

***Bobekoides* gen. nov. (Hymenoptera: Braconidae: Alysiinae) from South Africa**

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Achterberg, C. van. *Bobekoides* gen. nov. (Hymenoptera: Braconidae: Alysiinae) from South Africa. Zool. Med. Leiden 72 (9), 11.xii.1998: 105-111, figs 1-16.— ISSN 0024-0672.

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Key words: Hymenoptera; Braconidae; Alysiinae; Alysiini; *Bobekoides*; Afrotropical; South Africa; key. A new genus of the subfamily Alysiinae (Braconidae) is reported from South Africa (*Bobekoides* gen. nov.; type species: *Bobekoides fulvus* spec. nov.), illustrated, and described. A key to the species is added. The new genus is closely related to the East Palaearctic genus *Hylcalosia* Fischer, 1967.

Introduction

Among an extensive collection of Braconidae from South Africa mainly collected by Dr R. Danielsson (Lund), I found two species of an undescribed genus of Alysiinae: Alysiini (Braconidae). In Fischer's (1975) key to his group C of the genera of Alysiini it runs to the East Palaearctic genus *Hylcalosia* Fischer, 1967 (for a revision, see van Achterberg, 1983). Indeed, it is closely related to this genus, but it differs by having the third antennal segment (nearly) normal (at most slightly widened; figs 4, 14), and the third metasomal tergite smooth (figs 13, 16). Possible synapomorphies are the sculptured face, the compressed and sculptured hind tibia, the acutely protruding clypeus and labrum (fig. 2), the widened mandibles (figs 10, 11), the curved base of vein 2-SR of fore wing, and the modified (flattened) upper valve of the ovipositor, enclosing the lower valve apically. The biology of the new genus is unknown; Alysiini with known biology are all koinobiont endoparasitoids of cycloraphous Diptera (Shaw & Huddleston, 1991).

For recognition of the subfamily Alysiinae, see van Achterberg, 1990, 1993, 1997, and for the terminology used in this paper, see van Achterberg, 1988.

Descriptions

Subfamily Alysiinae Stephens, 1829

***Bobekoides* gen. nov.**

Type species: *Bobekoides fulvus* spec. nov.

Etymology: named after the similar European genus *Bobekia* Niezabitowski, 1910. Gender: masculine.

Diagnosis.— Antenna of ♀ about 1.8 times fore wing; third antennal segment slightly shorter than fourth segment, and at most slightly widened (figs 4, 14); mandible distinctly widened dorsally, with long dorsal lamella, dorsal tooth largest and second tooth somewhat shorter and rather acute, ventral lamella wide, with one distinct protuberance (= third tooth) and one indistinct protuberance ("fourth tooth"; figs 10, 11); pronope round (fig. 12); face sculptured; hind tibia compressed and sculptured; clypeus and labrum acutely protruding (fig. 2); base of vein 2-SR of fore

wing curved (fig. 1); vein M+CU of hind wing about 1.6 times vein 1-M; vein 2-SR of fore wing longer than vein 3-SR (fig. 1); veins cu-a and m-cu of hind wing present (fig. 1); vein CU1b of fore wing shorter than vein 3-CU1; hind wing without vein r; dorsope present (fig. 13); second metasomal tergite longitudinally striate (figs 13, 16); third tergite smooth; upper valve of ovipositor modified (flattened), enclosing lower valve apically; apex of ovipositor sheath without spine.

Distribution: Afrotropical (two species from southern Africa).

Notes.— It is obvious that the new genus is closely related to the East Palearctic genus *Hylcalosia* Fischer, 1967, as indicated by the list of possible synapomorphies in the introduction, but it differs by the (nearly) normal third antennal segment in both sexes (figs 4, 9, 14) and by the smooth third metasomal tergite (figs 13, 16).

