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An annotated checklist of the Coccinellidae (Insecta: Coleoptera) of Yemen

Armando A.C. Raimundo and Antonius van Harten
(with a contribution by H. Fürsch)

Abstract: During the period 1991-1993, 41 species of Coccinellidae were collected from Yemen. Twenty-two of these species constitute first records for the country. *Serangium buettikeri* Fürsch n. sp. is described from Saudi Arabia and Yemen. Short diagnoses and notes on biology and distribution are given. A list of all the species currently known from Yemen (73 species) is provided, together with a key for their identification.

قائمة بالدعسوقيات (الحشرات: الحنفسيات الأجنحة) من اليمن

ارامندو ريمندو و انتونيوس فان هارتن
(مع مساهمة من هلموت فيرش)

خلاصة: أثناء الفترة الممتدة بين ١٩٩١-١٩٩٣، تم جمع ٤١ نوعاً من الدعسوقيات من اليمن، ٢٢ منها تسجل لأول مرة. تم وصف النوع الجديد *Serangium buettikeri* من المملكة العربية السعودية واليمن. تم إعطاء وصف تشخيصي وملاحظات حول النواحي البيولوجية والانتشار. ويتضمن البحث أيضاً قائمة تضم جميع الأنواع المعروفة من اليمن وعددها ٧٣ نوعاً، إضافة إلى مفتاح تصنيفي لهذه الأنواع.

INTRODUCTION

The Coccinellidae or ladybird beetles are of particular significance for agriculture and forestry. The majority of species are predatory, specialising on important pest groups such as aphids, scale insects and spider mites. Many species have been employed very successfully in biological control programmes. A few species of Coccinellidae are phytophagous and some of these can become serious pests, especially of crops belonging to the families Solanaceae and Cucurbitaceae.

Until recently, the Coccinellidae had only been collected systematically from Yemen on one occasion, by the Britton & Scott expedition of the British Museum (Natural History) in 1937-1938. The field work for this early expedition was done in the former Aden Protectorate, from Aden to the area surrounding Dhala, and in Yemen from Taiz to the Sana'a area in the north and the Red Sea coast in the west (SCOTT & BRITTON 1941). A report on the material collected was published by KAPUR (1959). He described 30 species, five of which were new to science. Since then only sporadic single records have been published (e.g. FÜRSCHE 1989 a, 1989 b, 1992). FÜRSCHE (1979) reviewed the Coccinellidae of Saudi Arabia.

During the period from 1991 to 1993, the junior author together with his colleagues Mr. M. Knapp, Dr. A. Drews and Mr. M. Mahyoub of the Yemeni-German Plant Protection Project, Sana'a, collected over 1600 coccinellid specimens from different parts of Yemen, especially from the central highlands. This material included 41 species, including one undescribed species and 22 species not previously recorded from Yemen.

This paper deals with the above-mentioned collection. A full list of the species known from Yemen is included, together with a key. Notes on the recently collected species, their biology and distribution are given. The majority of specimens have been deposited in the collection of the Biology Department, University of Évora, Portugal; a few specimens are in the Fürsch collection.

The total number of species of Coccinellidae known from continental Yemen is now 73 (not including Socotra, Abd al-Kuri and other Yemeni islands in the Indian Ocean and the Red Sea).

Abbreviations:

AD	A. Drews
AvH	A. van Harten
MK	M. Knapp
MM	M. Mahyoub

The locality indicator "al-Mahwit – at-Tawillah" signifies that the material was collected from one or several sites alongside the road between al-Mahwit and at-Tawillah. Those species representing new records for Yemen are marked with an asterisk.

Key to the coccinellid species from Yemen (H. Fürsch)

Key to the subfamilies of Coccinellidae

1	Tarsus trimerous or cryptotetramerous (Fig. 1).....	2
–	Tarsus with four distinct links (Fig. 2), body oblong oval, pubescent, alae absent; under stones or in grass on the ground	Lithophilini
2	Clypeus expanded laterally, shelf-like (Fig. 3)	Chilocorinae
–	Clypeus not expanded laterally, or if so, just slightly and not shelf-like	3
3	Mandible multidenticulate apically (Fig. 4), antenna inserted dorsally between eyes (Fig. 5); dorsal surface pubescent; feeding on plant leaves; length more than 3 mm	Epilachninae
–	Mandible rarely multidenticulate apically, antenna inserted not dorsally, but in front of eyes (Fig. 6); feeding on Homoptera or mildew	4
4	Dorsal surface pubescent (in Serangiini elytra glabrous)	5
–	Pronotum and elytra glabrous	Coccinellinae
5	Apical segment of maxillary palpus conical or elongate oval (Fig. 7)	Sticholotidinae
–	Apical segment of maxillary palpus divergent apically (Fig. 8)	6
6	Antenna short, two thirds or less of head width	Scymninae
–	Antenna long, more than two thirds of head width	Coccidulinae, Ortaliinae

Key to Lithophilini

- | | | |
|---|---|---|
| 1 | Pronotum with the lateral margins subrounded, slightly narrowing towards the base... | 2 |
| - | Pronotum with the lateral margins subangular near the middle and sinuate towards the base; body shining, head and pronotum yellowish red, elytra with yellow margin and broad apical spot; distinctly and densely pubescent; 2.6 mm
<i>Lithophilus minutus</i> | |
| 2 | Maximum length 2.6 mm; uniformly brown, elytra distinctly obovate, straight at elytral base as far as pronotal base; broadly expanded at the shoulders and narrowed towards the rounded apex; coarser punctures absent
<i>Lithophilus yemenensis</i> | |
| - | Minimum length 3.2 mm; elytra not wider across the shoulders | 3 |
| 3 | Head and pronotum usually rusty red, elytra piceous or black; 3.3 mm
<i>Lithophilus arabicus</i> | |
| - | Pronotum and elytra dark brown; 4.0-5.6 mm
<i>Lithophilus tenebrosus</i> | |

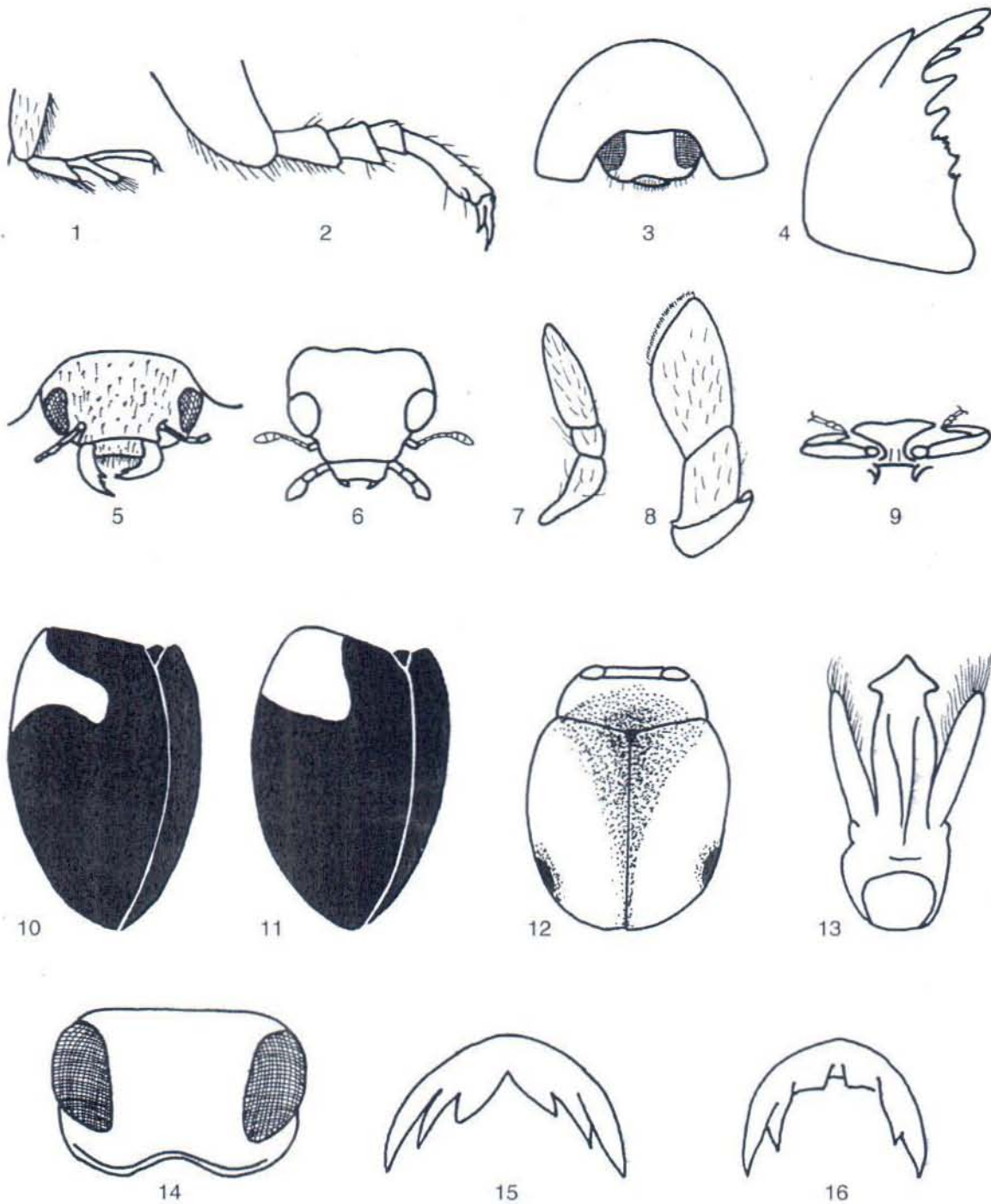
Key to Coccidulinae and Ortaliinae

- | | | |
|---|--|---|
| 1 | Body shape rounded with very fine pubescence | 2 |
| - | Body shape oblong oval; pronotum red, elytra uniformly black; length of pubescence medium with long, erected setae
<i>Rhyzobius lophantae</i> | |
| 2 | Red with black suture and two black spots on each elytron
<i>Rodolia cardinalis</i> | |
| - | Dark reddish with broad black, longitudinal band
<i>Rodolia argodi</i> | |

Key to Scymninae

- | | | |
|---|--|----|
| 1 | Surface pubescent | 2 |
| - | Surface glabrous (Hyperaspidini) | 35 |
| 2 | Anterior margin of prosternum concealing mouthparts; rounded, black, with elytral pubescence directed straight backwards; length less than 2 mm (Stethorini) | 3 |
| - | Mouthparts on underside freely visible, body outline oblong oval; elytral pubescence near hind margin directed laterally (Scymnini) | 4 |
| 3 | Anterior part of head yellow, legs testaceous
<i>Stethorus gilvifrons</i> | |
| - | Head black, mouthparts and legs yellow
<i>Stethorus pauperculus</i> | |
| 4 | Postcoxal line joining hind margin of first abdominal sternite, its apex not recurved; yellow; length less than 1.7 mm. Exact identification only by microscopic examination of male genitalia | 5 |
| - | Postcoxal line complete or incomplete, not joining hind margin of first abdominal sternite without recurving | 6 |
| 5 | Paramera longer than basal lobe
<i>Diomus anemicus</i> | |
| - | Paramera shorter than basal lobe
<i>Diomus rubidus adenensis</i> | |
| 6 | Prosternum with distinct carinae on intercoxal projection. Carinae often reaching anterior margin of prosternum | 7 |
| - | Prosternum without carinae, or at most with short ridges next to coxal cavities (Fig. 9) (<i>Nephus</i>) | 25 |

7	Postcoxal line incomplete but apical end recurved, directed toward the base of first sternum	8
–	Postcoxal line complete, recurved, extending to base of first sternum	15
8	Black elytra red-spotted	9
–	Elytra uniformly black, pale or with black suture and base	12
9	Red spot on black elytron on the shoulder, extending to underside	10
–	Red spot in the centre of elytron	11
10	Reddish shoulder spot extended horizontally, wider on side margin, narrowing toward elytral centre; anterior and hind margins parallel (Fig. 10)	
	<i>Scymnus (Scymnus) interruptus</i>	
–	Reddish or pale shoulder spot nearly quadrangular with rectangular posterior edge (Fig. 11)	
	<i>Scymnus (Scymnus) scapuliferus</i>	
11	Pronotal margin yellow, centre black, elytral spot small, rounded	
	<i>Scymnus (Scymnus) gonatoides</i>	
–	Pronotum yellow with small, black basal spot; elytral spot large, extended transversely from near the shoulders to elytral centre	
	<i>Scymnus (Scymnus) flavicollis</i>	
12	Elytra largely or uniformly brown	13
–	Elytra black, pubescence very fine	
	<i>Scymnus (Scymnus) viduus</i>	
13	Elytra completely brownish	
	<i>Scymnus (Scymnus) levailanti</i>	
–	Elytra brown with black colour on base and with incomplete black suture	14
14	Broadly rounded (Fig. 12)	
	<i>Scymnus (Scymnus) interruptus</i>	
–	Long oval-shaped	
	<i>Scymnus (Scymnus) levailanti</i>	
15	Prosternum with carinae on intercoxal projection not quite reaching anterior margin of prosternum; small longitudinal species (subgenus <i>Mimopullus</i>)	16
–	Prosternal carinae reaching anterior margin of prosternum, broader rounded (subgenus <i>Pullus</i>)	18
16	Uniformly brown, distinctly slender	17
–	Brown, but mostly with a darker mark forming a long triangle on the elytral base with its top on the posterior half of elytra	
	<i>Scymnus (Mimopullus) mediterraneus</i>	
17	Siphonal tip with long flagellum	
	<i>Scymnus (Mimopullus) flagellisiphonatus</i>	
–	Siphonal tip without flagellum but with small hook	
	<i>Scymnus (Mimopullus) araraticus</i>	
18	Pronotum black with yellow areas or entirely black; elytra black with yellow hind margin	
	<i>Scymnus (Pullus) auritus</i>	
–	Elytron brownish with two brighter spots, each entirely brown or brown with small central spot, often with black margins. Only to be identified by preparation of male genitalia (see FÜRSCHE 1989 a)	19
19	Two "alae" on basal lobe (Fig. 13) in dorsal or ventral view	
	<i>Scymnus (Pullus) belophallus</i>	
–	Not as described above	20
20	Entirely brown; basal lobe distinctly shorter than parameres	21
–	Characteristics not all as above	22
21	Less than 2.1 mm long	
	<i>Scymnus (Pullus) rubicundus</i>	
–	Longer than 2 mm, more broadly rounded	
	<i>Scymnus (Pullus) auritus</i>	
22	Sipho glabrous without dorsal lobe; less than 2.2 mm	
	<i>Scymnus (Pullus) yemenensis</i>	
–	Sipho with dorsal lobe; longer than 2 mm	23



Figs 1-16: Distinctive characters of Coccinellidae. 1: Tarsus of Coccinellini. 2: Tarsus of *Lithophilus*. 3: Head of *Chilocorus*. 4: Multidenticulate mandibula. 5: Antennae between eyes (Epilachnini). 6: Antennae in front of eyes. 7: Elongate apical segment of maxillary palpus (Sticholotidinae). 8: Apically divergent apical segment of maxillary palpus (Scymninae). 9: Prosternum of *Nephus*. 10: Shoulder spot of *Scymnus interruptus*. 11: Shoulder spot of *Scymnus scapuliferus*. 12: Body outline of *Scymnus interruptus* (aberrant form). 13: Aedeagus of *Scymnus belophallus* (ventral view), showing the lateral "alae" of basal lobe. 14: Front margin of clypeus (*Chilocorus*). 15: Trifid claws of *Chnootriba*. 16: Claws of *Henosepilachna* (bifid with basal tooth).

