Glyptapini COCKERELL (Engel and Perkovsky, 2006) even though they had been classified as subtribes (Ctenoplectrellina, Glyptapina) within the Osmiini before (Engel, 2001; see *Incertae sedis*).

† *Osmia antiqua* HEER, 1849

1849 † *Osmia antiqua* HEER, Die Insektenfauna der Tertiärgelände von Oeningen und von Radoboj in Croatien, vol. 2, p. 95. Compression fossil. Upper Miocene. Type material: Holotype Oe. 91, Inv. 1272, “Oeningen” [Germany], SMNK (Karlsruhe).

† *Osmia carbonum* HEYDEN, 1862

1862 † *Osmia carbonum* HEYDEN, Palaeontographica, 10: 75. Compression fossil. Upper Oligocene. Type material: Holotype 58779, “Rott im Siebengebirge” [Germany], BMNH (London); paratype 58768.

† *Osmia nigra* ZEUNER & MANNING, 1976

1976 † *Osmia nigra* ZEUNER & MANNING, Bulletin of the British Museum (Natural History), Geology, 27: 185. Compression fossil. Upper Miocene. Type material: Holotype, Pl. I. 719, “Oeningen” [Germany], ETHZ (Zürich); paratype, Pl. I. 685.

## Incertae sedis

### Family-group names

2001 † **Ctenoplectrellina** ENGEL, 2001, Bulletin of the American Museum of Natural History, 259: 54. Type genus: *Ctenoplectrella* COCKERELL, 1909.

**Notes**—Engel (2001: 54–55) proposed this taxon as subtribe within the Osmiini, but indicated that a future raise of its rank to tribal level was likely and in Engel (2005: 32) and Engel and Perkovsky (2006: 6) it was indeed accepted as tribe as presented in our Table 2.

1909 † **Glyptapina** COCKERELL, Schriften der physikalisch-ökonomischen Gesellschaft zu Königsberg, 50: 13. Type genus: *Glyptapis* COCKERELL, 1909.

**Notes**—Engel (2001: 54–55) proposed this taxon as subtribe within the Osmiini, but indicated that a future raise of its rank to tribal level was likely and in Engel (2005: 31) and Engel and Perkovsky (2006: 6) it was indeed accepted as tribe as presented in Table 2.



*Genus-group names*

- 1839 † *Apiaria* GERMAR, Nova Acta Leopoldina, 19: 210. Type species: *Apiaria dubia* GERMAR, 1839, by monotypy.F
- 1909 † *Ctenoplectrella* COCKERELL, The Entomologist, 42: 314. Type species: *Ctenoplectrella viridiceps* COCKERELL, 1909, by monotypy.
- 2001 † *Glaeosmia* ENGEL, Bulletin of the American Museum of Natural history, 259: 75. Type species: *Glaeosmia genalis* ENGEL, 2001, by original designation.
- 1909 † *Glyptapis* COCKERELL, The Entomologist, 41: 314. Type species: *Glyptapis mirabilis* COCKERELL, 1909, by monotypy.

*Species-group names*

† *Ctenoplectrella cockerelli* ENGEL, 2001

- 2001 † *Ctenoplectrella cockerelli* ENGEL, Bulletin of the American Museum of Natural History, 259: 71. Baltic amber inclusion. Type material: Holotype ♀, B-W 160, AMNH (New York); paratype ♀, MB.I.1942, ZMHB (Berlin); paratype ♀, Nr. 1011, Gröhn Collection (Glinde).

† *Ctenoplectrella grimaldii* ENGEL, 2001

- 2001 † *Ctenoplectrella grimaldii* ENGEL, Bulletin of the American Museum of Natural History, 259: 73. Baltic amber inclusion. Type material: Holotype ♀, B-JH 88, AMNH (New York).

† *Ctenoplectrella viridiceps* COCKERELL, 1909

- 1909 † *Ctenoplectrella viridiceps* COCKERELL, The Entomologist, 42: 314. Baltic amber inclusion. Type material: Neotype ♀, by designation of Engel (2001: 71), B-JH 95, AMNH (New York).
- 1931 † *Ctenoplectrella dentata* SALT, Bernsteinforschungen, 2: 139. Baltic amber inclusion. Type material: Neotype ♂, by designation of Engel (2001: 71), NB.I.1949, ZMHB (Berlin).—Synonymy in Engel (2001: 69).
- 1970 † *Ctenoplectrella splendens* KELNER-PILLAULT, Annales de la Société Entomologique de France, 6: 13. Baltic amber inclusion. Type material: Holotype ♂, NB.I.1949, ZMHB (Berlin).—Synonymy in Engel (2001: 69).

