The Genus *Oxybelus* (Hymenoptera: Sphecidae) in Arabia

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Abstract: A key with distribution lists is given for 13 species of the genus *Oxybelus* (Sphecidae). Three new species are described.

Keywords: Hymenoptera, Sphecidae, taxonomy, Arabian peninsula.

الجنس *Oxybelus* (رتبة غشائية الاجنحة: عائلة الدبابير الصيادة)
من شبه الجزيرة العربية

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خلاصة: تم وضع مفتاح تصنيفى و قوائم تبين توزيع ١٣ نوعاً من الجنس *Oxybelus* كما تم وصف ٣ أنواع جديدة .

INTRODUCTION

The genus *Oxybelus* is worldwide in distribution except for Australia and, embracing more than 200 species, is the largest in the tribe Oxybelini of the subfamily Crabroninae. Its members are usually less than 6 mm, stout and bee–like with spiny legs, and prey on various species of Diptera. They nest mostly in light soil and can be seen darting swiftly about at ground level or visiting flowers such as *Euphorbia* and members of the Umbelliferae. Their most striking features are the squamae on the metanotum and the mucro on the propodeum (fig. 1). The forewings have the submarginal and discoidal cells fused into one. An unusual habit with some species is the transporting of their prey impaled on the sting.

Abbreviations:

BMNH: British Museum of Natural History
UAE: United Arab Emirates
CGR: C.G. Roche, Cairo (1990)
ILH: I.L. Hamer, Dubai (1990)
KMG: K.M. Guichard, London
AS: antennal segment
S: sternum
T: tergum

Key to the Arabian *Oxybelus* species

♀♀ (Unknown females: *O. alhumdalilleri*)

1 Middle metatarsus with numerous curved pale spines. (Abdomen and legs largely yellow. Wing veins pale. Head broad.) ***guichardi*** de Beaumont

– Middle metatarsus without numerous curved pale spines 2

2 Mucro foliaceus, ferruginous, finely striate and apically strongly emarginate 3

– Mucro relatively narrow and more or less channelled 4

3 Metanotal squamae bifid. Punctures of T2 coarser than those of T3. Pubescence of scutum decumbent ***lamellatus*** Olivier

– Metanotal squamae simple. Punctures of T2 about equal to those of T3. Pale pubescence of scutum more erect though the tips curved. (Legs largely yellow) ***diphyllus*** (A. Costa)

4 Pronotal collar strongly emarginate in middle 5

– Pronotal collar with only slight central emargination 6

5 Propodeum with lateral patches of dense silver decumbent pubescence. (Pygidium red. Mandibles with basal half white. Squamae bifid. White excised bands on T1–4) ***verhoeffi*** de Beaumont

– Propodeum unadorned. (Pygidium darker basally. Mandibles dark. Squamae almost simple. Legs without pale markings) ***collaris*** Kohl

6 Length 3 mm. Mandibles, clypeus, scape and lower part of frons yellow, antennae orange. Tibiae and tarsi entirely yellow. Punctures of T1–2 coarse and dense ***tinklyi*** n. sp.

– Length more than 3 mm. No yellow face 7

7 Pale brown or golden pubescence on frons, leaving ground partly visible, diverging from vertical axis. A central partition line present. Pubescence on scutum almost decumbent, curved. Squamae slightly bifid 8

– Shining silver pubescence on frons often obscuring the ground and directed towards the clypeus. Pubescence on scutum semi– erect. Squamae clearly bifid 9

8 Propodeum with lateral patches of silver decumbent pubescence. Abdomen dull. Terga with fine dense punctation leaving only ridges between punctures. Mucro pale ***aurantiacus*** Mocsáry

– Propodeum without lateral patches of silver pubescence. Terga shining with interstices between the punctures about half the width of a puncture. Abdomen (in Arabian specimens) orange. Mucro pale and emarginate ***palmetorum*** Beaumont