- 23 Siphon with two dorsal lobes (see FÜRSCH 1989 a: 114) 24
 – Siphon only with one dorsal lobe *Scymnus (Pullus) nigropictus*
- 24 Basal lobe distinctly longer than parameres, its tip curved in the direction of the parameres *Scymnus (Pullus) subvillosus*
 – Basal lobe slightly longer than parameres, its tip straight and erect *Scymnus (Pullus) syriacus*
- 25 Postcoxal line on first abdominal sternum parallel to hind margin of sternum, at most with only extreme apex curved forward (*Nephus*) 26
 – Postcoxal line strongly curved forward along lateral border of first sternum, extending onto basal half of this sternite; antenna 10-segmented (subgenus *Sidis*) 34
- 26 Antenna 11-segmented; bright brownish with dark cross along the suture, but variable *Nephus (Nephus) crucifer*
 – Antenna 9- or 10-segmented 27
- 27 Antenna 9-segmented (subgenus *Bipunctatus*) 28
 – Antenna 10-segmented (subgenus *Geminosipho*) 31
- 28 Elytra completely black or with one brown spot each in posterior half *Nephus (Bipunctatus) nigricans*
 – Elytra variable or uniformly brown 29
- 29 Uniformly brownish; slender; less than 1.5 mm long *Nephus (Bipunctatus) wittmeri*
 – Elytra brownish or black with one yellow spot or variable yellow pattern 30
- 30 Elytra brown, each with large or small yellow spot (if small, before elytral hind end) *Nephus (Bipunctatus) peyerimhoffi*
 – Each elytron dark brown or black with large serrated yellow spot which includes up to three black spots. The marginal black spots are united with the black margin, but variable *Nephus (Bipunctatus) includens*
- 31 Entirely yellowish brown or with black margins and suture; very small and slender species 32
 – Yellowish brown with brighter spot on posterior half of elytron (sometimes hardly visible) 33
- 32 Parameres very slender (half the diameter of the basal lobe) *Nephus (Geminosipho) phenacoccephagus*
 – Parameres nearly as thick as basal lobe *Nephus (Geminosipho) sudanicus*
- 33 Broadly rounded with large spot reaching the shoulders *Nephus (Geminosipho) arcuatus*
 – Not as broad as above species; with spot near posterior end of elytron *Nephus (Geminosipho) fenestratus*
- 34 Elytron brownish, mostly with small brighter spot near hind end *Nephus (Sidis) macilentus*
 – Entirely yellow, parallel-sided *Nephus (Sidis) hiekei riyadhensis*
- 35 Black with whitish yellow spots, on the elytral margins these are often linked to a longitudinal band; on elytral centre three separated spots in a meridional row; 2.8-3.2 mm *Hyperaspis polita*
 – Black with bright spots united into two meridional bands which are cohering on elytral base; the marginal band nearly reaching the suture on elytral hind end; 2.3-2.5 mm *Hyperaspis vinciguerrae*

Key to Chilocorinae

- 1 Front margin of clypeus with fine but clearly visible line (Fig. 14); pronotum does not join elytral base exactly on shoulders; postcoxal line on first abdominal sternum merging with posterior margin of this sternum; elytron entirely black or with red spots 2
- Front margin of clypeus without line; pronotum joins elytral base 4
- 2 Horizontal row of three reddish brown spots, often joining
Chilocorus bipustulatus
- Elytra entirely black or with one central spot 3
- 3 Elytra entirely black *Chilocorus nigrinus*
- Black elytra with one reddish brown central spot each *Chilocorus distigma*
- 4 Elytra dark; tarsal claw with basal tooth 5
- Elytra entirely brownish yellow or with black spots; tarsal claw without basal tooth . 9
- 5 Dorsal surface pubescent; 3.0-3.5 mm *Exochomus pubescens*
- Dorsal surface not pubescent 6
- 6 Pronotum entirely red *Exochomus nigripennis*
- Pronotum black with extended yellow side marks 7
- 7 Elytra black 8
- Elytra with dark bluish shine *Exochomus pulchellus*
- 8 The yellow colour on pronotal side margins mixes with the black colour of its centre
Exochomus wraniki
- The yellow colour of pronotal side margins strikingly separated from the black-coloured centre
Exochomus nigromaculatus
- 9 Dorsal surface not entirely yellowish brown 10
- Dorsal surface entirely yellowish brown *Brumoides nigrosuturalis*
- 10 Less than 2 mm long, with two small black spots on each elytron, one behind the other
Brumoides adenensis
- Longer than 2 mm, with longitudinal black stripe in the centre of each elytron (rarely interrupted)
Brumoides nigrifrons

Key to Sticholotidinae

- 1 Pubescence sparse, elytra glabrous, reddish brown, rounded, shiny; maximum length 2.5 mm
Serangium buettikeri n. sp.
- Pronotum and elytra densely pubescent. The following species are very difficult to distinguish by morphological characteristics. Exact determination requires microscopic examination of male genitalia (*Pharoscymnus*) 2
- 2 Elytron dark brownish with brighter brownish yellow spots 3
- Elytron yellow with black spots: 1-3 on each elytron and two additional ones divided by the suture, one behind the other
Pharoscymnus flexibilis
- 3 The spots forming a yellow C on the right elytron 4
- Different coloration 5
- 4 Brownish black with brownish red spots, oblong oval *Pharoscymnus arabicus*
- Brown with brighter spots, body outline rounded *Pharoscymnus c-luteus*

5	Two yellow spots on brown to black elytron		6
–	More than two spots but very variable	<i>Pharoscymnus setulosus</i>	
6	Minimum length 2.2 mm	<i>Pharoscymnus numidicus</i>	
–	Minimum length 1.7 mm	<i>Pharoscymnus tristiculus</i>	

Key to Coccinellinae

1	Mandible multidenticulate at apex; pale yellowish with eight black spots on each elytron in four horizontal rows: 2, 3, 2, 1	<i>Psyllobora bisoctonotata</i>	
–	Mandible bifid at apex		2
2	Pale yellowish, often with a slight touch of pink; pronotum with four large and three small black spots; elytron uniformly pale or rarely marked with no more than nine black rounded spots	<i>Bulaea lichatschovi albiventris</i>	
–	Not as described above		3
3	Red or yellowish red with rounded black spots; pronotum black with yellowish white marks		4
–	Different coloration		7
4	Pronotum black with large subtrapezoidal or triangular white spot on each anterolateral angle, pronotal side margins black or white; postcoxal line incomplete, bifid		5
–	Pronotum not as described above		6
5	Pronotal side margins black, elytra with seven spots altogether	<i>Coccinella septempunctata</i>	
–	Pronotal side margin mostly white, elytra with up to 11 black spots, variable	<i>Coccinella undecimpunctata aegyptiaca</i>	
6	Yellowish, pronotum with five or seven black spots; postcoxal line complete, femora not visible beyond body in dorsal view; elytra very variable	<i>Adalia decempunctata</i>	
–	Pronotum yellowish white with a large black spot on its base, forming four "fingers" with a knob on their tip	<i>Hippodamia (Adonia) variegata</i>	
7	Elytron black with yellowish red spots or entirely black		8
–	Elytron entirely yellow or red with small black spots or with black longitudinal line ...		11
8	Maximum length 5 mm		9
–	Longer than 5 mm; pronotum black with reddish yellow triangle on each anterolateral angle; elytron black with large, rounded yellow-reddish spots: a large one on the shoulder (linking the three shoulder spots in this subspecies of <i>C. lunata</i>), one semi-circular on the suture, forming a disc with the opposite spot (on the other elytron), one in the posterior half, forming a horizontal C (half moon) with its concavity towards the elytral apex and one on the posterolateral margin	<i>Cheilomenes lunata yemenensis</i>	
9	Entirely black or with dark yellow longitudinal spot on hind elytral angle	<i>Cheilomenes propinqua vicina</i>	
–	Elytron black with red spots		10
10	One semilunulate horizontal spot near the shoulder; dark form of	<i>Adalia decempunctata</i>	
–	Four or six rounded red or orange spots	<i>Oenopia oncina</i>	
11	Elytra entirely yellowish red or yellow, with black longitudinal line		12
–	Not as above		13

- 12 Pronotum and elytron yellowish red *Xanthadalia effusa rufescens*
 – Pronotum black with large yellow anterior angles; elytron yellow, mostly with one black longitudinal line *Cheilomenes propinqua vicina*
- 13 Yellow with small to minute black spots in five horizontal, irregular rows: 3 or 4, 4, 4, 1, 1-2 *Harmonia pardalina*
 – Yellow with large black spots, which are confluent and mostly rectangular. They are often linked to form a black net *Propylea quatuordecimpunctata*

Key to Epilachnini

- 1 Claws trifid (Fig. 15) *Chnootriba similis*
 – Claws with basal tooth (Fig. 16) *Henosepilachna elaterii orientalis*

SYSTEMATIC ACCOUNT

Subfamily Coccidulinae

Tribe Coccidulini

* *Rhyzobius lophantae* (Blaisdell, 1892) Figs 17-19, Plate 1

Scymnus lophantae Blaisdell, 1892. — Ent. News 3: 51.

Rhyzobius lophantae. — Pope 1981; Bull. ent. Res. 71: 22.

Material: Yemen: 84 exs from: Sana'a, 8.XII.1991, feeding on *Aspidiotus nerii* ex *Dodonea viscosa*, *Ligustrum* sp. and *Nerium oleander*, AvH; Sana'a, III.1991-II.1993, in Malaise trap, AvH.

Diagnosis: Body oblong oval. Pronotum red. Scutellum and elytra uniformly black. Body densely covered with medium-length whitish pubescence, with additional dispersed longer erected setae. Length: 2.0-3.0 mm. Male genitalia (Figs 17, 18) without special characteristics, siphonal tip not well differentiated. Spermatheca as in Fig. 19.

Biology and distribution: Predator of scale insects. Used frequently in biological pest control. Widespread, known from north, south and west Africa, southern Europe, Australia and California.

Subfamily Ortaliinae

Tribe Noviini

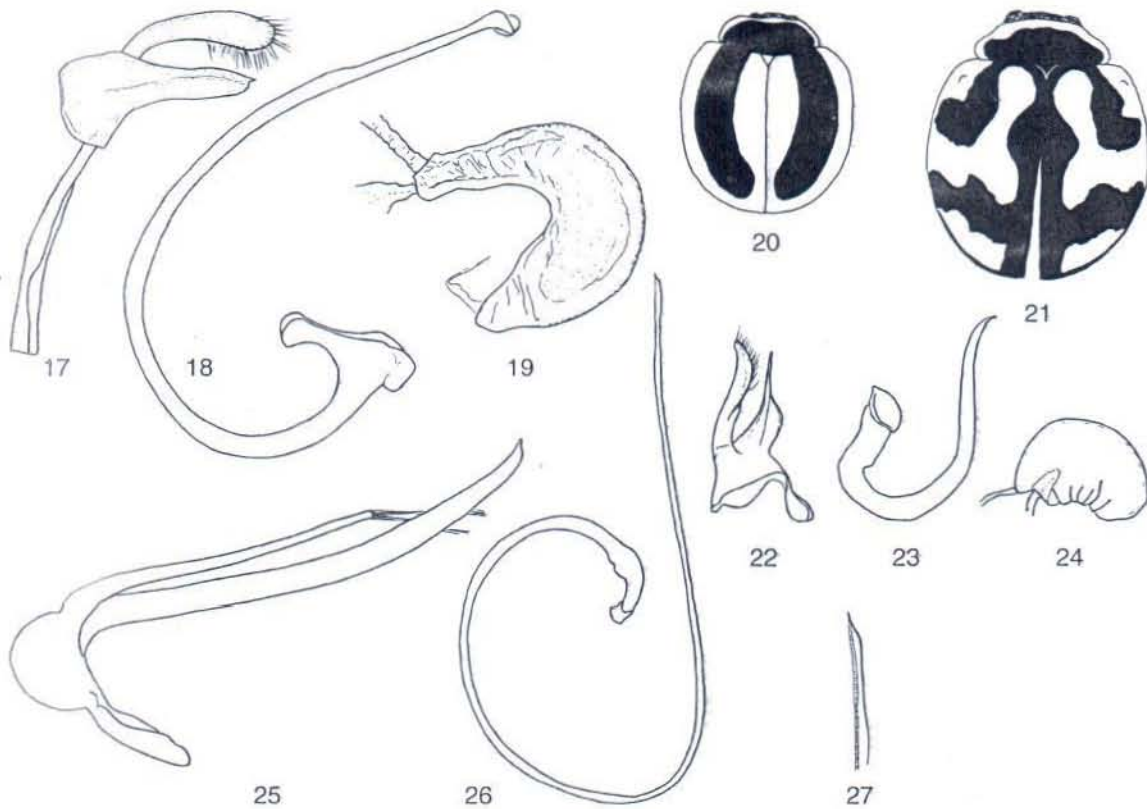
* *Rodolia argodi* Sicard, 1909 Fig. 20, Plate 2

Rodolia argodi Sicard, 1909. — Bull. Soc. Ent. France (1909): 142.

Material: Yemen: 2 ♀♀, Sana'a, IX.1991, AvH.

Diagnosis: Body rounded, obviously hairy. Head and scutellum black. Pronotum black with a reddish lateral band reaching the anterolateral angles. Elytra dark reddish with black longitudinal band along elytral suture, one third of the width of the elytra, extending from base to apex (Fig. 20). Length: 3.0-3.5 mm.

Biology and distribution: Predator of scale insects. Widespread in Africa.



Figs 17-27: 17-19: *Rhyzobius lophantae*. 17: Aedeagus. 18: Siphon. 19: Spermatheca. 20: *Rodolia argodi*, dorsal view. 21-24: *Rodolia cardinalis*. 21: Dorsal view. 22: Aedeagus. 23: Siphon. 24: Spermatheca. 25-27: *Stethorus gilvifrons*. 25: Aedeagus. 26: Siphon. 27: Tip of siphon.

* *Rodolia cardinalis* (Mulsant, 1850)

Figs 21-24, Plate 3

Vedalia cardinalis Mulsant, 1850. — Spec. Trim. Sécuripalpes: 906.

Material: Yemen: 8 exs from: Sana'a, 21.II.1992, feeding on *Icerya purchasi* ex *Citrus*, AvH; Sana'a, IV.1992, AvH.

Diagnosis: Body rounded, hairy. Head black. Pronotum black, but red anteriorly. Elytra reddish, each with two black spots of variable shape; suture black; apical part with fine black margin (Fig. 21). Length: 3.0-4.0 mm. Male genitalia: Figs 22, 23; spermatheca: Fig. 24.

Biology and distribution: This species became famous at the end of last century when it was introduced from its native Australia into California, for the control of cottony cushion scale, *Icerya purchasi*, in citrus orchards, producing the first major success in biological control. Since then, it disseminated to all continents.

Subfamily Scymninae

Tribe Stethorini

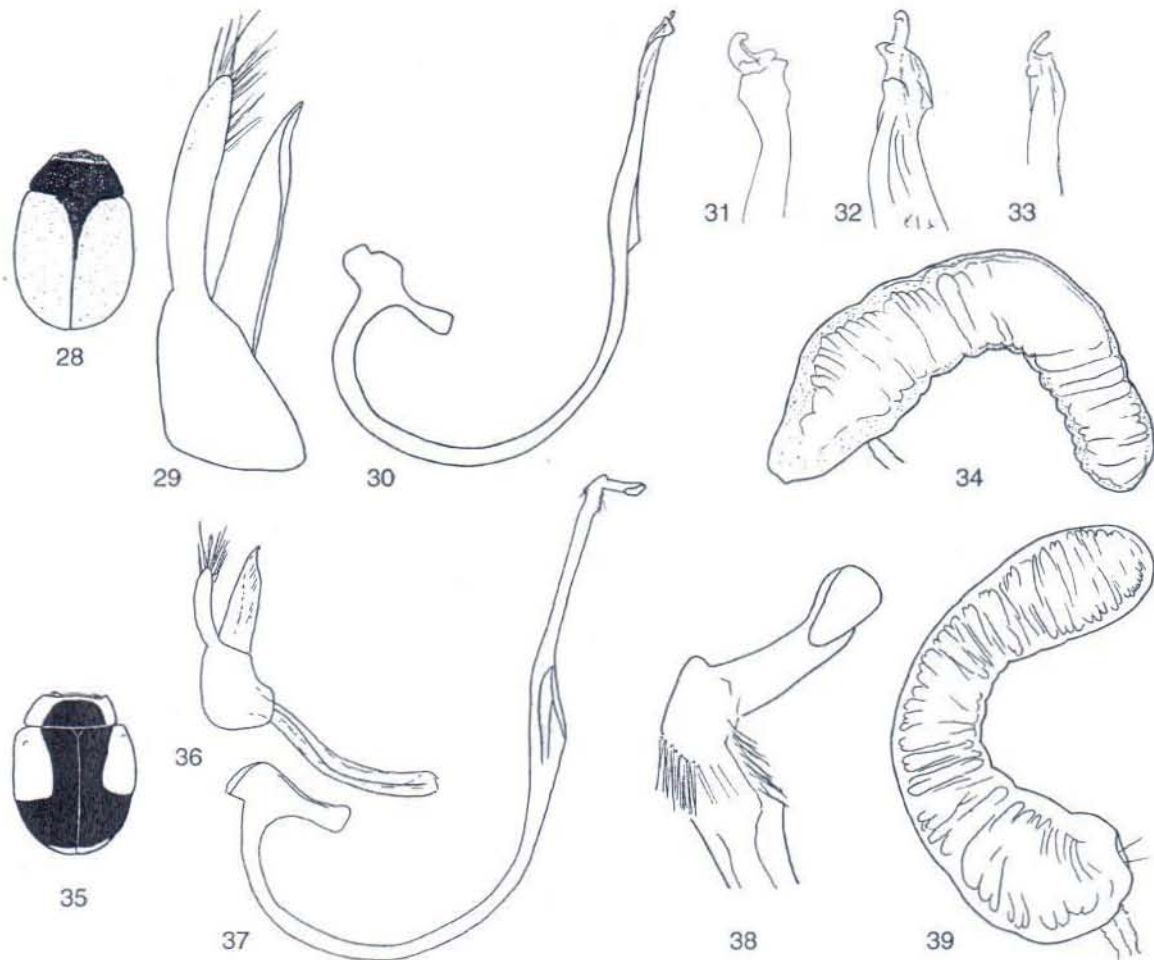
* *Stethorus gilvifrons* (Mulsant, 1850)

Figs 25-27, Plate 4

Scymnus (Pullus) gilvifrons Mulsant, 1850. — Spec. Trim. Sécuripalpes: 995.