† *Ctenoplectrella zherikhini* ENGEL & PERKOVSKY, 2006

- 2006 † *Ctenoplectrella zherikhini* ENGEL & PERKOVSKY, American Museum Novitates, 3506: 3. Rovno amber inclusion. Type material: Holotype ♀, UA-1748, UASK (Kiev).

† *Glaeosmia genalis* ENGEL, 2001

- 2001 † *Glaeosmia genalis* ENGEL, Bulletin of the American Museum of Natural History, 259: 75. Baltic amber inclu-

sion. Type material: Holotype ♀, B-JH 80, AMNH (New York).

† *Glyptapis densopunctata* ENGEL, 2001

2001 † *Glyptapis densopunctata* ENGEL, Bulletin of the American Museum of Natural History, 259: 62. Baltic amber inclusion. Type material: Holotype ♀, B-W 161, AMNH (New York); paratype ♀, B-JH 89, AMNH (New York); paratype ♀, Nr. 2623, Gröhn Collection (Glinde); paratype ♀, Nr. 857, Hoffeins Collection (Hamburg).

† *Glyptapis disareolata* ENGEL, 2001

2001 † *Glyptapis disareolata* ENGEL, Bulletin of the American Museum of Natural History, 259: 59. Baltic amber inclusion. Type material: Holotype ♀, B-JH 104, AMNH (New York); paratype ♀, B-W 156, AMNH (New York).

† *Glyptapis fuscula* COCKERELL, 1909

1909 † *Glyptapis fuscula* COCKERELL, Schriften der physikalisch-ökonomischen Gesellschaft zu Königsberg, 50: 17. Baltic amber inclusion. Type material: Holotype ♀, K66, GMUG (Göttingen).

1909 † *Glyptapis reticulata* COCKERELL, Schriften der physikalisch-ökonomischen Gesellschaft zu Königsberg, 50: 16. Type material: Neotype ♀, by designation of Engel (2001: 67), B-JH 78, AMNH (New York).—Synonymy in Engel (2001: 64).

1909 † *Glyptapis reducta* COCKERELL, Schriften der physikalisch-ökonomischen Gesellschaft zu Königsberg, 50: 18. Type material: Holotype ♀, G4668, GMUG (Göttingen).—Synonymy in Engel (2001: 64).

1931 † *Glyptapis neglecta* SALT, Bernsteinforschungen, 2: 136. Type material: Neotype ♀, by designation of Engel (2001: 67), B-JH 78, AMNH (New York).—Synonymy in Engel (2001: 64).

† *Glyptapis mirabilis* COCKERELL, 1909

1909 † *Glyptapis mirabilis* COCKERELL, The Entomologist, 42: 314. Baltic amber inclusion. Type material: Holotype ♀, K72, GMUG (Göttingen).

## Appendix

### Nomina dubia

*Apis farfarisequa* SCOPOLI, 1763, Entomologia Carniolica, p. 300.—Potential synonym of *Osmia rufa globosa* (SCOPOLI) [= *Osmia bicornis globosa* (SCOPOLI)] in Warncke (1986: 96).

*Apis frontalis* VILLERS, 1789, Caroli Linnaei Entomologia Faunae Suecicae, vol. 3, p. 330.—Potential synonym of *Osmia rufa globosa* (SCOPOLI) [= *Osmia bicornis globosa* (SCOPOLI)] in Warncke (1986: 98).

*Apis fusca* SCOPOLI, 1763, Entomologia Carniolica, p. 303.—Potential synonym of *Osmia bicolor* (SCHRANK) in Warncke (1986: 99).

*Apis fuscescens* VILLERS, 1789, Caroli Linnaei Entomologia Faunae Suecicae, vol. 3: p. 320.—Potential synonym of *Osmia bicolor* (SCHRANK) in Warncke (1986: 99).

