

New Ladybirds from Southern Africa (Coleoptera, Coccinellidae)

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With 12 figures

Abstract

Two new coccinellid species from Southern Africa are described, *Hyperaspis kochi* sp. n. (type locality: South Africa: Northern Province: Lekgalameetse Nature Reserve) and *Scotoscymnus punctatissimus* sp. n. (type locality: South Africa: KwaZulu-Natal: Sodwana Bay National Park), and compared with the closely related species. A key to the South African *Hyperaspis* species is provided. Mainly body outlines and the morphology of genitalia are used as distinctive characters.

Key words: Insecta, Coleoptera, Coccinellidae, Africa, new species.

Introduction

The first results of the entomological Africa expeditions of the Museum für Naturkunde der Humboldt-Universität Berlin (MNHUB) from 1992 to 1995 on Coccinellidae and on Coleoptera in general were published as a basis for the research project “biodiversity of insects in the Afrotropical Region” in 1995 (Fürsch 1995, Uhlig & Jaeger 1995). Additional coccinellid material of the MNHUB expeditions to Southern Africa from the years 1995 to 1997 became available and was passed to me for study. The new species are introduced here. The collected material provides, in several cases, some insight into the relationships of rare species, which for lack of sufficient material were not clear before now. Characters are defined by traditional morphological methods, especially by the comparison of male genitalia.

Material and Methods

The body outlines and genitalia were drawn with the help of a drawing apparatus. The examined material is preserved in the Museum für Naturkunde der Humboldt Universität Berlin (MNHUB), the Zoologische Staatssammlung München/Collection Fürsch (ZSM/CF), the Transvaal Museum Pretoria (TMP), and the Plant Protection Research Institute, Pretoria (SANC).

Results

Hyperaspidinae

Hyperaspis kochi sp. n.

Figs 1–6

Description: Oval, elytra nearly parallel sided, black with a yellow patch at the back of each elytron. Length 2.5–3.1 mm, width 1.6–2.2 mm.

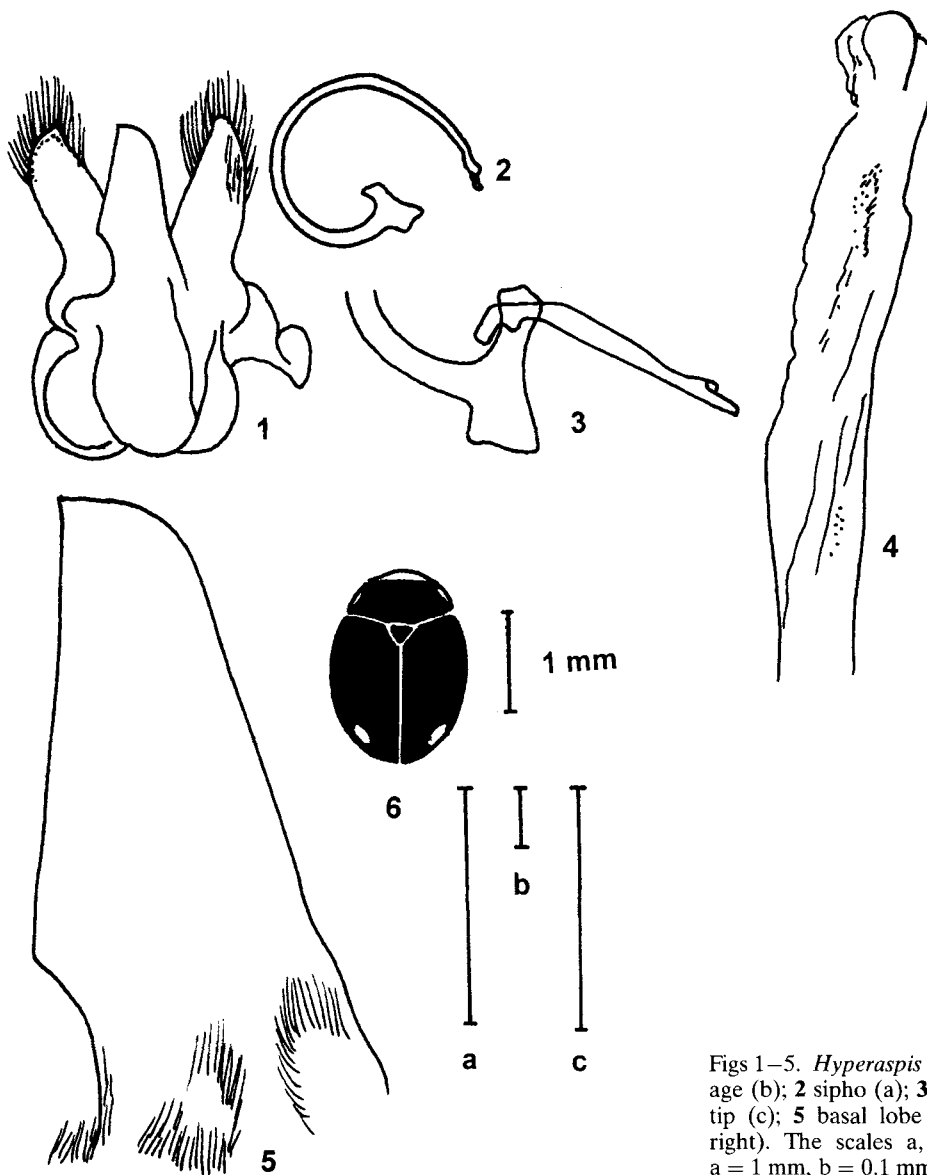
Head yellow in males, black in females. Surface shiny, finely reticulated and densely punctate. Punctures as big as eye facets, about 30 on its frons between the eyes (not in a line but arranged irregularly).