Stethorus gilvifrons. — FÜRSCHE 1979; Fauna of Saudi Arabia 1: 248.

Material: Yemen: 161 exs from: Sana'a, III.1991, AvH; Sana'a, 8.II.1992, feeding on *Tetranychus urticae* ex *Althaea rosea*, AvH; Sana'a, IV.1992, AvH; Sadah, 13.VII.1991, AvH; Sanhan, 21.I.1992, feeding on *Oligonychus ununguis* ex *Cupressus*



Figs 28-39: 28-34: *Scymnus (Scymnus) levaillanti*. 28: Dorsal view. 29: Aedeagus. 30: Siphon. 31-33: Tip of siphon at various angles. 34: Spermatheca. 35-39: *Scymnus (Scymnus) scapuliferus*. 35: Dorsal view. 36: Aedeagus. 37: Siphon. 38: Tip of siphon. 39: Spermatheca.

sp., AvH; Sanhan, IV.1992, ex *Malus sylvestris* (apple), MK; Sanhan, VII.1992, ex *Prunus persica* (peach), MK; Seyun, 30.III.1992, AvH; Qa al-Boun, VIII.1992, ex *Prunus persica* (peach), MK.

Diagnosis: Body shortly oval, convex. Head black except testaceous anterior half to two thirds of interocular space. Pronotum and elytra black. Dorsal surface with greyish, moderately long, sparse semi-erect pubescence. Length: 1.2-1.4 mm. Male genitalia (Figs 25-27) very thin, long and forming a complete loop proximally. Female genitalia not chitinous.

Biology and distribution: Predator of spider mites. Known from the Mediterranean area, India, Iran and Saudi Arabia.

Tribe Scymnini

* *Scymnus (Scymnus) levaillanti* Mulsant, 1850

Figs 28-34

Scymnus levaillanti Mulsant, 1850. — Spec. Trim. Sécuripalpes: 964.

Scymnus levaillanti. — FÖRSCH 1979; Fauna of Saudi Arabia 1: 243-244.

Material: 172 exs from: Yemen: Sana'a, I.1991-II.1993, in Malaise trap, AvH; Sana'a, VIII.1992, ex *Malus sylvestris*, MK; Sana'a, VIII.1993, ex *Prunus persica*, MK; Sana'a, 11.IX.1993, AvH; al-Mahwit, 7.VI.1991, 21.IX.1991, AvH; Sadah,

13.VII.1991, AvH; Medinat al-Shirq, 21.XI.1991, AvH; Wadi Surdud, 29.XII.1991, AvH; Sumara Pass, 22.II.1992, AvH; al-Hajjarah, 14.III.1992, AvH; Seyun, 30.III.1992, AvH; Wadi Hadramaut, 27.IV.1992, AvH; Sanhan, IV.1992-VII.1993, ex *Malus sylvestris* and *Prunus persica*, MK; Qa al-Boun, V.1992-IV.1993, ex *Malus sylvestris* and *Prunus persica*, MK; al-Kowd, X.1992-X.1993, in Malaise trap, AvH; Taiz, 16.II.1993, MK; al-Mahwit – at-Tawillah, 10.III.1993, AvH; Taiz – ar-Rahidah, 14.III.1993, AvH; Taiz – at-Turba, 14.III.1993, AvH; Zinjibar, 21.III.1993, AvH; Dhamar, X.1993, beaten from alfalfa, AD. — Socotra: Muomi, 15.IV.1993, AvH; Noheed, 16.IV.1993, AvH; Mouri, 17.IV.1993, AvH.

Diagnosis: Head pale in male, black with anterior yellow border in female. Pronotum with central large dark patch at disc. Elytra brownish, sometimes with black zone covering anterior margin, extending more or less along sutural border (Fig. 28). Length: 1.8-2.2 mm. Male genitalia: Figs 29-33; spermatheca: Fig. 34.

Biology and distribution: Predator of aphids and scale insects. Previously known from the Mediterranean area, Africa, India, South Asia and Saudi Arabia.

* *Scymnus (Scymnus) scapuliferus* Mulsant, 1850

Figs 35-39

Scymnus scapuliferus Mulsant, 1850. — Spec. Trim. Sécuripalpes: 968.

Material: Yemen: 98 exs from: al-Kowd, X.1992-IV.1993, in Malaise trap, AvH; al-Mahwit – at-Tawillah, 10.III.1993, AvH; Wadi Udain, 13.III.1993, AvH; Taiz – at-Turba, 14.III.1995, AvH; Taiz – Mafraq, 15.III.1993, AvH.

Diagnosis: Body elongated, convex. Head pale in male, black with anterior yellow border in female. Pronotum black, except for narrow testaceous border on anterior margin. Elytra black with yellowish, reddish or pale, nearly quadrangular shoulder spot along proximal two thirds (Fig. 35). Length: 1.8-2.1 mm. Male genitalia with tip of siphos prolonged and curved (Figs 36-38); spermatheca: Fig. 39.

Distribution: Reported from south, central and west Africa.

* *Scymnus (Scymnus) viduus* Weise, 1897

Figs 40-44

Scymnus (Scymnus) viduus Weise, 1897. — Dt. Ent. Zeitschr. 11: 302.

Material: Yemen: 2 ♂♂, 1 ♀ from: al-Kowd, IV.1993, in Malaise trap, AvH; Sumara Pass, 13.III.1993, AvH.

Diagnosis: Head pale in male, darker in female. Body completely black, sometimes with a straight lighter band along the anterior margin of the elytra. Body covered with fine pubescence. Length: 1.8-2.1 mm. Male genitalia: Figs 40-43; spermatheca: Fig. 44.

Distribution: Previously recorded only from Tanzania, Zaire, Guinea and Nigeria.

* *Scymnus (Pullus) nigropictus* Wollaston, 1867

Figs 45-50

Scymnus nigropictus Wollaston, 1867. — Coleopt. Hesp.: 160.

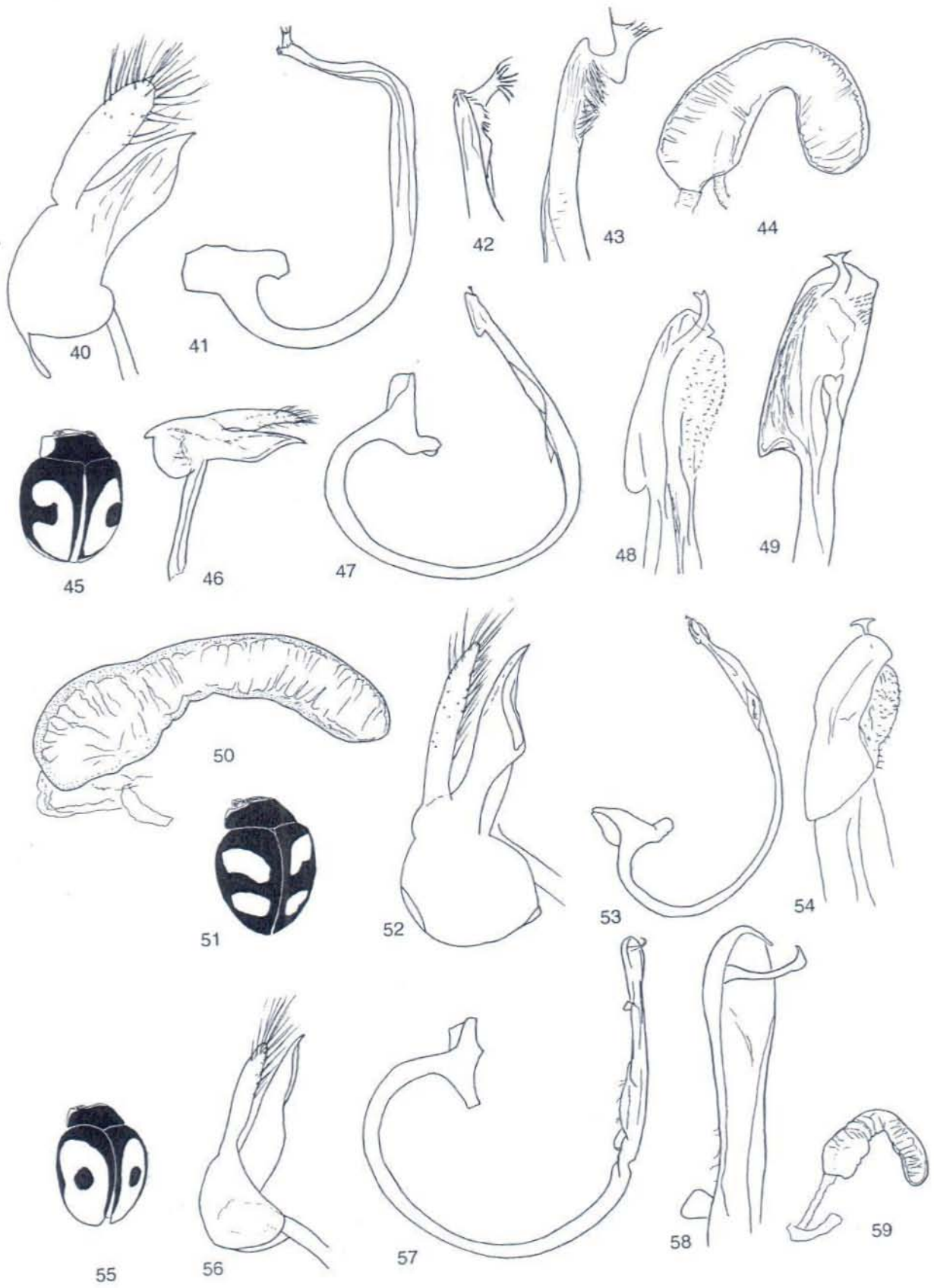
Scymnus (Pullus) nigropictus. — FÜRSCH 1989 a; Fauna of Saudi Arabia 10: 116.

Material: Yemen: 6 ♂♂, 9 ♀♀ from: Sana'a, XII.1990, AvH; Sumara Pass, 22.III.1992, AvH; Seyun, 30.III.1992, AvH; al-Kowd, X.1992-IV.1993, in Malaise trap, AvH; Mafhaq – Khamis Bani Sa'ad, 21.III.1993, AvH; Mukeiras, 11.IV.1993, AvH; Aden – Little Aden, 12.IV.1993, AvH; Dhamar, X.1993, ex *Medicago sativa* (alfalfa), AD.

Diagnosis: Head pale in male, darker in female. Elytra brownish to black, with longitudinal pale spot, on this a central dark spot sometimes coalescent with brownish lateral or sutural margins (Fig. 45). Length: 1.8-2.2 mm. Male genitalia: siphonal tip shows pronounced bump with its hook turned towards the base (Figs 46-49); spermatheca: Fig. 50.

Distribution: Known from Cape Verde Islands, Senegal, Nigeria, Kenya, Egypt and Saudi Arabia.

Figs 40-59: 40-44: *Scymnus (Scymnus) viduus*. 40: Aedeagus. 41: Siphon. 42: Tip of siphon. 43: Tip of siphon. 44: Spermatheca. 45-50: *Scymnus (Pullus) nigropictus*. 45: Dorsal view. 46: Aedeagus. 47: Siphon. 48-49: Tip of siphon at different angles. 50: Spermatheca. 51-54: *Scymnus (Pullus) subvillosus*. 51: Dorsal view. 52: Aedeagus. 53: Siphon. 54: Tip of siphon. 55-59: *Scymnus (Pullus) yemenensis*. 55: Dorsal view. 56: Aedeagus. 57: Siphon. 58: Tip of siphon. 59: Spermatheca.



Scymnus (Pullus) subvillosus (Goeze, 1777)

Figs 51-54

Coccinella subvillosa Goeze, 1777. — Ent. Beytr. 1: 247.*Pullus subvillosus*. — Kapur 1959; Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 280.*Scymnus (Pullus) subvillosus*. — FÜRSCH 1979; Fauna of Saudi Arabia 1: 244; FÜRSCH 1989 a; Fauna of Saudi Arabia 10: 115.

Material: Yemen: 2 ♂♂ from: al-Kowd, II.1993, in Malaise trap, AvH; Mukeiras, 11.IV.1993, AvH.

Diagnosis: Head pale in male. Elytra each with two spots (Fig. 51). Length: 1.8-2.2 mm. Male genitalia with basal lobe distinctly longer than parameres, its tip curved in the direction of the parameres (Figs 52-54).

Distribution: Common in the Mediterranean area and the Middle East.

Scymnus (Pullus) yemenensis Kapur, 1959

Figs 55-59, Plate 5

Pullus yemenensis Kapur, 1959. — Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 281.*Scymnus (Pullus) yemenensis*. — FÜRSCH 1979; Fauna of Saudi Arabia 1: 244; FÜRSCH 1989 a; Fauna of Saudi Arabia 10: 117.

Material: Yemen: 37 ♂♂, 54 ♀♀ from: Sana'a, I.1991-X.1993, AvH; Wadi Dhar, 6.I.1991, AvH; al-Mahwit, 7.VI.1991, 21.IX.1991, AvH; Qa al-Boun, X.1991-I.1993, ex *Malus sylvestris* and *Prunus persica*, MK; Mabar - Medinat al-Shirq, 12.III.1992, AvH; Sanhan, III.1992-IX.1993, ex *Prunus persica*, MK; Mabar, IV.1993-VII.1993, ex *Prunus persica*, MK; Dhamar, X.1993, ex *Medicago sativa*, AD.

Diagnosis: Body rounded oval, moderately convex. Head black in female, anterior half of frons testaceous in male. Pronotum black in female, in male almost black, except for narrow reddish border at anterior margin and small triangular reddish testaceous patch at each anterior angle. Elytra testaceous, with black basal area, black sutural border, gradually becoming narrow towards apex, irregularly wide black border along external margin and an oval black discal spot on each elytron (Fig. 55). Length: 1.8-2.2 mm. Male genitalia with slender basal lobe, much longer than parameres (Figs 56-58); spermatheca: Fig. 59.

Distribution: Known only from Yemen and Saudi Arabia.

Nephus (Nephus) crucifer Fleischer, 1900

Figs 60-65, Plate 6

Nephus crucifer Fleischer, 1900. — Wien. Ent. Zeitschr. 19: 235.*Nephus crucifer*. — KAPUR 1959; Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 285; FÜRSCH 1979; Fauna of Saudi Arabia 1: 244.

Material: Yemen: 66 ♂♂, 51 ♀♀ from: Sana'a, XII.1990-X.1993, AvH; al-Mahwit, 7.IX.1991, 17.III.1992, 19.III.1993, AvH; Sumara Pass, 22.III.1992, AvH; Mabar, VIII.1993, ex *Prunus persica*, MK; Sanhan, X.1993, ex *Malus sylvestris*, MK.

Diagnosis: Body elongated oval. Head pale in male, darker in female. Pronotum dark brown, sometimes testaceous with a scutellar dark triangular spot. Elytra bright brownish, presenting a dark cross along suture (Fig. 60). Length: 1.8-2.2 mm. Male genitalia with complex siphonal tip (Figs 61-64); spermatheca: Fig. 65.

Distribution: Known from Turkestan, Yemen and Saudi Arabia.