*Apis hemisphaerica* SCHRANK, 1781, Enumeratio Insectorum Austriae, p. 411.—Potential synonym of *Osmia rufa globosa* (SCOPOLI) [= *Osmia bicornis globosa* (SCOPOLI)] in Warncke (1986: 100).

*Apis lutescens* GMELIN, 1790, Caroli a Linné systema naturae [...], edn. 13, vol. 1, p. 2790 [not seen].—Potential synonym of *Osmia florissomnis* (LINNAEUS) [= *Chelostoma florissomne* (LINNAEUS)] in Warncke (1986: 104).

*Apis melodes* HARRIS, 1776, Exposition of English Insects, p. 165.—Potential synonym of *Osmia ventralis* (PANZER) [= *Osmia leaiana* (KIRBY)] in Warncke (1986: 105).

*Apis pusilla* CHRIST, 1791, Naturgeschichte der Insekten, p. 160 [not FABRICIUS, 1781].—Potential synonym of *Osmia rufa globosa* (SCOPOLI) [= *Osmia bicornis globosa* (SCOPOLI)] in Warncke (1986: 108).

*Apis rufipes* CHRIST, 1791, Naturgeschichte der Insekten, p. 161.—Potential synonym of *Osmia rufa globosa* (SCOPOLI) [= *Osmia bicornis globosa* (SCOPOLI)] in Warncke (1986: 110).

*Apis strenuus* HARRIS, 1776, Exposition of English Insects, p. 164.—Potential synonym of *Osmia rufa* (LINNAEUS) [= *Osmia bicornis* (LINNAEUS)] in Warncke (1986: 111) [not HARRIS, 1776, p. 131, which refers to *Bombus proteus* GERS-TAECKER [= *Bombus soroensis proteus* GERSTAECKER] according to Dalla Torre (1896: 514) or *Bombus lapidarius* (LINNAEUS) according to Warncke (1986: 111)]

*Apis tacitus* HARRIS, 1776, Exposition of English Insects, p. 165.—Potential synonym of *Osmia ventralis* (PANZER) [= *Osmia leaiana* (KIRBY)] in Warncke (1986: 112).

*Apis tumidus* HARRIS, 1776, Exposition of English Insects, p. 165.—Potential synonym of *Osmia florissomnis* (LINNAEUS) [= *Chelostoma florissomne* (LINNAEUS)] in Warncke (1986: 113).

*Apis unicornis* CHRIST, 1791, Naturgeschichte der Insekten, p. 160.—Potential synonym of *Osmia florissomnis* (LINNAEUS) [= *Chelostoma florissomne* (LINNAEUS)] in Warncke (1986: 113).

*Apis ventralis* PANZER, 1798, Faunae Insectorum Germanicae, 56: 20.—Combination *Megachile ventralis* (PANZER) in Dalla Torre (1896: 451). Combination *Osmia ventralis* (PANZER) [= *Osmia leaiana* (KIRBY)] in Warncke (1988a: 30). See also Özbek and Zanden (1992a: 27) and Schwarz *et al.* (1996: 123).

*Heriades gasperinii* SCHMIEDEKNECHT, in: Gasperini, 1890, Annuario Dalmatico, 5: 63.—Potential synonym of *Chelostoma mocsaryi* SCHLETTERER in Zanden (1990: 52). See also Westrich (2006).

*Heriades sinuata* SPINOLA, 1808, Insectorum Liguriaee, vol. 2, p. 59.—Potential synonym of a *Megachile* species based on the original description.

*Osmia atricapilla* CURTIS, 1828, British Entomology, vol. 5, [no.] 222.8. Type material: Holotype ♀, [United Kingdom].—Potential synonym of *Osmia nigriventris* (ZETTERSTEDT, 1838) in Tkalcu (1995: 140). See Tkalcu (1995: 140).

*Osmia interrupta* LATREILLE, 1811, Encyclopédie Méthodique, Histoire Naturelle, Insectes, vol. 8: 583. Type material lost.—Potential synonym of *Anthocopa anceyi* (PÉREZ, 1879) [= *Hoplosmia anceyi* (PÉREZ)] in Zanden (1988b: 128). See also Zanden (1994b: 1114).