Pronotum black with narrow, yellowish side margin, inwards turning into reddish. Only a slim outer margin remains black. In both sexes, the front margin is black. Punctuation and reticulation are the same as on head, but on the latter may be variable, so that the surface looks matt.

Scutellum a black, equilateral triangle, surface as on pronotum.

Elytra black with a reddish-yellow spot on each elytron near its tip, distinctly separated from the side margin (in the holotype) or touching the slim, black side margin (in some paratypes). Reticulation finer, punctuation much coarser than on pronotum. Only one male paratype has a fine yellow spot on its shoulder. In the other samples the shoulders are entirely black without any yellow trace.

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Figs 1–5. *Hyperaspis kochi* sp. n. ♂ Paratype. – 1 aedeage (b); 2 siphon (a); 3 capsule and trapes (b); 4 siphonal tip (c); 5 basal lobe (c); 6 habitus (with scale to the right). The scales a, b, c, are showing the real size: a = 1 mm, b = 0.1 mm, c = 0.1 mm.

Underside black, mouthparts, antennae, legs and side parts of abdomen brown. Aedeage fig. 1–5.

Material examined: Holotype male: Südafrika: Transvaal, Lekgalameetse Nat. Res. 24°05'S/30°15'E, 21. 07. 1995 leg. F. Koch/genitalia mounted on rectangular cardboard label in water soluble mixture/ (SANC).

Paratypes: Südafrika: Transvaal, Lekgalameetse Nat. Res. 24°05'S/30°15'E, 21. 07. 1995 leg. F. Koch (13 males, 12 females MNHUB, 6 ex. from them ZSM/CF, 2 TMP).

Further material: Südafrika: KwaZulu-Natal: N'dumu Game Res. 26°56'S/32°19'E, 03. 02. 1995, leg. F. Koch (3 females MNHUB). Südafrika, KwaZulu-Natal: Mkuze Game Res. 27°36'S/32°13'E, 29. 11. 1995, leg. F. Koch (1 male ZSM/CF). Südafrika, KwaZulu-Natal: Hluhluwe Game

Res. 28°02'S/32°05'E, 10. 11. 1995, leg. F. Koch (1 female MNHUB). Südafrika, KwaZulu-Natal: Hluhluwe Game Res. 28°02'S/32°05'E, 10. 02. 1995, leg. F. Koch (1 male MNHUB, 1 male ZSM/CF). Südafrika: KwaZulu-Natal: St. Lucia Park, Charter's creek 28°12'S/32°25'E, 02. 10. 1995, leg. F. Koch (1 female MNHUB). Südafrika: Transvaal, Blyderivierspoort Nat. Res. 24°39'S/30°50'E, 13. 12. 1995, leg. F. Koch (1 female MNHUB, 1 female ZSM/CF). Botswana: Shakawe Camp, 22.–24. 02. 1998, leg. Göllner (1 male MNHUB). Botswana: Okavango Delta, Moremi Wildlife Reserve, Third bridge Campsite, bank sievings: reed + grass 19°14'22"S/23°21'24"E, 10. 03. 1993 leg. M. Uhlig (1 female MNHUB).