Nephus (Geminosipho) arcuatus Kapur, 1959

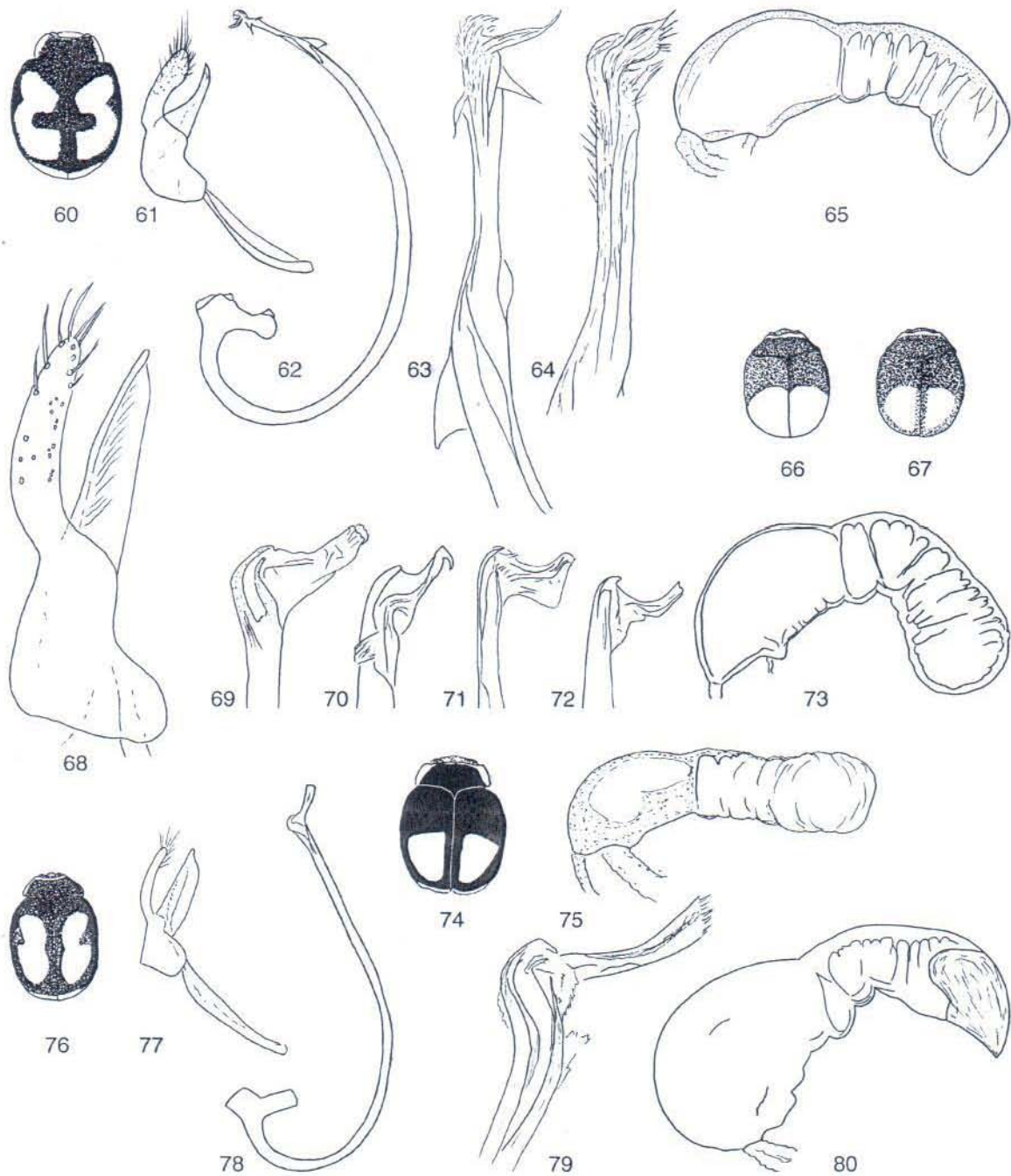
Figs 66-73

Nephus arcuatus Kapur, 1959. — Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 287.*Nephus arcuatus*. — FÜRSCH 1979; Fauna of Saudi Arabia 1: 244.*Nephus (Geminosipho) arcuatus*. — FÜRSCH 1992; Coccinella 4: 38.

Material: Yemen: 6 ♂♂, 9 ♀♀ from: Hamam Ali, 16.II.1992, AvH; Wadi Sara'a, 17.III.1992, AvH; al-Kowd, II.1993-XI.1993, in Malaise trap, AvH; al-Mahwit - at-Tawillah, 10.III.1993, AvH; Taiz - ar-Rahidah, 14.III.1993, AvH.

Diagnosis: Body roundly oval, convex. Head in male testaceous, in female dark except for testaceous anterior margin of clypeus. Pronotum in male testaceous with central part darker; dark in female with fine testaceous band anteriorly and laterally. Elytra anteriorly (two fifths to one half) dark with large posterior testaceous spot that reaches the shoulders (Fig. 66). In some specimens the dark part of the elytra extends along lateral and sutural margins (Fig. 67). Length: 1.2-1.3 mm. Male genitalia: Figs 68-72; spermatheca: Fig. 73.

Distribution: Known from Yemen and Saudi Arabia.



Figs 60-80: 60-65: *Nephus* (*Nephus*) *crucifer*. 60: Dorsal view. 61: Aedeagus. 62: Siphon. 63-64: Tip of siphon at different angles. 65: Spermatheca. 66-73: *Nephus* (*Geminosisipho*) *arcuatus*. 66: Dorsal view. 67: Aedeagus. 68: Siphon. 69-72: Tip of siphon at various angles. 73: Spermatheca. 74-75: *Nephus* (*Geminosisipho*) *fenestratus*. 74: Dorsal view. 75: Spermatheca. 76-80: *Nephus* (*Geminosisipho*) *phenacocophagus*. 76: Dorsal view. 77: Aedeagus. 78: Siphon. 79: Tip of siphon. 80: Spermatheca.

* *Nephus* (*Geminosisipho*) *fenestratus* (Sahlberg, 1913)

Scymnus fenestratus Sahlberg, 1913. — Öfv. Finska Vet. Soc. Förh. 55 (A 8): 83.

Nephus fenestratus. — FÜRSCH 1979; Fauna of Saudi Arabia 1: 244.

Material: Yemen: 1 ♀, al-Mahwit, 17.III.1992, AvH.

Figs 74-75

Diagnosis: Body shortly oval, strongly convex. Predominantly very dark to black, covered by dense short pallid hairs. Pronotum darker centrally. Elytra dark, with brighter spots on posterior half, almost extending from base to apex (Fig. 74). Length: 1.7 mm. Spermatheca: Fig. 75.

Distribution: Previously only known from Egypt, Syria and Saudi Arabia.

* *Nephus (Geminosipho) phenacoccephagus* Fürsch, 1987 Figs 76-80

Nephus (Geminosipho) phenacoccephagus Fürsch, 1987. — Rev. Zool. Afr. 100: 387.

Material: Yemen: 5 ♂♂, 10 ♀♀ from: Sana'a, IV.1991, 6.VII.1992, AvH; Sumara Pass, 22.II.1992, AvH; al-Mahwit, 6-7.VI.1991, AvH; Qa al-Boun, X.1991, ex *Malus sylvestris* and *Prunus persica*, MK; Hajjah, 15.V.1992, AvH; Mafhaq – Khamis Bani Sa'ad, 21.III.1993, AvH.

Diagnosis: Body oval, dark brown. Head in male reddish brown, in female black. Lateral and anterior margins of pronotum light. Elytra yellowish brown, with black margins and suture (Fig. 76). Length: 1.7 mm. Male genitalia: Figs 77-79; spermatheca: Fig. 80.

Distribution: Known from west Africa: Senegal, Nigeria and Gabon.

* *Nephus (Geminosipho) sudanicus* Weise, 1925 Figs 81-85

Nephus sudanicus Weise, 1925. — Denkschr. Akad. Wiss. Wien 100: 228.

Nephus (Geminosipho) sudanicus. — Fürsch 1992; Coccinella 4: 54.

Material: Yemen: 2 ♂♂, 3 ♀♀ from: Sana'a, XI.1991, XII.1992, I.1993, AvH; Mabar – Medinat al-Shirq, 12.II.1993, AvH; al-Mahwit – at-Tawillah, 10.III.1993, AvH.

Diagnosis: Body slender. Elytra yellowish, with darker margins and suture (Fig. 81). Length: 1.5 mm. Male genitalia: Figs 82-84; spermatheca: Fig. 85.

Distribution: Until now, this species has only been recorded from the northern half of Africa: Morocco, Mauritania, Senegal, Gambia, Nigeria, Chad and Sudan.

* *Nephus (Bipunctatus) nigricans* Weise, 1879 Figs 86-90

Scymnus (Nephus) bipunctatus nigricans Weise, 1879. — Zeitschr. Ent. Breslau 7: 154.

Nephus (Bipunctatus) nigricans. — Fürsch 1987; Ent. Abh. 51: 66.

Material: Yemen: 1 ♂, Mukeiras, 11.IV.1993, AvH; 1 ex., Sumara Pass, 13.X.1993, AvH.

Diagnosis: Body oval, pubescent, black. One of the specimens with clear brown spot on posterior half of each elytron, broadening transversally (Fig. 86). In the other specimen such spots are not evident. Length: 1.3-1.9 mm. Male genitalia: Figs 87-89; spermatheca: Fig. 90.

Distribution: Known only from the Mediterranean region.

* *Nephus (Bipunctatus) peyerimhoffi* Sicard, 1923 Figs 91-93

Nephus peyerimhoffi Sicard, 1923. — Bull. Soc. Hist. Nat. Afr. Nord 14: 79.

Material: Yemen: 1 ♀, Thibar, 12.III.1992, AvH; 1 ♀, Mabar – Medinat al-Shirq, 12.III.1992, AvH; 1 ♀. — Socotra: Nogeed, 16.IV.1993, AvH.

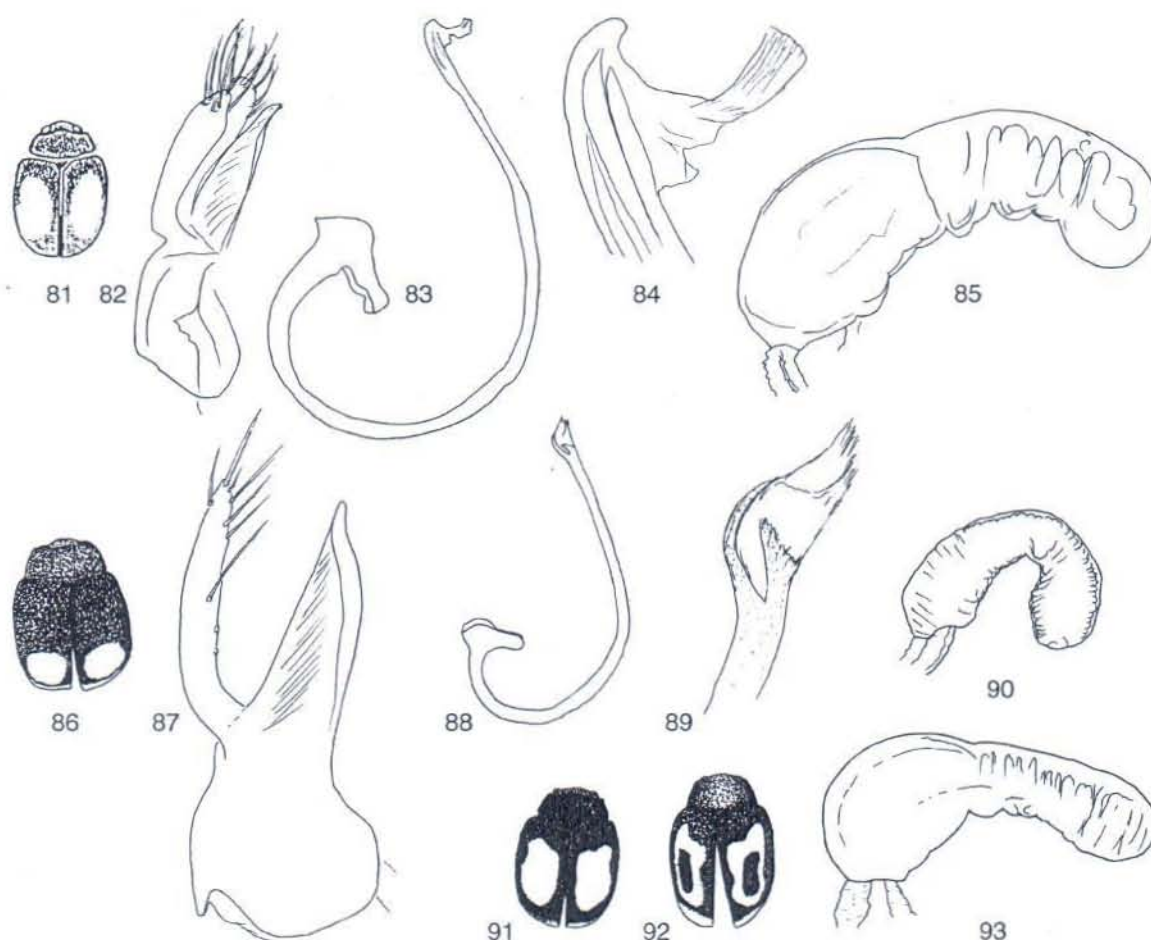
Diagnosis: Body an elongate oval, covered with greyish pubescence. Elytra black, each with yellow spot (Fig. 91). In one of the specimens there is an elongated black spot within the yellow spot (Fig. 92). Length: 1.9 mm. Spermatheca: Fig. 93.

Distribution: This species has been recorded from north Africa, Canary Islands and Portugal.

* *Nephus (Bipunctatus) wittmeri* Fürsch, 1979 Figs 94-102, Plate 7

Nephus wittmeri Fürsch, 1979. — Fauna of Saudi Arabia 1: 245-247.

Material: Yemen: 54 exs from: Sana'a, II.1992-II.1993, AvH; Sumara Pass, 22.III.1992, AvH; al-Kowd, X.1992-IV.1993, in Malaise trap, AvH; Zinjibar, 20.III.1993, AvH; Sanhan, III.1993-VIII.1993, ex *Prunus persica*, MK; Mukeiras, 11.IV.1993, AvH; Aden – Little Aden, 12.IV.1993, AvH.



Figs 81-93: 81-85: *Nephus (Geminosipho) sudanicus*. 81: Dorsal view. 82: Aedeagus. 83: Siphus. 84: Tip of siphus. 85: Spermatheca. 86-90: *Nephus (Bipunctatus) nigricans*. 86: Dorsal view. 87: Aedeagus. 88: Siphus. 89: Tip of siphus. 90: Spermatheca. 91-93: *Nephus (Bipunctatus) peyerimhoffi*. 91-92: Dorsal view. 93: Spermatheca.

Diagnosis: Body oval, generally uniformly coloured, straw yellow to yellowish brown (Fig. 94). Some specimens with pronotum and scutellar part of elytra darker. Length: 1.3-1.5 mm. Male genitalia with complex siphonal tip, but always with small wings and terminal filaments (Figs 95-101); spermatheca: Fig. 102.

Distribution: Currently known only from Saudi Arabia.

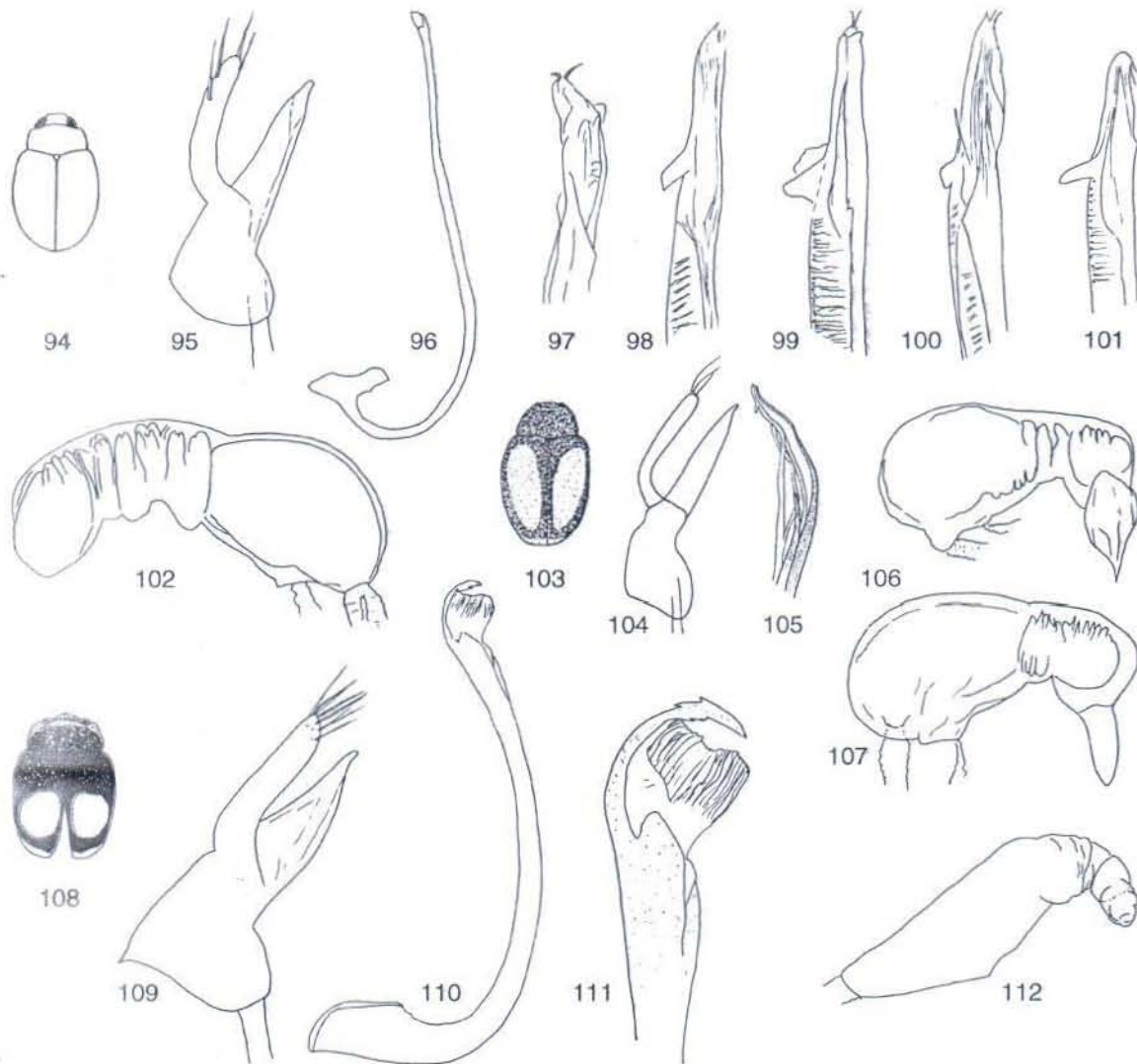
* *Nephus (Sidis) hiekei riadhensis* Fürsch, 1979

Figs 103-107

Nephus (Sidis) hiekei riadhensis Fürsch, 1979. — Fauna of Saudi Arabia 1: 247.