9 S2 with evenly distributed dense punctation across the entire segment. (Terga densely and finely punctate but shining. Pygidium red. Mucro dark, parallel-sided, rather short and if emarginate only slightly. Antennae orange-brown but darker basally. Mandibles pale in basal half. Normally two yellow lateral spots on scutellum. Terga with four or five yellow lateral marks.) ***quattuordecimnotatus*** Jurine

– S2 centrally with coarser and relatively sparse punctation, dense and fine laterally . . . 10

10 Tegulae dark at base, often with two pale yellowish spots. Precostal plates with dark basal spot. Mucro usually dark, narrow and rounded to truncate apically, sometimes with a weak emargination. Pygidium red. Metanotum with only one well-defined central vertical carina. Squamae clearly bifid. No red on legs and hind tibiae mostly dark ***arabicus*** n. sp.

– Tegulae red. Pygidium black or red. Metanotum with up to five vertical carinae and the interval beteween the squamae wider 11

11 Centre of mesosternum shining and impunctate or nearly so. Pygidium and pronotum black. Precostal plates reddish. (Black mucro with strong emargination) ***fischeri*** Spinola

– Centre of mesosternum coarsely punctate. Pygidium red and pronotum often marked with yellow. Precostal plates yellowish. (Mucro short and wide with transverse striae) ***subspinosus*** Klug

♂♂

1 No central carina on scutellum and metanotum (fig. 1). T7 tridentate. Apical segment of maxillary palpae long ***alhumdalilleri.*** n. sp.

– A central carina on scutellum and metanotum 2

2 Mucro foliaceus, more or less ferruginous, finely striate and apically usually strongly emarginate 3

– Mucro relatively narrow and channelled 4

3 Metanotal squamae bifid. T2 with coarse punctures ***lamellatus*** Olivier

– Metanotal squamae simple. T2 with fine punctation and well-marked interstices ***diphyllus*** (A. Costa)

4 Pronotal collar strongly emarginate in middle 5

– Pronotal collar with only feeble emargination 6

5 Propodeum with lateral patches of silver pubescence. Punctation of T2 very dense, without interstices. Central projection of clypeus viewed from in front broad and more or less flattened. T1–3 with broken pale apical bands ***verhoeffi*** de Beaumont

– Propodeum without lateral patches of silver pubescence. T2 rather shining and with clear interstices between punctures. Clypeus with a shining "flying goose" design. T1–6 with narrow white apical bands. (Apophyses on terga strong) ***collaris*** Kohl

6 Clypeus, mandibles, antennae and frons golden yellow 7

– Otherwise 8

7 Length 3 mm or less. Punctation of scutum and T1–2 very large in proportion to small size of insect. All terga with yellow bands and legs almost entirely yellow. Frons with silver pubescence ***tinklyi*** n. sp.

– Length over 3 mm. Punctation of T1–2 fine and rather dense. Terga with more or less straight yellow bands with apical margins silvery. Frons without silver pubescence ***guichardi*** de Beaumont

8 S2 uniformly and densely punctate. (Face narrow. Tibiae and tarsi, mandibles, most of antennae except base and bands on T1–5 yellow. Squamae bifid. Terga densely punctate ***quattuordecimnotatus*** Jurine

– S2 sparsely and more coarsely punctate centrally 9

9 Clypeus viewed in profile notched. (Tegulae reddish. Squamae clearly bifid. Mesopleurae reticulate. Scutum with erect pale pubescence and sometimes with a slight bronze sheen) ***subspinosus*** Klug

– Clypeus without a notch 10

10 Frontal setae silver, dense, directed one-way forwards. (Clypeus viewed in profile with the central projection angled. Pubescence on scutum whitish. Mucro normally blackish,

parallel-sided and rounded apically or only feebly emarginate. T2 with dense punctation ***arabicus*** n. sp.

– Frontal setae golden, sparse, divided centrally and arranged more or less horizontally. (Curved pubescence on scutum directed rearwards and lying almost flat) 11

11 Terga shining. Clypeus with apical lateral projections diagonally truncate. No lateral patches of silver pubescence on propodeum, only scattered pale hairs ***palmetorum*** de Beaumont

– Terga dull. Clypeus with narrow apical lateral projections. Propodeum with small patches of silver pubescence laterally ***aurantiacus*** Mocsáry

Oxybelus alhumdalilleri n. sp.