Remarks: The new species is characterised by its very narrow yellow-reddish stripe on the pronotal side margins and the missing yellow line

along the front margin of the pronotum in males, just as there is no yellow marking on male shoulders. The following species are very similar: *H. egregia* Mader, 1955 has a yellow strip on the male shoulders. *H. capeneri* Mader, 1955 and *H. despecta* Mader, 1955 are more rounded and the yellow spots on the elytral tips are bigger. *H. newcombi* Casey, 1899 is likewise more rounded. The yellow side margin on the pronotum is broader and the punctuation on the pronotum and the elytra is finer. Its basal lobe is more strongly bent. *H. sericea* Fürsch, 1972 has an extremely fine reticulated pronotum and elytra,

their surface is matt. *H. silfverbergi* Fürsch, 1972 is very similar to it, but its body outline is more rounded and the pronotal side margin is yellow and broader. *H. kochi* sp. n. is, compared with *H. silfverbergi*, more cylindrical. Very similar, too, is *H. capriviensis* Fürsch, 1995. Its basal lobe is curved, whereas that of *H. kochi* is straightway tapered.

Etymology: This species is dedicated to one of its collectors, Dr. Frank Koch, curator of Hymenoptera in MNHUB.

Key to the South African *Hyperaspis* species

The recognized number of *Hyperaspis* species in Southern Africa has enlarged to such an extent that a key is necessary at this stage.

1	Only one bright spot on each Elytron	2
1*	More than one spot on each elytron, or elytra entirely black or with yellow elytral border	20
2	The bright spot is near the tip of each elytron (humeral spots are to be ignored)	3
2*	The bright spot is in the elytral centre	16
3	Big species, 4.5 mm long, 3.1 mm wide. Black pronotum with yellowish-red anterior and lateral border	<i>H. popei</i> Fürsch, 1972
3*	Shorter than 4.5 mm	4
4	Body outline broadly rounded	5
4*	Body outline elongate, oblong	8
5	Pronotum mostly black, in males with anterior and lateral borders yellow	6
5*	Only lateral borders yellow	<i>H. newcombi</i> Casey, 1899
6	Males with yellow humeral spot	<i>H. delicatula</i> Mulsant, 1850
6*	Without humeral spot	7
7	Head of males brownish. Basal lobe in ventral view more or less parallel-sided, its tip rounded with a point on the right front corner, single spotted form of	<i>H. felixi</i> Mulsant, 1850
7*	Head of males bright yellow. Basal lobe in ventral view with inconspicuous hook on its right margin, its front with pointed right edge	<i>H. senegalensis hottentotta</i> Mulsant, 1850
8	Pronotum mostly black, lateral and anterior borders yellow	9
8*	Pronotum mostly black, only with yellow lateral borders	11
9	Elytra in males without humeral spot; rare form of	<i>H. striata</i> Fürsch, 1972
9*	Elytra in males with small humeral spot	10
10	Males with small, short humeral spot. Apical spot reddish, longitudinally	<i>H. congoana</i> Mader, 1955
10*	Both sexes with yellow humeral line next to the black side margin, extended to 1/3 of the elytral length. Pronotal front margin black or yellow	<i>H. humerosignata</i> Fürsch, 1995
11	With yellow humeral line. Pronotal front margin black or yellow.	<i>H. humerosignata</i> Fürsch, 1995
11*	Males without yellow humeral spot	12
12	Narrow cylindrical form, elytra parallel sided. Length 2.9 mm, width 2 mm	<i>H. procera</i> Fürsch, 1972
12*	Oblong oval or rounded oval but not parallel-sided	13
13	Elytra extremely finely reticulated, therefore silkily matt. Basal lobe in ventral view about the length of the paramera	14
13*	Elytra not silkily matt, basal lobe as long as the paramera	<i>H. sericea</i> Fürsch, 1972
14	Rounded oval	15
14*	Oblong oval. Pronotum with narrow yellow side margin which does not reach pronotal base. 2.50–3.05 mm long, 1.6–2.1 mm wide	<i>H. capriviensis</i> Fürsch, 1995
15	Yellowish pronotal side margin reaches pronotum base	<i>H. kochi</i> sp. n.
15*	Pronotum with broad, yellow lateral area. Small species 1.8–2.5 mm long, 1.2–1.8 mm wide	<i>H. capeneri</i> Mader, 1955
16	Pronotum mostly black, front margin yellow, side border reddish	<i>H. discors</i> Mader, 1955
16*	Pronotal front margin black	17
17	Basal lobe in ventral view with conspicuous tip (or tooth) near the base of its right side	18
17*	Without tooth on the right side of the basal lobe	<i>H. multicolor</i> Sicard, 1912
18	Central spot on each elytron extended. Pronotum with broad yellow or reddish lateral area	19
18*	Central spot on each elytron small. Yellow pronotal lateral margin narrow and inconspicuous	<i>H. alia</i> Mader, 1955
19	Basal lobe in ventral view tapered towards its top	<i>H. discomaculata</i> Fürsch, 1995
19*	Top of basal lobe obtuse to quadrangular	<i>H. deliciola</i> Fürsch, 1972
20	Elytra entirely black	<i>H. neeseri</i> Fürsch, 1992
20*	Elytra with spots	21
21	Elytra black with two spots, one behind the other	22
21*	Elytra with yellow border and/or with rounded spots	25
22	Pronotum mostly black, anterior and lateral borders yellowish.	<i>H. felixi</i> Mulsant, 1850