Material: Yemen: 7 ♂♂, 14 ♀♀ from: Sana'a, II.1991, II.1992, IV.1992, IX.1992, AvH; al-Mahwit, 10.III.1992, AvH; Mabar – Medinat al-Shirq, 12.III.1992, AvH; Sanhan, III.1992, VIII.1993, ex *Prunus persica*, MK; al-Kowd, X.1992-II.1993, in Malaise trap, AvH.

Diagnosis: Body elongated straightly, yellow, covered with whitish hairs. Elytra with longitudinal spots over almost the whole surface from disk to apex (Fig. 103). Sometimes the lighter spots are inconspicuous, turning the elytra almost uniformly brownish. Length: 1.8 mm. Male genitalia: Figs 104, 105; spermatheca: Figs 106, 107.



Figs 94-112: 94-102: *Nephus (Bipunctatus) wittmeri*. 94: Dorsal view. 95: Aedeagus. 96: Siphon. 97-101: Tip of siphon at various angles. 102: Spermatheca. 103-107: *Nephus (Sidis) biebei riadhensis*. 103: Dorsal view. 104: Aedeagus. 105: Tip of siphon. 106-107: Spermatheca. 108-112: *Nephus (Sidis) macilentus*. 108: Dorsal view. 109: Aedeagus. 110: Siphon. 111: Tip of siphon. 112: Spermatheca.

Biology and distribution: Predator of mealybugs. The nominal species has been recorded from Portugal, Spain, Greece, Turkey, Palestine, Lebanon and Iraq. The subspecies *N. (S.) h. riadhensis* was previously known only from Saudi Arabia.

* *Nephus (Sidis) macilentus* Stenius, 1952

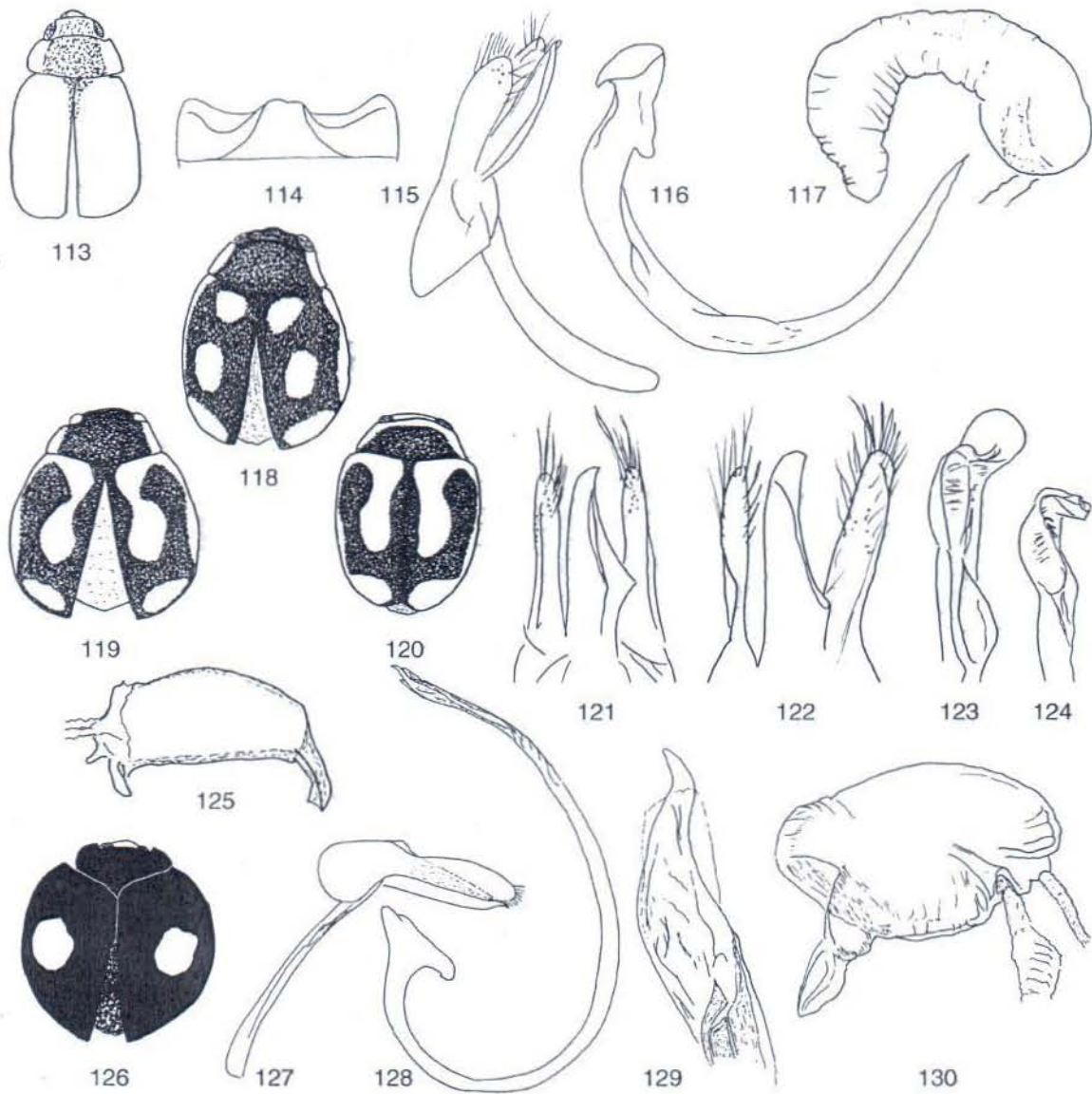
Figs 108-112

Nephus macilentus Stenius, 1952. — Notul. Ent. 4: 155.

Nephus macilentus. — Fürsch 1965; Mitt. Münch. Ent. Ges. 55: 190.

Material: Yemen: 2 ♂♂, 4 ♀♀ from: Qa Jahran, 17.IX.1991, AvH; Sana'a, II.1992, AvH; Wadi Sara'a, 17.III.1992, AvH; Sumara Pass, 22.III.1992, AvH; Qa al-Boun, IV.1992, ex *Prunus persica*, MK.

Diagnosis: Body oval, brownish, covered with light pubescence. Head of male lighter coloured. Anterior margin of pronotum slightly lighter than rest. Elytra with brighter subapical spot,



Figs 113-130: 113-117: *Diomus rubidus adenensis*. 113: Dorsal view. 114: Postcoxal line and first abdominal tergite. 115: Aedeagus. 116: Siphus. 117: Spermatheca. 118-125: *Hyperaspis vinciguerrae*. 118-120: Dorsal view. 121-122: Aedeagus. 123-124: Tip of siphus at different angles. 125: Spermatheca. 126-130: *Chilocorus distigma*. 126: Dorsal view. 127: Aedeagus. 128: Siphus. 129: Tip of siphus. 130: Spermatheca.

sometimes extending over almost whole posterior half (Fig. 108). Length: 1.8 mm. Male genitalia: Figs 109-111; spermatheca: Fig. 112.

Distribution: So far known only from Lebanon.

* *Diomus anemicus* Fürsch, 1960

Diomus anemicus Fürsch, 1960. — Ent. Arb. Mus. Frey 11: 300.

Material: Yemen: 1 ex., Sana'a, I.1991, AvH; 1 ex., Sumara Pass, 22.II.1992, AvH.

Diagnosis: Body yellow, with slightly darker lateral margin. Length: 1.2 mm.

Distribution: Previously known only from Egypt and Palestine.

Diomus rubidus adenensis (Kapur, 1959)

Figs 113-117

Nephus adenensis Kapur, 1959. — Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 286.*Diomus rubidus adenensis*. — FORSCH 1979; Fauna of Saudi Arabia 1: 247.

Material: Yemen: 1 ♂, 5 ♀♀ from: Sana'a, IV.1992, AvH; Wadi Udain, 13.III.1993, AvH; al-Kowd, IV.1993, in Malaise trap, AvH.

Diagnosis: Body moderately convex. Medium part of pronotum, base of elytra around scutellum and sometimes sutural margin, darker (Fig. 113). Postcoxal line incomplete, not reaching hind margin of first abdominal sternite (Fig. 114). Length: 1.3 mm. Male genitalia: Figs 115, 116; spermatheca: Fig. 117.

Distribution: The subspecies was described from Aden and has also been recorded from Egypt and Saudi Arabia.

Tribe **Hyperaspidini***Hyperaspis vinciguerrae* Capra, 1929

Figs 118-125, Plate 8

Hyperaspis vinciguerrae Capra, 1929. — Ann. Mus. Genova 43: 241.*Hyperaspis vinciguerrae*. — KAPUR 1959; Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 290.

Material: Yemen: 5 ♂♂, 10 ♀♀ from: Wadi Dhar, 6.I.1991, AvH; Wadi Surdud, 29.XII.1991, AvH; al-Kowd, I.1993, III.1993, IV.1993, all in Malaise trap, AvH.

Diagnosis: Body oval, somewhat convex. Head dark in female, testaceous in male. Pronotum black, with whitish yellow lateral margins; in males anterior margins of same colour. Elytra dark brown to black, with bright spots united to two meridional bands that join at elytral base (Fig. 120). Some specimens show, at elytral centre, three separate spots in a meridional row (Fig. 118); other specimens represent a transitional form (Fig. 119). Length: 2.8-3.2 mm. Male genitalia with parameres slightly longer than basal lobe (Figs 121, 122); siphonal tip without special characteristics (Figs 123, 124); spermatheca: Fig. 125.

Distribution: Known from Libya (type locality), northern and eastern Africa, Yemen and Saudi Arabia.

Subfamily **Chilocorinae**Tribe **Chilocorini***Chilocorus distigma* Klug, 1835

Figs 126-130, Plate 9

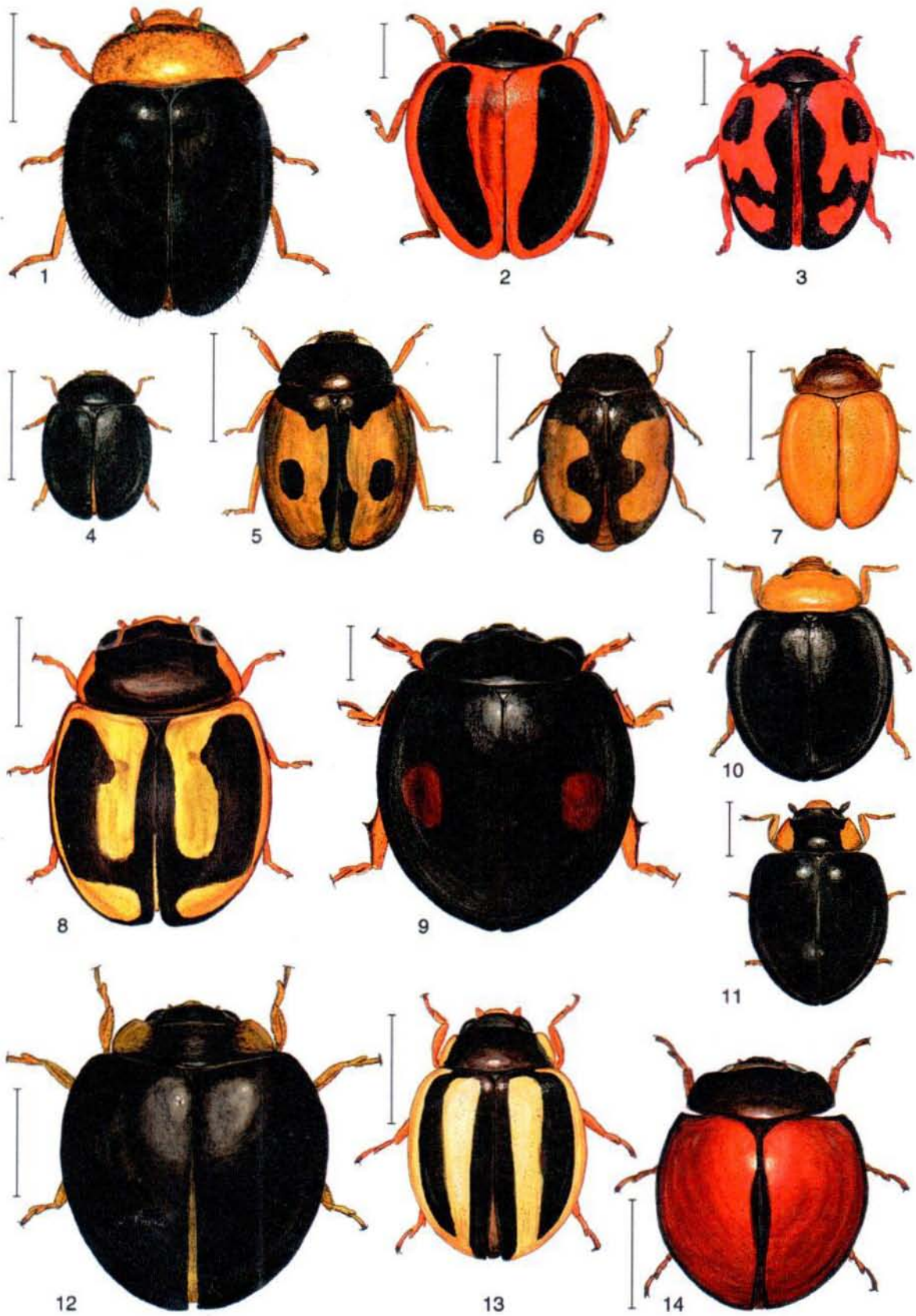
Chilocorus distigma Klug, 1835. — Ermans Reise: 49.

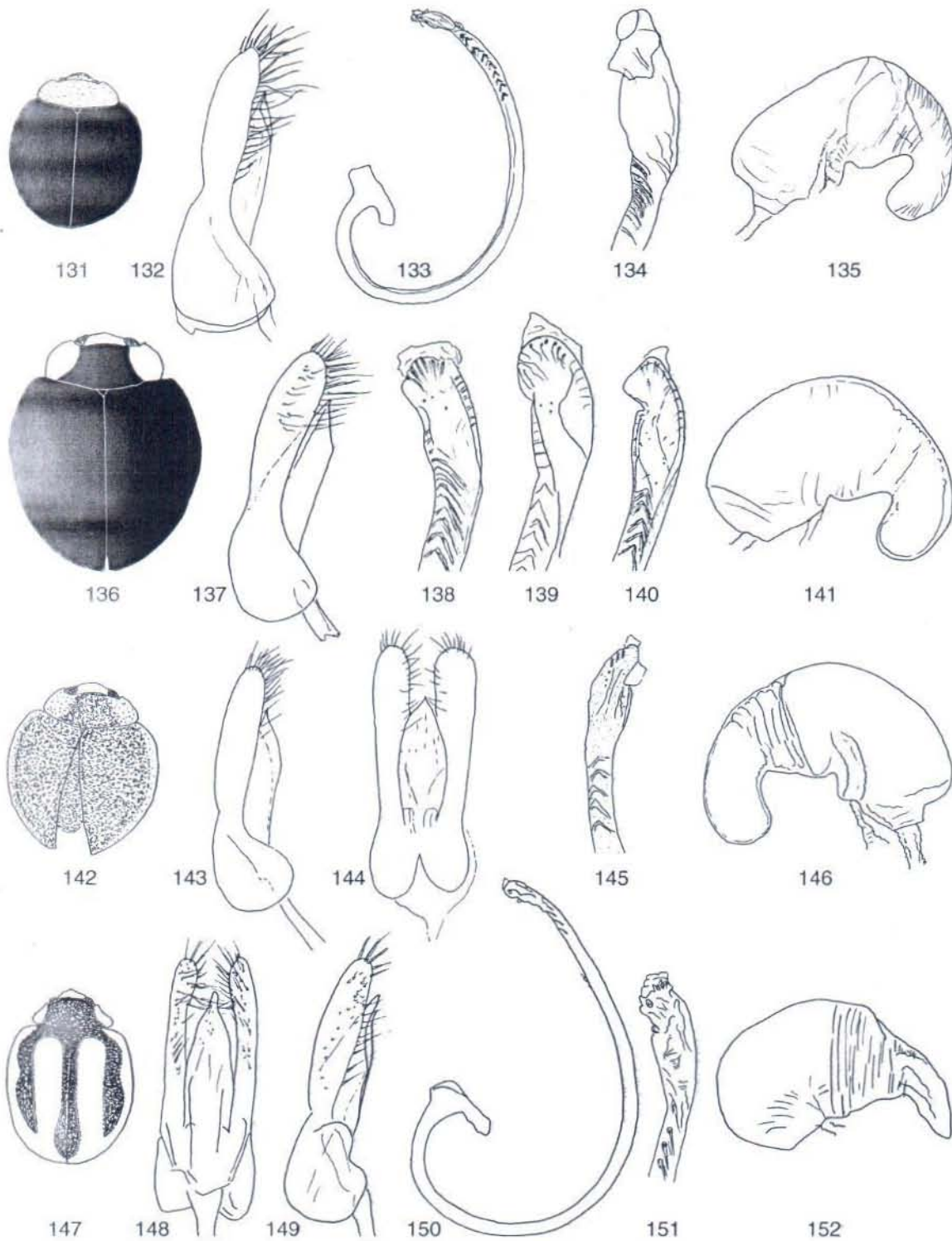
Material: Yemen: 11 exs from: Mukalla - Seyun, 20.II.1992, MM; Shaher, 20.II.1992, MM; Zinjibar, 20.III.1993, AvH.