Holotype: ♂. UAE: Al Futaisi Island, 24°27'N 54°23'E, 25.IX.1981, C.G. Roche (BMNH).

Holotype: ♂ (fig. 1). Antennae orange, third segment dark; scape yellow in front and black behind. Mandibles basally yellowish, dark-tipped. Clypeus and rest of head black. Pronotum black with two lateral transverse cream marks. Humeral tubercles cream. Mesonotum and mesopleurae black. Metanotum cream as well as precostal plates and the sutures leading to them. Mucro pale. Tegulae brownish with a cream spot. Tibiae and tarsi pale yellow, the last mid and hind tarsal segments darker. Terga black with divided transverse pale yellow marks narrowing from T1 to T6, apical margins silvery white. T7 dark with paler tip. Sterna dark, paler apically. Wings hyaline with pale veins.

Clypeus covered with dense shining silver pubescence reaching up to a little below the anterior ocellus. The clypeus is a little bulged in the middle with the outline of the apical margin shallowly convex and laterally with minute tubercles or points. Top of head rather shining and with fine punctation, finer in the ocellar area, the interstices not greater than diameter of punctures, and with erect white pubescence. Width of frons only a little wider than corresponding width of eye.

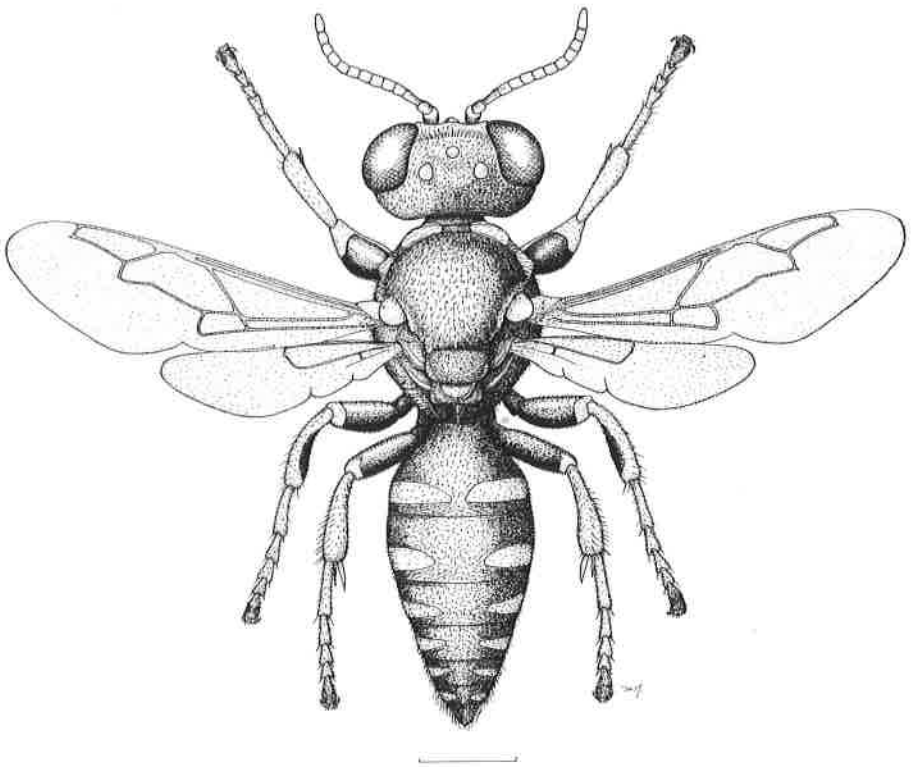

Fig. 1: Habitus of *Oxybelus alhumdalilleri* n. sp., drawn from the holotype. (scale bar 1mm).