*Osmia micro-gramma* DOURS, 1873, Revue et Magasin de Zoologie Pure et Appliqué, ser. 3, 1: 297. Type material lost.—Potential synonym of *Anthocopa croatica* (FRIESE, 1893) [= *Hoplosmia croatica* (FRIESE)] in Tkalcu (1974a: 123). See also Zanden (1994b: 1114).

*Osmia scorpia* VACHAL, 1910, Boletín de la Real Sociedad Española de Historia Natural, 10: 178. Type material lost.—Potential synonym of *Hoplitis quadripina* (TKALCU, 1992) in Zanden (1994b: 1117).

*Osmia sicula* DALLA TORRE & FRIESE, 1895, Entomologische Nachrichten (Berlin), 21: 72. NOMEN NOVUM for the preoccupied *Osmia minuta* DESTEFANI, 1887 [not *Osmia minuta* BRAMSON, 1879]. Type material lost.—Potential synonym of a *Protosmia* species in Zanden (1988b: 129).

*Pseudosmia parva* RADOSZKOWSKI, 1874, Bulletin de la Société Impériale des Naturalistes de Moscou, 48: 158. Type material: ♀(♀), "Frauenfeld" [Switzerland?].—NOMEN DUBIUM based on the poor description and the unclear origin.

† *Apiaria dubia* GERMAR, 1849, Zeitschrift der Deutschen Geologischen Gesellschaft (Berlin), 1, 66. Compression fossil. Upper Oligocene. Orsberg (Bonn, Germany).—Combination *Osmia dubia* (GERMAR) in Giebel (1856: 182), accepted by Handlirsch (1906–1908), but generic determination questioned by Zeuner and Manning (1976: 186).

## Nomina nuda

**Hoplitina** NOBILE & TOMARCHIO, 2000, Bollettino dell'Accademia Gioenia di Scienze Naturali, 33: 46 [as Hoplitini NOBILE & TOMARCHIO]. NOMEN NUDUM according to Engel (2005: 32).

**Hoplitini** NOBILE & TOMARCHIO, 2000, Bollettino dell'Accademia Gioenia di Scienze Naturali, 33: 46. NOMEN NUDUM according to Engel (2005: 32).

*Caerulosmia* ZANDEN, 1988, Zoologische Mededelingen (Leiden), 62: 123. NOMEN NUDUM according to Michener (2000: 468).

*Heterosmia* TKALCU, 1993, Bulletin de la Société Entomologique de Mulhouse, July–September: 56. NOMEN NUDUM according to Michener (2000: 468).

*Anthocopa tiberias* MAVROMOUSTAKIS, label name [cited in Özbek and Zanden (1992a: 14)].

*Heriades corollorum* (ILLIGER, 1806), Magazin für Insektenkunde, 5: 122 [cited in Dalla Torre (1896: 375)].

*Heriades cylindricus* (ILLIGER, 1806), Magazin für Insektenkunde, 5: 122 [cited in Dalla Torre (1896: 375)].

*Heriades nyctanthes* (ILLIGER, 1806), Magazin für Insektenkunde, 5: 121 [cited in Dalla Torre (1896: 379)].

*Hoplitis mucidooides* ZANDEN, 1990, Reichenbachia (Dresden), 28: 51 [cited in Rasmont *et al.* (1995: 50)].

*Osmia bidentata* v. *aegyptiaca* FRIESE in litt. [cited in Tkalcu (1974a: 127)].

*Osmia brevis* (ILLIGER, 1806), Magazin für Insektenkunde, 5: 114 [cited in Dalla Torre (1896: 388)].

*Osmia claripennis* SCHENCK, 1870, Entomologische Zeitung (Stettin), 31: 106 [cited in Dalla Torre (1896: 411)].

*Osmia contigua* PÉREZ in litt. (FERTON, 1914: 83) [cited in Zanden (1988b: 117) and in Rasmont *et al.* (1995: 48)].

*Osmia diversa* FRIESE in litt. [cited in Zanden (1988b: 118)].

*Osmia hellicola* ROBINEAU, 1836, Annales des Sciences Naturelles, Zoologie, 2, 6: 131, 361 [not seen].