Diagnosis: Body cylindrical, black. Central disk of elytra with testaceous spot (Fig. 126). Length: 4.5-6.0 mm. Male genitalia: Figs 127-129; spermatheca: Fig. 130.

Distribution: Widely distributed in tropical Africa.

Plates 1-14: 1: *Rhyzobius lophantae*. 2: *Rodolia argodi*. 3: *Rodolia cardinalis*. 4: *Stethorus gilvifrons*. 5: *Scymnus (Pullus) yemenensis*. 6: *Nephus (Nephus) crucifer*. 7: *Nephus (Bipunctatus) wittmeri*. 8: *Hyperaspis vinciguerrae*. 9: *Chilocorus distigma*. 10: *Exochomus nigripennis*. 11: *Exochomus nigromaculatus*. 12: *Exochomus pubescens*. 13: *Brumoides nigrifrons*. 14: *Serangium buettikeri* Fürsch n. sp. (Scales bars = 1 mm).





Figs 131-152: 131-135: *Exochomus nigripennis*. 131: Dorsal view. 132: Aedeagus. 133: Siphon. 134: Tip of siphon. 135: Spermatheca. 136-141: *Exochomus nigromaculatus*. 136: Dorsal view. 137: Aedeagus. 138-140: Tip of siphon at various angles. 141: Spermatheca. 142-146: *Exochomus pubescens*. 142: Dorsal view. 143-144: Aedeagus. 145: Tip of siphon. 146: Spermatheca. 147-152: *Brumoides nigrifrons*. 147: Dorsal view. 148-149: Aedeagus. 150: Siphon. 151: Tip of siphon. 152: Spermatheca.

Exochomus nigripennis Erichson, 1843

Figs 131-135, Plate 10

Exochomus flavipes nigripennis Erichson, 1843. — Arch. Naturgesch. 9: 267.*Exochomus nigripennis*. — FÜRSCH 1979; Fauna of Saudi Arabia 1: 240.

Material: Yemen: 6 exs from: Sana'a, XII.1990, I.1991, II.1991, AvH; Seyhut, 9.VI.1992, MK.

Diagnosis: Body subcylindrical. Head and pronotum reddish. Scutellum and elytra black, with dense fine puncturation (Fig. 131). Length: 3.5-5.5 mm. Male genitalia: Figs 132-134; spermatheca: Fig. 135.

Distribution: Known from the northern half of Africa, Iran, Afghanistan, Saudi Arabia and Yemen.

* *Exochomus nigromaculatus* (Goeze, 1777)

Figs 136-141, Plate 11

Coccinella nigromaculata Goeze, 1777. — Ent. Beytr. 2: 248.

Material: Yemen: 13 exs from: Sana'a, II.1991, AvH; Medinat al-Shirq, 20.II.1991, AvH; al-Mahwit, 7.VI.1991, AvH; Taiz, 16.II.1991, ex *Citrus*, MK; Mafhaq - Khamis Bani Sa'ad, 9.III.1993, AvH; Sanhan, VII.1993, ex *Malus sylvestris* and *Prunus persica*, MK.

Diagnosis: Body circular, somewhat longer than broad, black. Head black in female, yellow to black in male. Pronotum with yellow lateral margins. Elytra with fine puncturation, sometimes with metallic reflections (Fig. 136). Length: 3.0-5.5 mm. Male genitalia: Figs 137-140; spermatheca: Fig. 141.

Distribution: Widely distributed in south and central Europe, Africa and Asia.

Exochomus pubescens Küster, 1848

Figs 142-146, Plate 12

Exochomus pubescens Küster, 1848. — Käfer Europas 13: 94.*Exochomus pubescens*. — KAPUR 1959; Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 292; FÜRSCH 1979; Fauna of Saudi Arabia 1: 240.

Material: Yemen: 6 exs, Taiz - Mafraq, 15.III.1993, AvH.

Diagnosis: Body circular, almost as broad as long, dorsal surface pubescent. Head completely dark in female, testaceous in male. Pronotum testaceous, with darker central part. Elytra dark reddish brown, with slightly lighter marginal border (Fig. 142). Length: 2.5-3.0 mm. Male genitalia: Figs 143-145; spermatheca: Fig. 146.

Distribution: Recorded from the Mediterranean area, Africa, Iran, India, Saudi Arabia and Yemen.

* *Brumoides nigrifrons* (Gerstäcker, 1871)

Figs 147-152, Plate 13

Brumus nigrifrons Gerstäcker, 1871. — Arch. Naturgesch.: 347.

Material: 25 exs from: Yemen: Sanhan, III.1992, ex *Malus sylvestris*, MK. — Socotra: Hadibo, 14.IV.1993, AvH; Muomi, 15.IV.1993, AvH; Nogeed, 16.IV.1993, AvH.

Diagnosis: Head yellow. Pronotum dark, except for yellow anterolateral angles. Elytra yellowish brown, with black longitudinal stripe in the centre of each; suture black (Fig. 147). Length: 2.0-3.0 mm. Male genitalia: Figs 148-151; spermatheca: Fig. 152.

Distribution: Known from various parts of Africa.

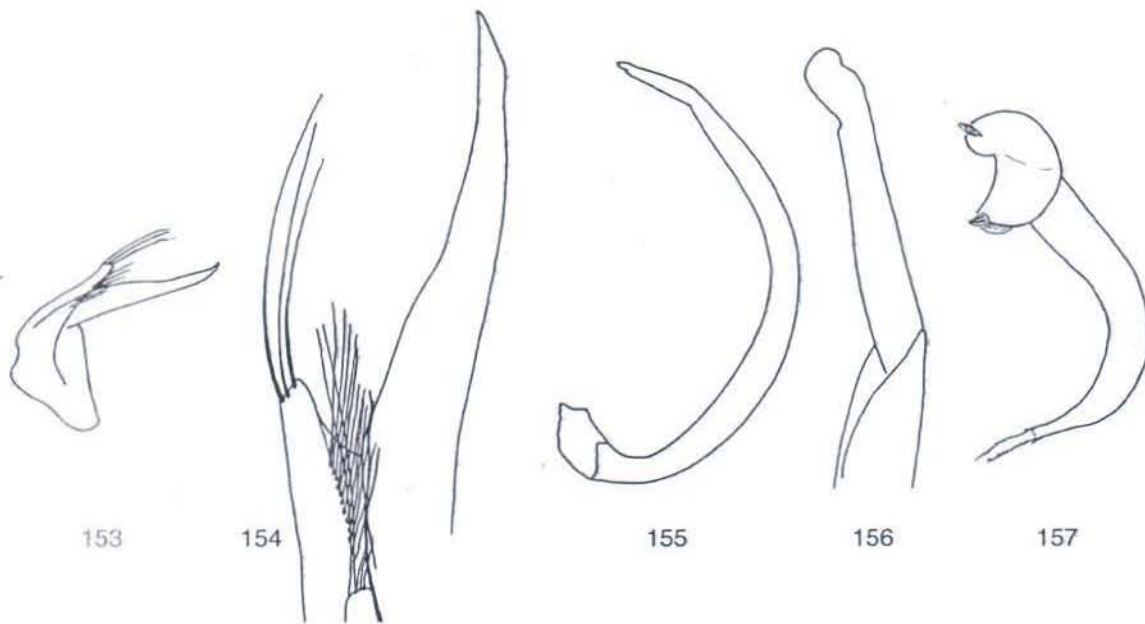
Subfamily Sticholotinae

Tribe Serangiini

Serangium buettikeri Fürsch n. sp.

Figs 153-157, Plate 14

Holotype: ♂, Saudi Arabia, Wadi Karr, 10.II.1980, W. Büttiker, NHMB. — Paratypes: 5 exs, same data as holotype; 3 exs, same data as holotype but in collection Fürsch. — Additional material: Yemen: 49 exs from: Medinat al-Shirq,



Figs 153-157: *Serangium buettikeri* Fürsch n. sp., holotype, ♂. 153: Aedeagus. 154: Median lobe and parameres. 155: Siphon. 156: Tip of siphon. 157: Spermatheca.

20.II.1991, AvH; Hamam Ali, 5.VIII.1991, 10.II.1992 (feeding on *Aleurocanthus woglumi* ex *Citrus*), AvH; Taiz, 16.II.1992, ex *Citrus*, MK; Lahej, 12.X.1993, feeding on *A. woglumi* ex *Citrus*, AvH.

Diagnosis: Rounded, convex, reddish brown, shiny. Length: 2.3-2.4 mm; width: 2.0-2.1 mm.

Description: Reddish brown, very shiny, rounded, convex. Pronotal and often even elytral side margin darker brownish red. Head puncturation fine, closely packed. Small dots between the ones on pronotum. Diameters of pronotal dots wider than of those on head. Dots on top and near the margins of pronotum smaller and scarce. Elytral dots finer and scarce. Pubescence white, scarce, short on head, longer on pronotum, dishevelled. On elytra, setae only near the shoulders and the margin. Elytral side margin slightly flattened and with a fine ledge. Eye facets round and large. Femoral line symmetrically arched, reaching nearly the hind margin of the first sternum. Male genitalia as shown in Figs 153-156; spermatheca as shown in Fig. 157.

Differential diagnosis: The new species is very similar to the closely related species *S. cinctum* (Weise, 1898), *S. montazeri* Fürsch, 1995, and *S. parcesetosum* (Sicard, 1929). From the former it differs by its finer and scarce puncturation which is dense and very distinct in *S. cinctum*. Its elytral margins near the shoulders are distinctly flattened and broad. In *S. montazeri* the base lobe is straight, not curved. In *S. parcesetosum* the siphonal tip is broad and regularly curved.

Biology: Predator of citrus blackfly, *Aleurocanthus woglumi* Ashby (Aleurodidae).

Derivatio nominis: This species is dedicated to Prof. Dr. W. Büttiker, Basle (Switzerland), who discovered it.

Remarks: KAPUR (1959: 290) reported *Serangium cinctum* from Yemen, but his material seems to be identical with *S. buettikeri* n. sp. *Serangium cinctum* is a species only known from Western Africa: holotype, ♀, Cameroon, Johan Albrechtshöhe (former German government post near Kumba), Nr. 72505 (Zoolog. Mus. Humboldt Univ. Berlin), examined by Fürsch.

Tribe Sticholotini

Pharoscymnus c-luteus (Sicard, 1907)

Figs 158-162, Plate 15

Pharus C-luteum Sicard, 1907. — Ann. Soc. Ent. France 76: 417.*Pharoscymnus c-luteum*. — KAPUR 1959; Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 291; FÜRSCH 1979; Fauna of Saudi Arabia 1: 240.

Material: Yemen: 110 exs from: Medinat al-Shirq, 4.II.1991, feeding on *Parlatoria ziziphi* ex *Citrus*, AvH; al-Mahwit, 7.VI.1991, AvH; Hamam Ali, 5.VIII.1991, feeding on *P. ziziphi* ex *Citrus*, AvH; Sana'a, 10.IX.1991, feeding on Diaspididae ex *Cupressus* sp., AvH; Sana'a, 7.XII.1991, feeding on *Duplachionaspis stanotophri* ex *Arundo donax*, AvH; Sana'a, II.1992-IX.1993, in Malaise trap, AvH; Sana'a, X.1993, ex *Prunus persica*, MK; Wadi Surdud, 29.XII.1991, feeding on Diaspididae, AvH; Sumara Pass, 22.III.1992, AvH; al-Kowd, X.1992-XI.1993, in Malaise trap, AvH; Sanhan, XII.1992, IX.1993, ex *Prunus persica*, MK; Taiz, 16.II.1993, ex *Citrus*, MK; Zinjibar, 17.III.1993, AvH; Lahej, 12.X.1993, ex *Citrus*, AvH.

Diagnosis: Body rounded, convex, covered with short hairs. Head dark brown. Pronotum dark brown, except for testaceous anterolateral angles. Elytra dark brown, each with anterior and posterior yellowish spots, connected by another dark testaceous spot, and testaceous marginal band (Fig. 158). Length: 1.0-1.3 mm. Male genitalia with basal lobe distinctly longer than parameres (Figs 159-161); spermatheca only lightly chitinous (Fig. 162).

Biology and distribution: Predator on scale insects of the family Diaspididae. In addition to Yemen (type locality), the species is also known from Spain and Saudi Arabia.

* *Pharoscymnus flexibilis* (Mulsant, 1853)

Figs 163-165

Diomus flexibilis Mulsant, 1853. — Ann. Soc. Lyon 1: 271.

Material: Yemen: 8 exs, Wadi Surdud, 29.XII.1991, feeding on Diaspididae, AvH.

Diagnosis: Body rounded, convex. Head testaceous. Pronotum darkly testaceous, with anterior margin and angles lighter, yellowish. Elytra straw-coloured, each with five brownish to black spots (Fig. 163). Length: 2.1 mm. Male genitalia: Figs 164, 165.

Biology and distribution: Predator of Diaspididae. Known from Yemen, Oman and Afghanistan.

* *Pharoscymnus numidicus* (Pic, 1900)

Figs 166-169

Pharus numidicus Pic, 1900. — Échange 16: 91.*Pharoscymnus numidicus*. — FÜRSCH 1979; Fauna of Saudi Arabia 1: 238.

Material: Yemen: 17 exs from: Wadi Surdud, 29.XII.1991, AvH; Mukalla - Seyun, 22.II.1992, MM; al-Mahwit, 17.III.1992, AvH; Sumara Pass, 22.III.1992, AvH; Wadi Hadramaut, 27.IV.1992, AvH; Zinjibar, 27.X.1992, 20.III.1993, AvH; al-Kowd, II.1993-IV.1993, in Malaise trap, AvH; Aden - Little Aden, 17.III.1992, AvH.

Diagnosis: Colour of elytra varying from light brown to completely black. Elytra with anterior and posterior spots of lighter colour (Fig. 166). Length: 1.3-3.0 mm. Male genitalia: Figs 167-169.

Biology and distribution: Predator of scale insects. Known from Egypt, Saudi Arabia, Tunisia and Algeria; introduced into Morocco for the control of *Parlatoria blanchardi*.