Pronotum rounded without any distinct emargination. Scutum shining with small, rather dense punctation, covered with longish white decumbent pubescence, leaving the ground visible, a short median carina just in front of the scutellum which is shining and a little more densely punctate. Metanotum and squamae and mucro as in fig. 1. Propodeum shining and widely reticulate, laterally with somewhat indefinite transverse striae. Mesopleurae dull and densely punctate with incipient thin striae and a longish silver pubescence which does not hide the ground. Underside of femora with short white pubescence. Abdomen shining with even micropunctation and decumbent pale pubescence, longish erect white hairs on T6 and T7. Tip of abdomen tridentate. Length 5 mm.

Female unknown.

Strictly speaking, this beautiful *Oxybelus* contradicts the Oxybelini key in Bohart & Menke (1976). According to the key, *Oxybelus* should have "scutellum", at least posteriorly, and metanotum with a median longitudinal carina. However, *O. hastatus* Fabricius from Spain and Morocco has no carina on the scutellum and sometimes none on the metanotum. *O. alhumdalilleri* is in another respect an aberrant species, judging by the unusual shape of the squamae which appear connected.

Oxybelus guichardi de Beaumont, 1950

Oxybelus guichardi de Beaumont, 1950. - Bull. Brit. Mus. (Nat. Hist.), Ent. *1*: 413.

Material: W. Kuwait, 19.IV.1938, 1 ♀ (W. Al Houty) col. KMG.

Distribution: Algeria, Mali, Kuwait

Oxybelus lamellatus Olivier, 1811

Oxybellus lamellatus Olivier, 1811. - Encycl. meth. *VIII*: 593.

Oxybelus andalusiacus Spinola, 1843. - Ann. Soc. Ent. France (2) *1*: 111-114).

New Synonymy: *O. andalusiacus* (= *arabs* Lepeletier, 1845; *O. frondigera* A. Costa, 1883; *O. andalusiaticus* Mocsáry, 1958; *O. andalsiacus* Tsuneki, 1961.) is synonymised with *O. lamellatus.*

Material: This, the commonest species of *Oxybelus* throughout Arabia, has been recorded from many sandy localities and at various altitudes up to 1200 m. Recently in UAE Roche collected 114 males and 18 females from 14 localities.

Distribution: S. France, Iberian Peninsula, N. Africa across the Sahara into the Sahel (Mali, Niger and N. Nigeria), Arabia and NW India.

Variation: The differences in specimens of "*O. andalusiacus*" from Spain and Portugal and others from North Africa, the Sahara, Arabia and Baluchistan are minimal. The punctation of the Iberian ones is a little coarser on the scutum and mesopleurae and the metanotum is black; this last character may be due to a cooler climate since a specimen from the Asir in south Arabia at 1200 m also has a black metanotum. Throughout the entire distributional range of the species the shape of the mucro and the colour of the legs are very variable irrespective of the locality.

Oxybelus diphyllus (A. Costa), 1882

Alepidaspis diphyllus Costa, 1882. - AH: Roy. Acad. Sci. Fis. Mat. Napoli, *IX*: 35.

Material: Oman: Samail Gap, 29.II.1976, 1 ♂ (KMG); Behla 500m, 4.III.1976, 1 ♂ (KMG).

Distribution: Sardinia, N. Africa, Niger.

The allied African species *O. phyllophorus* Kohl might be expected to occur in Arabia. It has fine punctation on the frons and ocellar area with the ground distinctly shining.

Oxybelus verhoeffi de Beaumont, 1950

Oxybelus verhoeffi de Beaumont, 1950. - Bull. Brit. Mus. (Nat. Hist.) Ent. *1*: 415.

Material: UAE: Shweib, 1.IV.1987, 1 ♀ (ILH); Al Selimut near Al Ain, 11.XII.1981, 1 ♂ (CGR); Al Markaniyah near Al Ain, 2.IV.1982, 1 ♀ (CGR) and 8.I.1982, 1 ♂ (CGR). Oman: Dhaid 25°20'N 55°50'E, IV.1943, 1 ♂ (D.V. Fitzgerald BMNH).