22*	Only lateral borders of pronotum yellowish	23
23	Elytral spots small and inconspicuous	<i>H. alia</i> Mader, 1955
23*	Elytral spots extended and conspicuous	24
24	Basal lobe in ventral view broad conical with conspicuous broad tooth in the middle of its right side	<i>H. quadrilla</i> Mulsant, 1850
24*	Basal lobe in ventral view nearly parallel-sided with inconspicuous tooth near the base of its right side	<i>H. natalensis</i> Mader, 1955
25	Elytra with yellow border and rounded spots	26
25*	Elytra only with yellow border	<i>H. striata</i> Fürsch, 1972
26	Pronotum mostly yellow, black only on its base in front of the Scutellum. Elytra each with yellow border and big longitudinal spot from base up to centre	<i>H. namibiensis</i> Fürsch, 1995
26*	Pronotum mostly black	27
27	Pronotal anterior margin black. Elytral base black, yellow central spot rounded. Second spot near apex. Yellow side margin not connected with spots	<i>H. sjoestedti australis</i> Fürsch, 1972
27*	Pronotal anterior margin yellow. Elytral base with yellow spot, connected with lateral yellow margin. Elytral centre spot rounded, apical spot crossways	<i>H. marmottani</i> (Fairmaire, 1868)

Sticholotidinae

Scotoscymnus punctatissimus sp. n.

Figs 7–12

Description: Dark brown. Length 2.00 mm, width 1.45 mm

Head brownish black, pubescence distinctly long and white, only $\frac{3}{4}$ as wide as the pronotum. Surface micro-reticulated. Eye-facets rather big.

Pronotum brownish black, densely and strongly punctate, especially on the side margins. Punctures little bigger than eye facets and separated by their diameter. Setae white, as long as on head, but less dense and dishevelled. Front margin shows indentations behind the eyes. Side margin distinctly bordered. Base concave on both sides of the scutellum.

Elytra brownish-black, regularly rounded on their end (without any tip). Side margins as distinctly bordered as on pronotum. Surface shiny, punctures slightly coarser than on pronotum, separated by their diameter. Humeral callus pointed, but not distinct. Pubescence white or golden, little longer than on pronotum, arranged backwards (even near the elytral suture). Alae present.

Underside: Brownish black. Prosternum with intercoxal carina. Mesosternum very short, metasternum of the holotype shows scanty and indistinct punctures, in contrast to the paratype, which is densely and deeply punctate. Femoral line of the first abdominal sternite absent in the holotype, in contrast to the very conspicuous one in the paratype (Fig. 9). Epipleurae horizontal and brownish-black. Spermatheca Fig. 8, abdomen Fig. 9.

Material examined: Holotype female: Südafrika: KwaZulu-Natal: Sodwana Bay N. P. 27°27'S/32°41'E. 20. 11. 1995 leg. F. Koch/Genita-

lia mounted on rectangular cardboard label in water soluble mixture/(SANC).

Paratype: Südafrika: KwaZulu-Natal: Sodwana Bay N. P. 27°27'S/32°41'E. 20. 11. 1995 leg. F. Koch/Genitalia, hind leg and abdomen mounted on microscopic slide No 3402/3 in Hoyer's mixture/(1 female MNHUB). KwaZulu-Natal: Umzinto Vernon Crookes N.R. 26.–27. 11. 2001 leg. P. SCHÜLE (1 Ex. ZSM/CF). Natal Umtentweni River, Juli 1952 leg. A. CAPENER (1 male ZSM).

Further material: S.-Afr.: De Rust (Val) Karroo 29. 11. 1981 leg. J. S. KLAPPERICH (2 Ex. ZSM/CF).

Remarks: The new species is distinguished from all the other African species (Fürsch, 1985 and 1997) by its body size and the double concave pronotal base.