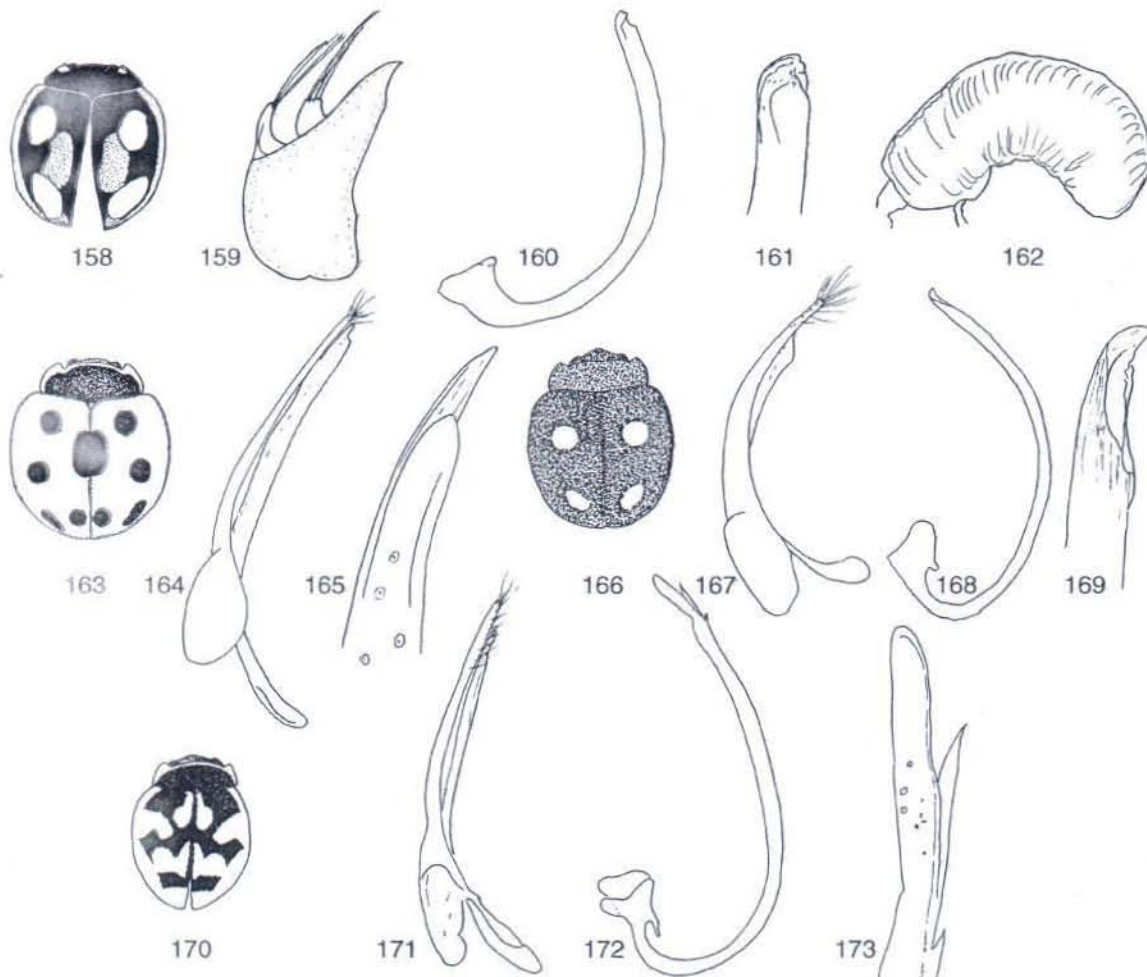
* *Pharoscymnus setulosus* (Chevrolat, 1860)

Figs 170-173

Pharus setulosus Chevrolat, 1860. — Rev. Mag. Zool. 13: 269.*Pharoscymnus setulosus*. — FÜRSCH 1979; Fauna of Saudi Arabia 1: 238.Material: Yemen: 19 exs from: Sana'a, I.1991, II.1993, in Malaise trap, AvH; Sana'a, VIII.1993, ex *Prunus persica*, MK.

Diagnosis: Body circular, convex. Head dark. Pronotum dark, with anterior margin and angles testaceous. Elytra black, each with four lighter spots of irregular and subtriangular shapes (Fig. 170). Length: 1.8-2.0 mm. Male genitalia: Figs 171-173.

Distribution: Known from the Mediterranean area and Saudi Arabia.



Figs 158-173: 158-162: *Pharoscygnus e-luteus*. 158: Dorsal view. 159: Aedeagus. 160: Siphon. 161: Tip of siphon. 162: Spermatheca. 163-165: *Pharoscygnus flexibilis*. 163: Dorsal view. 164: Aedeagus. 165: Tip of siphon. 166-169: *Pharoscygnus numidicus*. 166: Dorsal view. 167: Aedeagus. 168: Siphon. 169: Tip of siphon. 170-173: *Pharoscygnus setulosus*. 170: Dorsal view. 171: Aedeagus. 172: Siphon. 173: Tip of siphon.

Subfamily Coccinellinae
Tribe Psylloborini

Psyllobora bisoetnotata (Mulsant, 1850)

Figs 174-180, Plate 16

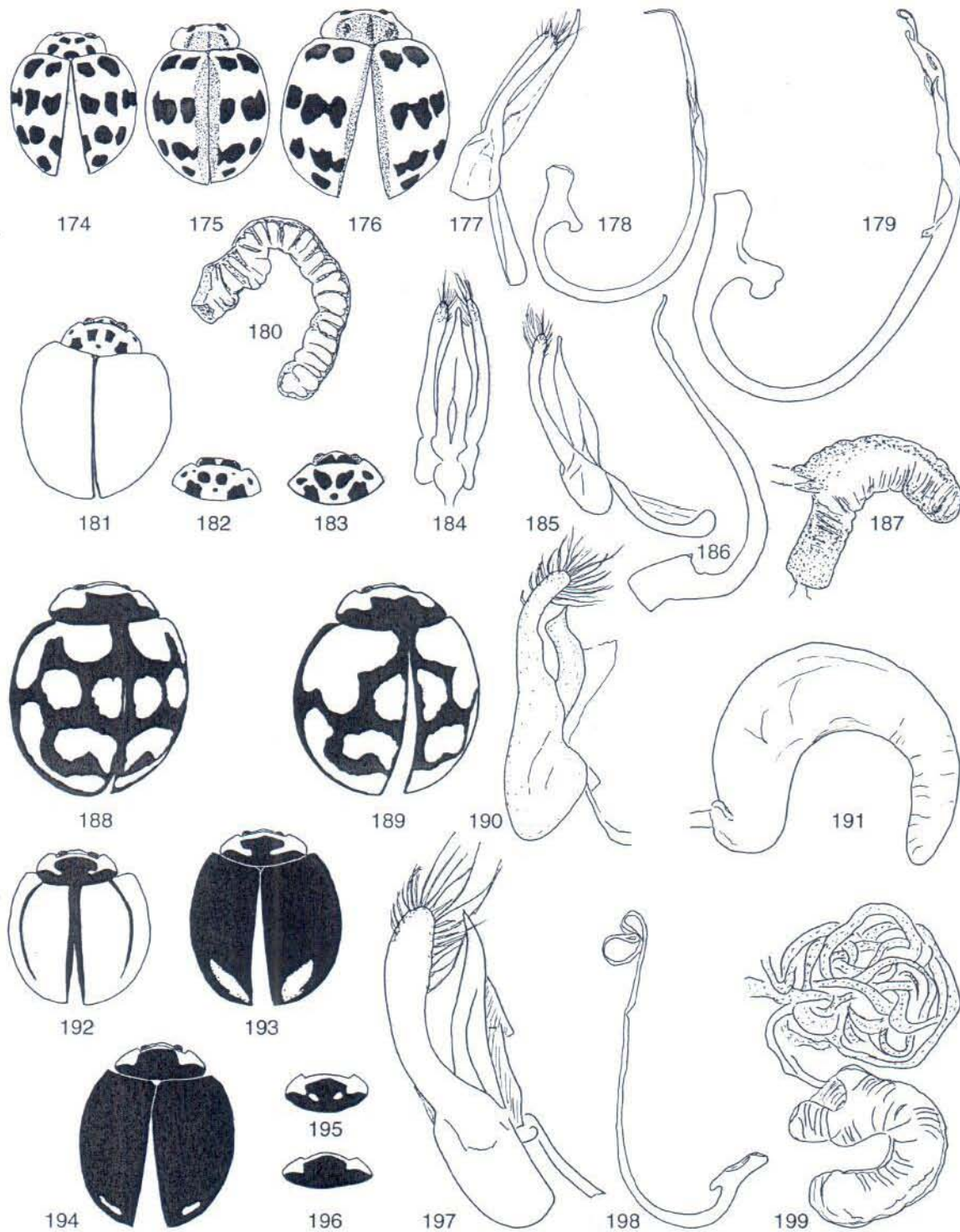
Thea bisoetnotata Mulsant, 1850. — Spec. Trim. Sécuripalpes: 204.

Thea bisoetnotata. — KAPUR 1959; Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 297.

Psyllobora bisoetnotata. — FÜRSCHE 1979; Fauna of Saudi Arabia 1: 238.

Material: 48 exs from: Yemen: al-Mahwit, 29.IV.1991, AvH; Qa al-Boun, X.1991, IV.1993, ex *Malus sylvestris* and *Prunus persica*, MK; Mabar, II.1992, VI.1993, ex *Prunus persica*, MK; Thibar, 12.III.1992, AvH; Sanhan, I.1993, VIII.1993, ex *Malus sylvestris* and *Prunus persica*, MK; Medinat al-Shirq, 10.II.1993, AvH; Taiz, 16.II.1993, ex *Citrus*, MK; Taiz – Mafrag, 15.III.1993; Mukeiras, 11.IV.1993, AvH; Dhamar, X.1993, ex *Medicago sativa*, AD. — Socotra: Muomi, 15.IV.1993, AvH.

Diagnosis: Body oval, predominantly of pale yellowish colour, shiny. Pronotum with five black spots, or with central part testaceous, including the slightly darker spots. Elytra each with



Figs 174-199: 174-180: *Psyllobora bisoconotata*. 174-176: Dorsal view. 177: Aedeagus. 178-179: Siphus at different angles. 180: Spermatheca. 181-187: *Bulaea lichatschovi albiventris*. 181: Dorsal view. 182-183: Pronotum. 184-185: Aedeagus. 186: Siphus. 187: Spermatheca. 188: *Cheilomenes lunata lunata*, dorsal view. 189-191: *Cheilomenes lunata yemenensis*. 189: Dorsal view. 190: Aedeagus. 191: Spermatheca. 192-199: *Cheilomenes propinqua vicina*. 192-194: Dorsal view. 195-196: Pronotum. 197: Aedeagus. 198: Siphus. 199: Spermatheca.

nine spots in four horizontal rows (2, 3, 3, 1) (Figs 174-176). Length: 2.8-3.2 mm. Male genitalia: Figs 177-179; spermatheca: Fig. 180.

Biology and distribution: This species feeds on fungi. Widespread in northern Africa and west Asia; including Yemen and Saudi Arabia.

Tribe Tychaspidini

Bulaea lichatschovi albiventris (Fürsch, 1971)

Figs 181-187, Plate 17

Coccinella lichatschovii Hummel, 1827. — Essais Entom. 1 (6): 43.

Bulaea lichatschovi var. *suturella* Weise, 1879. — Zeitschr. Ent. Breslau 7: 105.

Bulaea lichatschovii. — KAPUR 1959; Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 296.

Thea albiventris Fürsch, 1971. — Notulae Ent. 51: 53.

Bulaea lichatschovi albiventris. — FÜRSCHE 1979; Fauna of Saudi Arabia 1: 242.

Material: Yemen: 19 exs from: Rafil, 16.III.1993, AvH; Aden, 12.IV.1993, AvH.

Diagnosis: Pronotum yellowish, with seven black spots in two rows (Fig. 181), sometimes even with additional small black spots in the frontal row between central and lateral ones (Fig. 182), in other specimens these spots are coalescing with central median spots (Fig. 183). Elytra yellowish, without spots, with fine black margin along suture (Fig. 181). Length: 3.5-5.5 mm. Male genitalia: Figs 184-186; spermatheca: Fig. 187.

Distribution: Known from central and southern Europe, north Africa, central and west Asia, including Saudi Arabia and Yemen.

Remark: Among the material from Aden, one specimen (Plate 17) had spotted elytra and, if found on its own, would have been identified as *B. lichatschovi lichatschovi*.

Tribe Coccinellini

Cheilomenes lunata yemenensis Fürsch, 1989

Figs 189-191, Plate 18

Cheilomenes lunata Kapur, 1959. — Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 293.

Cheilomenes lunata yemenensis Fürsch, 1989. — Coccinella 2: 38.

Material: Yemen: 9 exs from: Medinat al-Shirq, 7.III.1993, AvH; Mafhaq – Khamis Bani Sa'ad, 9.III.1993, AvH; Sanhan, VII.1993, X.1993, ex *Malus sylvestris* and *Prunus persica*, MK; Dhamar, X.1993, ex *Medicago sativa*, AD.

Diagnosis: Pronotum black with reddish yellow triangle on each anterolateral angle. Elytron black with large and rounded yellow-reddish spots: a large one on the shoulder (linking the shoulder spots of subspecies *C. l. lunata* [Fig. 188]), one semicircular on the suture, forming a disc with the opposite spot (on the other elytron), one in the posterior half, almost forming a horizontal C (half moon) with its concavity towards the elytral apex and one on the posterolateral margin (Fig. 189). Length: 6-7 mm. Male genitalia: Fig. 190; spermatheca: Fig. 191.

Distribution: The subspecies is only known from Yemen.

Cheilomenes propinqua vicina (Mulsant, 1850)

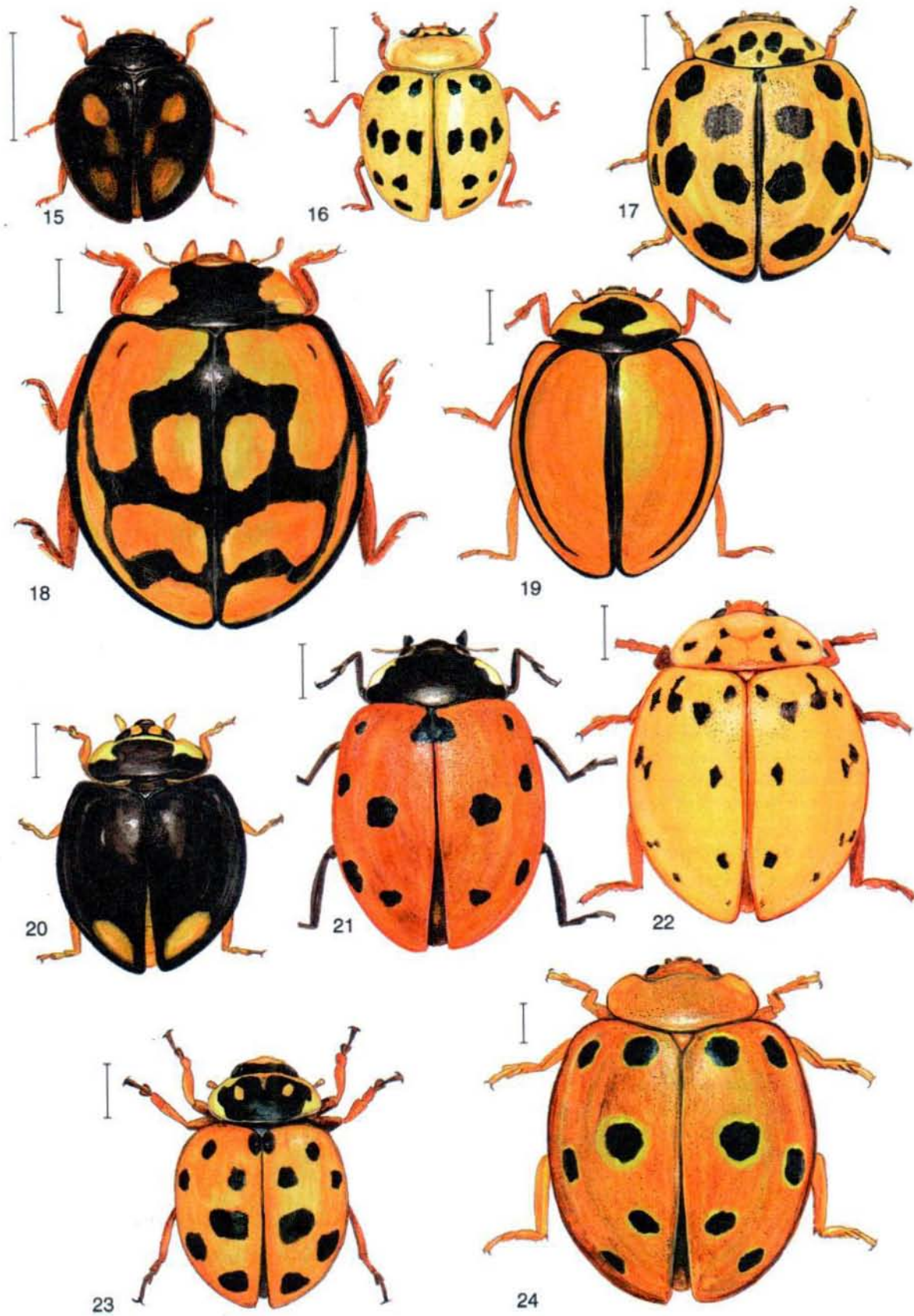
Figs 192-199, Plates 19-20

Cydonia vicina Mulsant, 1850. — Spec. Trim. Sécuripalpes: 440.

Cydonia propinqua posticalis Kapur, 1959. — Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 294.

Cheilomenes propinqua vicina. — FÜRSCHE 1979; Fauna of Saudi Arabia 1: 241-242.