Distribution: N. Africa, Arabia.

The chief characters of the male, which has not been described, are as follows: propodeum like female with lateral patches of dense silver decumbent pubescence. Clypeus in profile with median projection evenly rounded and in front view broad and flattened (like *O. victor*, Lepeletier) and with the lateral projections clearly visible and narrowly rounded. Scutum shining and with a faint coppery sheen. Pronotal collar with a deep central emargination. Terga finely and densely punctate with pale broken apical bands on T1–3. S1 brilliantly shining and centrally with the punctures widely scattered. Front metatarsus with the apical spine long, longer than following segment. Tarsi pale ferruginous. Wing veins pale, a little darker apically. Length 5–6 mm.

Oxybelus collaris Kohl, 1884

Oxybelus collaris Kohl, 1884. – Termesz. Fuzetek *8*: 107.

Material: Saudi Arabia: Dirab Agricultural Station, 18.III.1980, 1 ♀ (col. KMG). UAE: Al Babha, 6.III.1981, 1 ♂ (col. CGR). Jordan: Aqaba, III.1986, 6 ♂♂, 1 ♀, (col. KMG).

Distribution: Arabia, Jordan, Sinai (Wadi Firan).

Oxybelus tinklyi n. sp.

Holotype: ♀. Palestine: Jericho (Wadi Qilt), 13–22.V.1975, K. M. Guichard (col. BMNH).

Paratypes: 1 ♀, 7 ♂♂ as holotype; 3 ♂♂ Jericho, 2.VI.1943, Bytinski-Salz (col. Tel Aviv University); 2 ♀♀ Jerusalem, 25.V.1943, ditto. Saudi Arabia: Al Ha'ir near Riyadh, 28.IV.1980, 1 ♂ (KMG in col. KMG); Ad Diriyah near Riyadh, 28.IV.1980, 2 ♂♂ (KMG in col. KMG); Abu Arish, 22–29.III.1980, 2 ♀♀ (KMG in col. KMG). Oman: 2 ♀♀ Rostaq 350 m, 21–31.III.1976, (KMG in col. KMG); 1 ♂ Ain Razat, 9.IV.1985, (ILH). North Yemen: 2 ♂♂ Wadi Mor, 4.I.1985, G.Popov. UAE: 2 ♀♀ Al Ain, 10.VI.1988 and 1 ♂, 1 ♀, VIII.1987, (ILH in col. ILH); 1 ♀ Abu Dhabi, 31.III.1987 and 1 ♂ 19.IX.1986, (ILH in col. ILH); 1 ♂ Abu Dhabi, 19.III.1981, (CGR in col. CGR); 2 ♂♂ Hatta, 6.VI.1986, (ILH in col. ILH); 2 ♂♂ Shweib-Madam, 24.III.1987, ILH in col. ILH); 1 ♂ Jebel Ali Hotel, 14.IV.1989, (ILH in col. KMG). Niger: 3 ♂♂ Niamey, 1.I.1978, G.Popov (in col. KMG). Mali: 1 ♂ 30 kms south of Ansongo, IX.1976, (KMG in col. KMG).

Holotype ♀: Antennae orange. Black except for the following parts yellow: Mandibles except tips, scape, clypeus, frons, pronotal collar, lateral spots on scutellum, metanotum, both lateral sutures, legs except hind femora mostly blackish, apical bands on T1–5. Tegulae pale ferruginous. Pygidium pitchy. Leg spines white. Wings hyaline and veins brownish. Clypeus with a central tubercle, the apical margin ill-defined and irregular. Frons with silver pubescence rather sparse, leaving ground clearly visible. In front view head narrow, width of eye greater than half the width of frons. Scutum with a slight coppery sheen, densely punctate and ridged between the punctures, the pale pubescence short and decumbent. Mesopleurae with the sculpture obscured by pubescence. Scutellum with larger punctures. Squamae of metanotum simple. Mucro short, parallel-sided and truncate. Abdomen with T1–2 heavily punctate, more so apically; the terga with pale apical margins that are finely and densely punctate. T3 onwards with much finer punctation. S2 uniformly finely and densely punctate like *O. 14-notatus*. Apical spine of front metatarsus shorter than following segment.