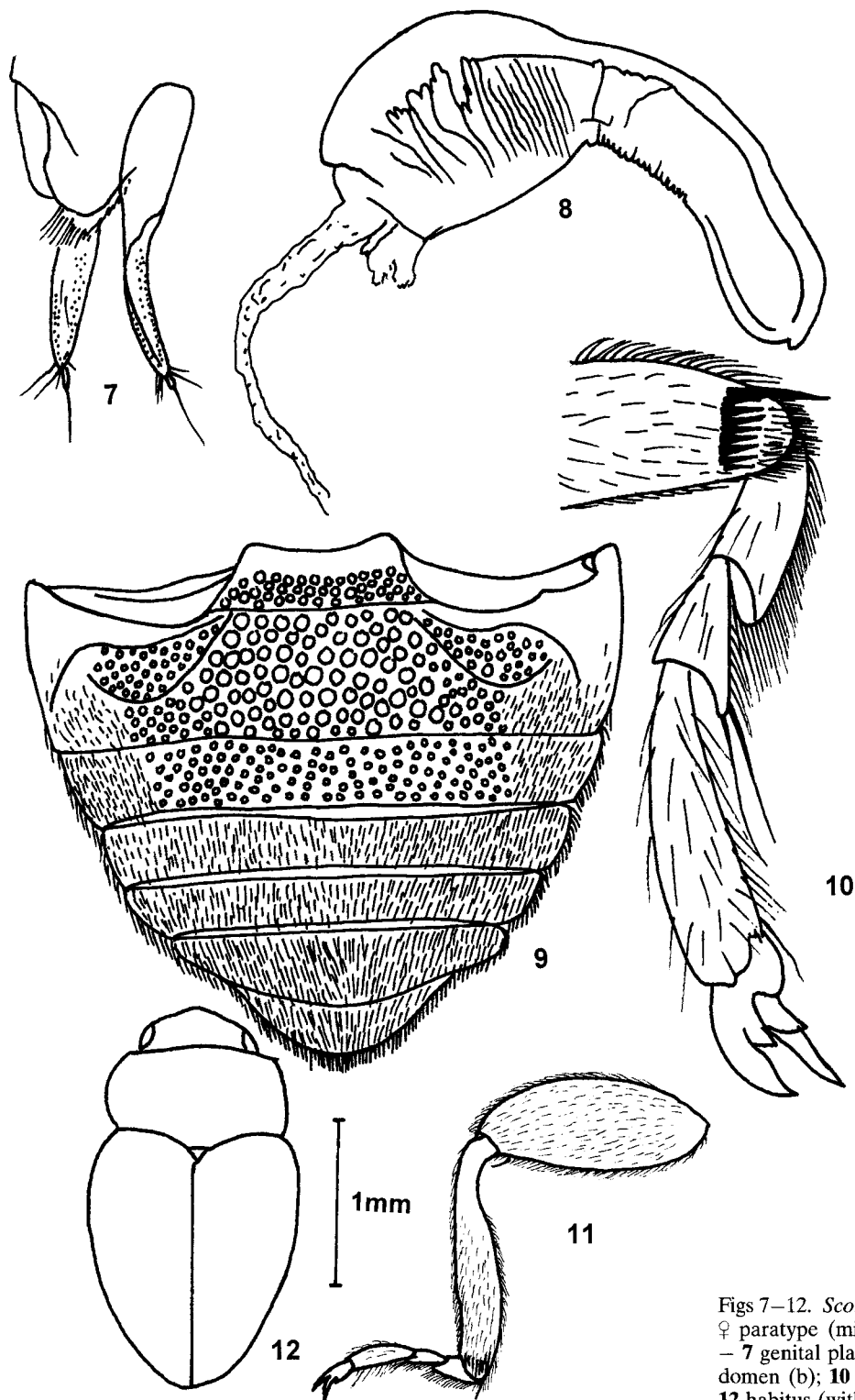
Etymology: Punctatissimus: Latin = deeply and densely dotted.

Zusammenfassung

Ergänzend zu den Ergebnissen der entomologischen Südafrika-Expedition des Museums für Naturkunde Berlin von 1992 bis 1995, wurden mir die Coccinelliden weiterer Sammelergebnisse der Jahre 1995–1998 vorgelegt. Zwei neue Arten sind hier beschrieben: *Hyperaspis kochi* sp. n. und *Scotoscymnus punctatissimus* sp. n. Sie werden mit ähnlichen Arten verglichen, ihre Körperform und die Genitalorgane sind abgebildet. Eine Bestimmungstabelle der *Hyperaspis*-Arten des südlichen Afrika ist beigefügt.

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Figs 7–12. *Scotoseymnus punctatissimus* sp. n. ♀ paratype (microscopic slide No 3402, 3403). – 7 genital plates (b); 8 spermatheca (c); 9 abdomen (b); 10 hind tarsus (c); 11 hind leg (b); 12 habitus (with scale to the right).

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