Plates 15-23: 15: *Pharoscyrnus c-luteus*. 16: *Psyllobora bisocronotata*. 17: *Bulaea lichatschovi albiventris*. 18: *Cheilomenes lunata yemenensis*. 19-20: *Cheilomenes propinqua vicina*. 21: *Coccinella undecimpunctata aegyptiaca*. 22: *Harmonia pardalina*. 23: *Hippodamia (Adonia) variegata*. 24: *Henosepilachna elaterii orientalis*. (Scales bars = 1 mm).



Material: Yemen: 79 exs from: Medinat al-Shirq, 20.II.1991, AvH; Sana'a, II.1991, AvH; Hajjah, 12.III.1991, AvH; al-Mahwit, 7.VI.1991, AvH; Qa Jahran, 17.IX.1991, AvH; Bait al-Faquih, 15.II.1992, MM; Shaher, 20.II.1992, MM; Seyun, 23.II.1992, MM; Seyun, 28-30.III.1992, AvH; Dhamar, VIII.1992, X.1993, ex *Medicago sativa*, AD; Wadi Bana, IX.1992, ex *Sorghum vulgare*, AD; al-Kowd, II.1993, in Malaise trap, AvH; Jebel an-Nabi Shuaib, 17.III.1993, AvH; Zinjibar, 20.III.1993, AvH; Rehab, 8.IV.1993, MK; Aden - Little Aden, 12.IV.1993, AvH; Mabar, IV.1993, V.1993, ex *Prunus persica*, MK; Qa al-Boun, IV.1993, ex *Malus sylvestris*, MK; Lahej, 12.X.1993, ex *Citrus*, AvH.

Diagnosis: Pronotum black with yellow anterior angles, variable (Figs 192, 195-196). Elytra either yellow or red, mostly with one black longitudinal line (Fig. 192), which is sometimes very conspicuous, then with black band along suture; or elytra entirely black, sometimes with dark yellow longitudinal spot on hind elytral angle (Figs 193-194). Length: 3.5-5.5 mm. Male genitalia: Figs 197-198; spermatheca: Fig. 199.

Biology and distribution: Predator of aphids. Widespread in Africa, Saudi Arabia and Yemen.

Coccinella undecimpunctata aegyptiaca Reiche, 1861

Figs 200-211, Plate 21

Coccinella undecimpunctata aegyptiaca Reiche, 1861. — Ann. Soc. Ent. France (1861): 212.

Coccinella undecimpunctata. — KAPUR, 1959; Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 295.

Coccinella undecimpunctata aegyptiaca. — FÜRSCH 1979; Fauna of Saudi Arabia 1: 241.

Material: Yemen: 34 exs from: Sana'a, XII.1990, IX.1991, II.1992, 8.XII.1992, feeding on *Capitophorus eleagni* ex *Cynara scolymus* (artichoke), AvH; Qa al-Boun, I-II.1991, ex *Triticum* (wheat), MM; Mabar, 10.IX.1991, IV.1992, ex *Malus sylvestris*, MK; Mabar, VII.1992, ex *Medicago sativa*, AD; Sanhan, XII.1992-VIII.1993, ex *Malus sylvestris* and *Prunus persica*, MK; Dhamar, X.1993, ex *Medicago sativa*, AD.

Diagnosis: Body oval. Pronotum black with large subtrapezoidal or triangular white spot on each anterolateral angle, pronotal side margins almost white. Elytra orange to testaceous, with up to 11 black spots (Fig. 200), but very variable (Figs 201-206). Length: 5.0-6.5 mm. Male genitalia: Figs 207-210; spermatheca: Fig. 211.

Biology and distribution: Predator of aphids. Widespread, known from Europe, north Africa and Asia. Introduced into the U.S.A. and New Zealand for the biological control of aphids.

Harmonia pardalina (Gerstäcker, 1871)

Figs 212-213, Plate 22

Cheilomenes pardalinus Gerstäcker, 1871. — Arch. Naturgesch.: 346.

Harmonia pardalina. — FÜRSCH 1992; Faun. Abh. Mus. Tierk. Dresden 18: 186.

Material: Yemen: 1 ♀, al-Mahwit, 7.VI.1991, AvH.

Diagnosis: Pronotum testaceous, with six dots. Elytra yellow with small to minute black spots in five horizontal, irregular rows (Fig. 212). Length: 5.7 mm. Spermatheca: Fig. 213.

Distribution: Known from west and east Africa and from Yemen.

Hippodamia (Adonia) variegata (Goeze, 1777)

Figs 214-222, Plate 23

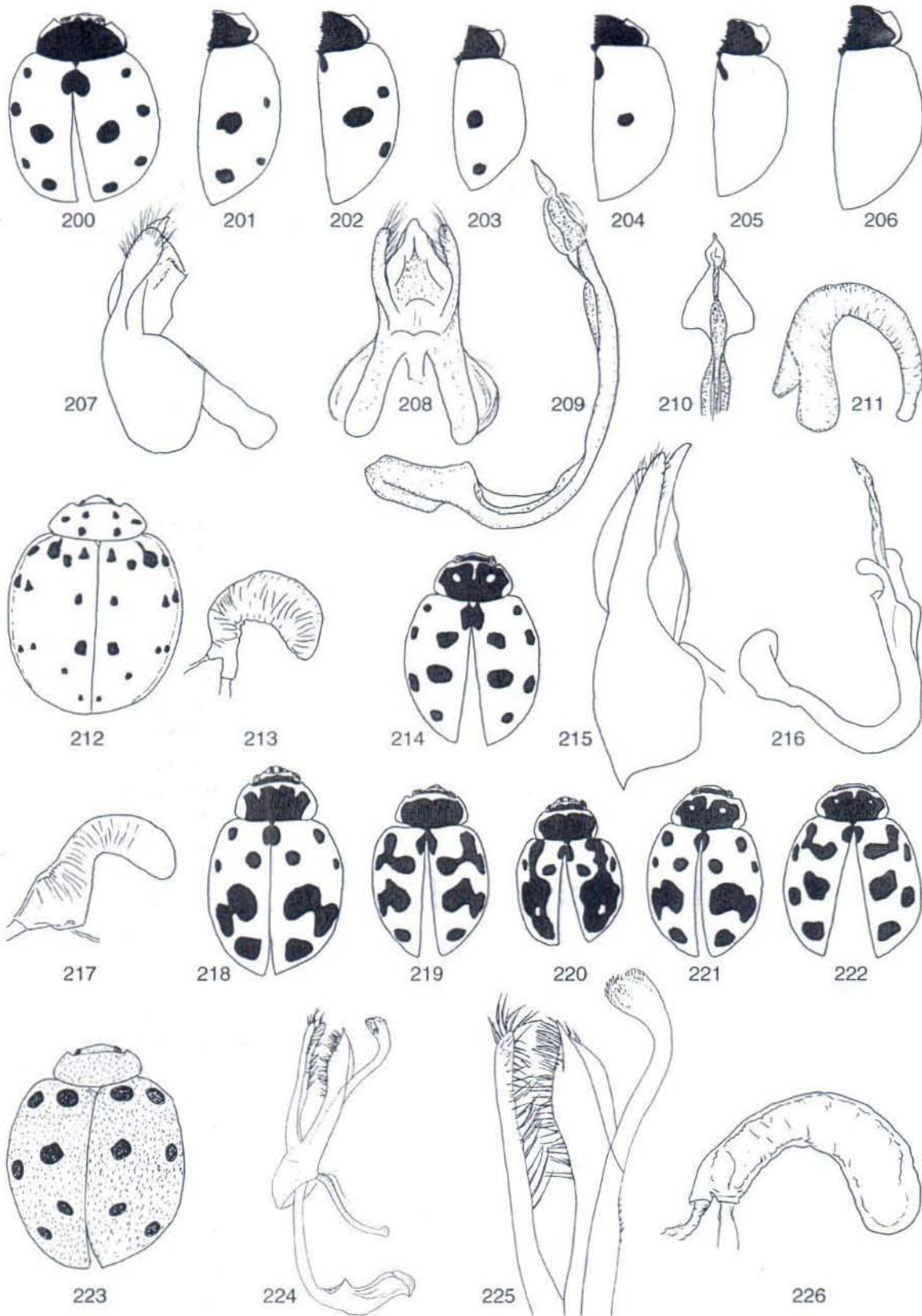
Coccinella variegata Goeze, 1777. — Ent. Beytr. 1: 247.

Hippodamia variegata. — KAPUR 1959; Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 297.

Hippodamia (Adonia) variegata. — Lablokoff-Khuzorian 1982; Les Coccinelles: 326.

Material: Yemen: 243 exs from: Sana'a, XII.1990-II.1993, IX.1992, feeding on *Capitophorus eleagni* ex *Cynara scolymus*, AvH; Qa al-Boun, II.1991, MM; al-Mahwit, 7.VI.1991, AvH; Sadah, 13.VIII.1991, AvH; Qa Jahran, 17.IX.1991,

Figs 200-226: 200-211: *Coccinella undecimpunctata aegyptiaca*. 200: Dorsal view. 201-206: Elytral variations. 207-208: Aedeagus. 209: Siphon. 210: Tip of siphon. 211: Spermatheca. 212-213: *Harmonia pardalina*. 212: Dorsal view. 213: Spermatheca. 214-222: *Hippodamia (Adonia) variegata*. 214: Dorsal view. 215: Aedeagus. 216: Siphon. 217: Spermatheca. 218-222: Variations in dorsal pigmentation. 223-226: *Henosepilachna elaterii orientalis*. 223: Dorsal view. 224: Aedeagus and siphon. 225: Median lobe, parameres and tip of siphon. 226: Spermatheca.



AvH; Seyun, 23.II.1992, MM; Sanhan, III.1992-IX.1993, ex *Malus sylvestris* and *Prunus persica*, MK; Qa al-Boun, IV.1992-IV.1993, ex *Malus sylvestris* and *Prunus persica*, MK; Wadi Hadramaut, 27.IV.1992, AvH; Mabar, V.1992-VII.1993, ex *Malus sylvestris* and *Prunus persica*, MK; Mabar, VIII.1992, ex *Medicago sativa*, AD; Jebel an-Nabi Shuaib, 16.X.1992, 17.III.1993, AvH; Mukeiras, 11.IV.1993, AvH; Aden - Little Aden, 12.IV.1993, AvH.

Diagnosis: Body oval (Fig. 214). Pronotum yellowish white with a large black spot on its base, quite variable, but mostly forming four "fingers" with a knob on their tip (Fig. 218). Elytra testaceous, with 13 or fewer spots of variable shape (Figs 214, 218-222). Length: 3.0-6.4 mm. Male genitalia: Figs 215, 216; spermatheca: Fig. 217.

Biology and distribution: Predator of aphids. Known from the Palaearctic region, south and central Africa, Yemen.

Subfamily Epilachninae

Tribe Epilachnini

Henosepilachna elaterii orientalis (Zimmermann, 1936)

Figs 223-226, Plate 24

Epilachna elaterii orientalis Zimmermann, 1936. — Zeitschr. F. Ind. Abst. Vererb. 71: 527.

Epilachna chrysomelina (Fabricius). — KAPUR 1959; Brit. Mus. Nat. Hist. Exp. SW Arab. 1: 277.

Henosepilachna elaterii orientalis. — FÜRSCH 1979; Fauna of Saudi Arabia 1: 238.

Material: Yemen: 7 exs from: Bir Ali, 31.III.1992, AvH; al-Mahwit, 29.IV.1991, AvH; Mafhaq - Khamis Bani Sa'ad, 9.III.1993, AvH; Aden, 12.IV.1993, AvH.

Diagnosis: Body yellowish testaceous, dorsal surface densely pubescent. Elytra each with six rounded spots, always remote from suture (Fig. 223). Length: 6-10 mm. Male genitalia: Figs 224, 225; spermatheca: Fig. 226.

Biology and distribution: A phytophagous species, which can become a serious pest on Cucurbitaceae. Known from the north-eastern part of Africa, west and central Asia; recorded from Yemen and Saudi Arabia.

List of all recorded Yemeni species

Subfamily Coccidulinae

Tribe Lithophilini

Lithophilus arabicus (Kapur, 1948)

Lithophilus minutus Pic, 1903

Lithophilus tenebrosus Weise, 1910

Lithophilus yemenensis (Kapur, 1948)

Tribe Coccidulini

Rhyzobius lophantae (Blaisdell, 1892)

Subfamily Ortaliinae

Tribe Noviini

Rodolia argodi Sicard, 1909

Rodolia cardinalis Mulsant, 1850

Subfamily Scymninae

Tribe Stethorini

Stethorus gilvifrons Mulsant, 1850

Stethorus pauperculus Weise, 1895

Tribe Scymnini

Scymnus (Scymnus) flavicollis Redtenbacher, 1843

Scymnus (Scymnus) gonatoides Kusnetzov & Ren, 1992

Scymnus (Scymnus) interruptus (Goeze, 1777)

Scymnus (Scymnus) levaillanti Mulsant, 1850

Scymnus (Scymnus) scapuliferus Mulsant, 1850

Scymnus (Scymnus) viduus Weise, 1897

Scymnus (Pullus) auritus (Thunberg, 1795)

Scymnus (Pullus) belophallus Capra, 1924

Scymnus (Pullus) nigropictus Wollaston, 1867

Scymnus (Pullus) rubicundus Kapur, 1959

Scymnus (Pullus) subvillosus (Goeze, 1777)

Scymnus (Pullus) syriacus (Marseul, 1868)

Scymnus (Pullus) yemenensis Kapur, 1959

Scymnus (Mimopullus) araraticus Iablokoff-Khnzorian, 1996

Scymnus (Mimopullus) flagellisiphonatus (Füirsch, 1969)

Scymnus (Mimopullus) mediterraneus Iablokoff-Khnzorian, 1972

Nephus (Nephus) crucifer Fleischer, 1900

Nephus (Geminosipho) arcuatus Kapur, 1959

Nephus (Geminosipho) fenestratus (Sahlberg, 1913)

Nephus (Geminosipho) phenacoccephagus Föirsch, 1987

Nephus (Geminosipho) sudanicus Weise, 1925

Nephus (Bipunctatus) nigricans Weise, 1879

Nephus (Bipunctatus) includens (Kirsch, 1870)

Nephus (Bipunctatus) peyerimhoffi Sicard, 1923

Nephus (Bipunctatus) witmeri Föirsch, 1979

- Nephus (Sidis) hiekei riyadhensis* Fürsch, 1979
Nephus (Sidis) macilentus Stenius, 1952
Diomus anemicus Fürsch, 1960
Diomus rubidus adenensis (Kapur, 1959)
- Tribe Hyperaspidini
Hyperaspis polita Weise, 1885
Hyperaspis vinciguerrae Capra, 1929
- Subfamily Chilacorinae
 Tribe Chilacorini
Chilocorus bipustulatus (Linnaeus, 1758)
Chilocorus distigma Klug, 1835
Chilocorus nigritus (Fabricius, 1798)
Exochomus nigripennis Erichson, 1843
Exochomus nigromaculatus (Goeze, 1777)
Exochomus pubescens Küster, 1848
Exochomus pulchellus Gerstäcker, 1871
Exochomus sjoestedti Weise, 1910
Exochomus uraniki Fürsch, 1989
Brumoides adenensis Fürsch, 1987
Brumoides nigrifrons (Gerstäcker, 1871)
Brumoides nigrosuturalis (Kapur, 1959)
- Subfamily Sticholotidinae
 Tribe Serangiini
Serangium buettikeri Fürsch n. sp.
 Tribe Sticholotidini
Pharoscymnus arabicus Fürsch, 1979
- Pharoscymnus c-luteus* (Sicard, 1907)
Pharoscymnus flexibilis (Mulsant, 1853)
Pharoscymnus numidicus Pic, 1900
Pharoscymnus setulosus (Chevrolat, 1860)
Pharoscymnus tristiculus Sicard, 1907
- Subfamily Coccinellinae
 Tribe Psylloborini
Psyllobora bisoctonotata (Mulsant, 1850)
- Tribe Tytthaspidini
Bulaea lichatschovi albiventris (Fürsch, 1971)
- Tribe Coccinellini
Adalia decempunctata (Linnaeus, 1758)
Cheilomenes lunata yemenensis Fürsch, 1989
Cheilomenes propinqua vicina (Mulsant, 1850)
Coccinella septempunctata Linnaeus, 1758
Coccinella undecimpunctata aegyptiaca Reiche, 1861
Harmonia pardalina (Gerstäcker, 1871)
Hippodamia (Adonia) variegata (Goeze, 1777)
Oenopia oncina (Olivier, 1808)
Propylea quatuordecimpunctata (Linnaeus, 1758)
Xanthadalia effusa rufescens (Mulsant, 1850)
- Subfamily Epilachninae
 Tribe Epilachnini
Chnootriba similis (Thunberg, 1781)
Henosepilachna elaterii orientalis (Zimmermann, 1936)

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