Male: Very similar in colour, markings and punctation to female. Apical margin of clypeus emarginate and feebly tridentate, the middle tooth being formed by the tip of the central projection which is carinate. The terga in profile like those of the female are somewhat convex. Both sexes about 3 mm.

Oxybelus palmetorum de Beaumont, 1950

Oxybelus palmetorum de Beaumont, 1950. – Bull. Brit. Mus. (Nat. Hist.) Ent. *1*: 416.

Material: Saudi Arabia: Wadi Majarish below Taif 800 m, 12.II.1983, 3 ♂♂, 1 ♀ (KMG in col. KMG); Jeddah, Locust Research Station, 21.II.1972, 1 ♀ (col. BMNH).

Distribution: N. Africa, Arabia.

Variation: The two females in sharp contrast with the males have the abdomen entirely orange except for a dark central spot on T2; the North African females resemble the males.

Oxybelus aurantiacus Mocsáry, 1883

Oxybelus aurantiacus Mocsáry, 1883. – Magy. Akad. Term. Ertek. *XIII*: 48.

Material: Saudi Arabia: Al Ha'ir near Riyadh 520 m, 30.IV.1980, 1 ♀ (KMG in col. KMG); Wadi Majarish below Taif, 12.II.1983, 2 ♂♂, 1 ♀, (KMG in col. KMG). Yemen: El 'Asr, eight miles west of Sana'a 8000 ft., 27.II.1938, 2 ♂♂ (Scott & Britton, in BMNH).

Distribution: N. Africa, S. Europe, Arabia, Palestine, Turkey.

Variation: The female from Al Ha'ir has unusual colouration, the abdomen being red with broad pale bands on T1–2 and narrow terminal bands on T3–5; T2 has black lateral dots and this pattern is more or less repeated on the sterna. The scutellum, the entire metanotum and the enclosed area of the propodeum are pale. The Majarish female has a typical black abdomen with uninterrupted pale bands on T1–5.

Oxybelus quattuordecimnotatus Jurine, 1807

Oxybelus quattuordecimnotatus Jurine, 1807.– Nouv. Meth. Hym. *1*: 217

Material: Saudi Arabia: Hofuf 145 m, 21–26.IV.1980, 5 ♀♀ (KMG in col. KMG).

Distribution: N. Africa, C. & S. Europe eastwards.

Oxybelus fischeri Spinola, 1838

Oxybelus fischeri Spinola, 1838. – Ann. Soc. Ent. France *7*: 437–546.

Material: Saudi Arabia: Al Kharj, 20.III.1980, 2 ♂♂ (KMG); Dirab Agricultural Station, 18.III.1980, 1 ♀ (KMG). Yemen: Sana'a c. 7800 ft., 26.II.1938, 1 ♂, 1 ♀ (Scott & Britton in BMNH).

Distribution: N. Africa, Canary Islands, Palestine, Arabia.

Oxybelus subspinosus Klug, 1835

Oxybelus subspinosus Klug, 1835. – Walt. Reise Südl. Spanien *2*: 98.

Material: Saudi Arabia: Riyadh area, 16–21.IV.1980, 1 ♀ (KMG).

Distribution: N. Africa, Middle East, South Europe.

Oxybelus arabicus n. sp.

Holotype: ♀. Saudi Arabia: Riyadh area, 6–21.IV.1980. K.M. Guichard (in col. BMNH).