*Osmia maderensis* BISCHOFF, label name [cited in Zanden (1991c: 172)].

*Osmia samarkandica* RADOSKOWSKI [cited in Zanden (1988b: 129)].

† *Osmia effossa* HEER, manuscript name.

† *Osmia immortalia* HEER, manuscript name. See Zeuner and Manning (1976: 183, 186–187).

† *Osmia kirbyana* HEER, manuscript name. See Palaeartic taxa erroneously attributed to the Osmiini.

† *Osmia primaeva* HEER, manuscript name. See Palaeartic taxa erroneously attributed to the Osmiini.

### Osmiini erroneously or doubtfully attributed to the Palaeartic region

*Osmia elba* PETERS, 1983, Linzer Biologische Beiträge, 14: 104.—Type locality “Gebel Elba” is in today’s Sudan (Afrotropic) rather than Egypt as cited on the original specimen labels.

*Osmia mea* STRAND, 1921, Archiv für Naturgeschichte, 87: 303.—Considered to be an extralimital species by Zanden (1986: 67).

*Osmia taurimordax* PETERS, 1983, Linzer Biologische Beiträge, 14: 102.—Type locality “Gebel Elba” is in today’s Sudan (Afrotropic) rather than Egypt as cited on the original specimen labels.

### Palaeartic taxa erroneously attributed to the Osmiini

*Heriades cinctus* (JURINE, 1807) in Spinola (1808: 198) is *Dioxys cincta* (JURINE, 1807) according to Dalla Torre (1896: 495).

*Heriades paxillorum* CHEVRIER, 1872, Mittheilungen der Schweizerischen Entomologischen Gesellschaft, 3: 506.—Synonym of *Stelis breviscula* (NYLANDER, 1848) in Frey-Gessner (1905: 103).

*Heriades pusillus* SPINOLA, 1808, Insectorum Liguria, vol. 2, p. 57.—Synonym of *Megachile punctatissima* SPINOLA,

1806 [= *Stelis punctulatissima* (KIRBY, 1802)] in Friese (1911b: 226).

*Heriades punctatissimus* (SPINOLA, 1806) in Spinola (1808: 198) is *Stelis aterrima* PANZER, 1798 [= *Stelis punctulatissima* (KIRBY, 1802)] according to Dalla Torre (1896: 475).

*Osmia blüthgeni* MAIDL, 1922, Annalen des Naturhistorischen Museums in Wien, 35: 95.—Synonym of *Trachusa bysina* (PANZER, 1798) in Zanden (1988a: 57).

*Osmia superba* FRIESE, 1920, Deutsche Entomologische Zeitschrift (Berlin), 49.—Considered to be an *Anthidium* species [not *Anthidium superbum* RADOSZKOWSKI, 1876] and given the NOMEN NOVUM *Anthidium alticola* TKALCU in Tkalcu (1967: 91).

*Pseudosmia tibiodentata* RADOSZKOWSKI, 1888, Horae Societatis Entomologicae Rossicae (St. Petersburg), 22: 340.—Combination *Osmia tibiodentata* (RADOSZKOWSKI) in Dalla Torre (1896: 412).—Synonym of *Lithurgus tibialis* MORAWITZ, 1875 in Friese (1909: 126).

† *Osmia kirbyana* HEER, manuscript name. Upper Miocene. Öhningen (Baden, Germany).—Considered to be a polistine wasp species in Cockerell (1914: 638) and accepted as *Polistes kirbyanus* COCKERELL in Zeuner and Manning (1976: 202–203).

† *Osmia primaeva* HEER, manuscript name. Upper Miocene. Öhningen (Baden, Germany).—Considered to be an *Andrena* species in Cockerell (1909a: 316) and accepted as *Andrena primaeva* COCKERELL in Zeuner and Manning (1976: 167).

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We dedicate this work to the memory of Karl Wilhelm von Dalla Torre (1850–1928). His monumental catalogue of the Hymenoptera of the world proved to be a steady guide to the taxonomic literature of the 18<sup>th</sup> and 19<sup>th</sup> century.



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The nomenclaturally relevant effective year of publication is cited ahead of the year as it appears on the publication if the two are not identical, e.g. (1861, "1859"). References not seen by the authors are marked with a number sign (#).

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## Index

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