Paratypes are in cols. BMNH, KMG, ILH, CGR and Tel Aviv University. 4 ♂♂, 4 ♀♀ as holotype; Ad Diriyah near Riyadh, 28.IV.1980, 1 ♀ (KMG); Al Ha'ir near Riyadh 520 m, 17.III.1980, 1 ♂, 1 ♀ (KMG): Taif 2000 m, 8.IV.1980, 1 ♂ (KMG); Wadi Majarish below Taif, 12.II.1983, 5 ♂♂ (KMG); Oman: Bahla 500 m, 4.III.1976, 1 ♂ (KMG); Samail Gap 600 m, 29.II.1976, 4 ♂♂ (KMG); UAE: Dhaid farm, 2.XII.1981, 5 ♂♂, 1 ♀, (CGR); Al Ain, 25.XII.1986, 2 ♀♀ (ILHL), ditto 1 ♂ 10.VII.1978; Hatta, 28.IV.1989, 3 ♂♂ (ILH), ditto 2 ♂♂ 13.II.1987; Hatta, 3.VIII.1981, 1 ♀ (CGR); Asimah, 5.XII.1986, 2 ♂♂ (ILH); Uyaynah, 31.XII.1984, 1 ♂ (ILHL), ditto 1 ♂ 25.IV.1986; W. Murai, 24.XII.1983, 2 ♂♂ (ILH); Remah, 2.IV.1987, 1 ♂ (ILH); Yemen: Sana'a c. 7900 ft, 26.II.1938, 1 ♂ (Scott & Britton in BMNH) from lucerne fields north of city. Jordan: Aqaba, 6–10.III.1986, 6 ♂♂, ♀, (KMG); Palestine: Qumeran, 24.III.1986, 2 ♂♂ (A. Friedberg), ditto 1 ♀ 9.IV.1986; Jericho, Wadi Qilt, 27.III.1975, 2 ♀♀ (KMG), ditto 1 ♂ 13–22.V.1975; Feiran, 26.III.1969, 1 ♀ (Kugler); Bir Rekhme (?), 8.IV.1958, 1 ♂ Lewinsohn.

Holotype: ♀. Mandibles cream merging into ferruginous with dark tips. Antennae orange, scape black, head and thorax black with the following parts pale yellow: pronotal collar, humeral tubercles, two spots on tegulae, outer area of precostal plates, two lateral spots on scutellum. Legs mostly dark except front tibiae and the base of middle and hind tibiae, tarsi paler. Abdomen black and rather shining with lateral yellow marks on T1–4 and a thin terminal band on T5. S2 with a large pale yellow central area. Wings hyaline, veins pale.

Apical margin of clypeus similar to that of *O. mucronatus* (Fabricius). In front view width of eye slightly greater than half the width of frons. Head closely punctate and rather shining with pubescence similar to *O. mucronatus*. Pronotal collar with feeble central emargination. Scutum shining, closely punctate, the pale pubescence curved and semi-decumbent, leaving the ground clearly visible.

Scutellum shining and closely punctate with prominent central carina. Metanotum with only one vertical carina. Squamae bifid. Mucro dark, narrow, parallel-sided and not emarginate. Centre of mesosternum shining and densely confusedly punctate. Mesopleurae rugose-punctate similar to *O. mucronatus*. Metatarsus 1 with short apical spine. Abdomen shining and closely punctate, the pale apical margins well defined and also punctate. S2 shining with scattered punctures in the centre. 6.5 mm.

Male: Similar to female. Clypeus with central carina or "beak" in profile more or less angled with only a short weak concavity behind the tip, viewed from in front narrow, the lateral apical clypeal projections narrowly truncate. Apical spine of front metatarsus shorter than following segment. Sides of abdomen with conspicuous apophyses.

Variation: The abdominal pale markings vary greatly, even in the same locality (Riyadh). The terga may have reduced pale markings, the female from Jordan having only small narrow marks on T1–2, while one Riyadh female is heavily marked with pale yellow, the lateral marks becoming bands on T3–5; in this last specimen the legs and sternites are almost entirely pale yellow. Specimens from Palestine and Jordan are generally darker than the Arabian ones.

O. arabicus is related to *O. mucronatus* (Fabricius) and *O. dissectus* Dahlbom, both of which occur in Palestine, although *O. dissectus* is uncommon (Jericho, Wadi Qilt). The distinctions between these two latter species are fine and colour cannot be relied upon as both have white and yellow forms. In some females the mesopleurae are rugose-punctate which makes separation difficult or rather impossible. In the males the blunter clypeal "beak" of *O. dissectus* in profile is similar to that of *O. arabicus* and, as DE BEAUMONT pointed out (1950), serves to distinguish *O. dissectus* males from males of *O. mucronatus*.

The principal character of *O. arabicus* in both sexes is the single central vertical carina on the metanotum, the lateral areas always with a confused surface and only very rarely with diagonal and never vertical carinae.

O. arabicus and *O. mucronatus* can be separated as follows:

O. arabicus	*O. mucronatus*
♂ ♀ Metanotum between the squamae with one vertical central carina, the lateral areas with a confused surface.	Metanotum between the squamae with at least two and sometimes four vertical carinae apart from central one.
Pale pubescence on mesonotum curved and semi-decumbent.	Pale pubescence on mesonotum more or less erect and never curved or semi-decumbent.
Mandibles with basal half pale.	Mandibles dark.
Abdominal markings always cream to pale yellow.	Abdominal markings often frankly yellow.
♀ Pygidium red.	Pygidium black, sometimes with ferruginous tinge.
♂ Clypeal "beak" in profile angled, the lower part almost vertical and the concavity behind the tip minimal.	Clypeal "beak" in profile regularly curved and ending in a bird-like tip with well-marked concavity behind.

DISCUSSION

Of the 13 Arabian *Oxybelus* not one has Oriental affinities. No Indian or Iranian species has been noted from the Arabian peninsula. As one might expect, the African connection is marked; the distribution of six species otherwise almost confined to North Africa is shared by Arabia – *O. diphyllus* (and Sardinia), *O. fischeri* (and Palestine), *O. guichardi*, *O. palmetorum*, *O. tinklyi* and *O. verhoeffi*. But one might ask whether the tiny *O. tinklyi* is truly African or an Arabian endemic extending across the Red Sea.

Four species, *O. aurantiacus*, *O. 14-notatus*, *O. lamellatus* and *O. subspinosus* have a wide distribution extending across North Africa through the Mediterranean area into at least Turkey, while *O. lamellatus* reaches western India and in Africa penetrates the Sahara into the Sahel as far as northern Nigeria (Zaria).

Absolute endemism seems confined to the peculiar *O. alhumdalilleri* although *O. collaris* and *O. arabicus* look like endemics extending their range northwards into Palestine.

REFERENCES

De Beaumont, J., 1942. *Les Oxybelus (Hym. Sphecid.) de la Faune Suisse.* Mitteilungen der Schweizerischen Entomologischen Gesellschaft *18*: 416–428.

De Beaumont, J., 1950. *Sphecidae récoltés en Algerie et au Maroc par Kenneth M. Guichard.* Bulletin of the British Museum (Natural History) Entomology *1*: 391–427.

De Beaumont, J., 1958. *Hyménoptères Sphecides de la Mission du Tassili des Ajjer (1949).* L'Institut de Recherches Sahariennes (Serie de Tassili) *3*: 55–71.

Berland, L., 1925. Faune de France. Hyménoptères Vespiformes *1*: 203–212.

Bohart, R.M. & A.S. Menke, 1976. Sphecid Wasps of the World. University of California Press.

Gerstaecker, A., 1867. *Gattung Oxybelus.* Zeitschrift für die gesamten Naturwissenschaften *30*: 26.

Guiglia, D., 1952. *Gli Oxybelini d'Italia (Hymenoptera: Sphecidae).* Annales Museo civico Genova *66*: 55–158.

Kohl, F.F., 1884. *Beitrag zur Kenntniss der Hymenopteren-Gattung Oxybelus Latr.* Termeszetrajzi Fuzetek *8*: 101–116.

Perez, E.V., 1966. *Los Oxybelini de la Peninsula Iberica.* Graellsia *22*: 57–121.

Verhoeff, P.M.F., 1948. *Systematisches Verzeichnis der niederländischen Oxybelus.* Tijdschrift voor Entomologie *89*: 158–208.

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