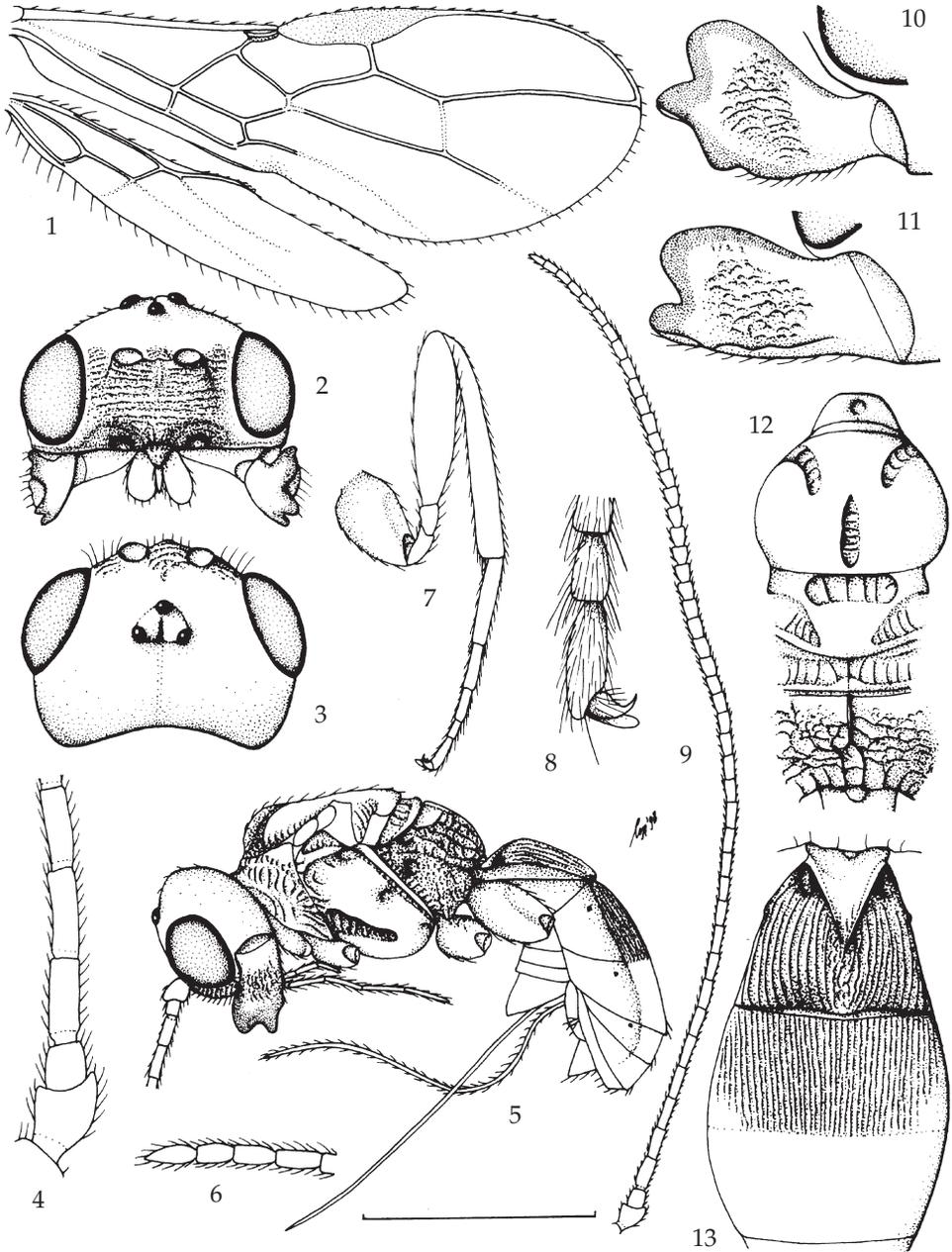
It resembles the Palearctic genus *Bobekia* Niezabitowski, 1910 (stat. nov.). *Bobekia* differs from the new genus by having no deep emargination between the first and second tooth of the mandible, the clypeus less and roundly protruding, the base of vein 2-SR of fore wing straight, and the metanotum acutely protruding dorsally. Fischer (1971) considered *Bobekia* s to be a junior synonym of the genus *Symphanes* Foerster, 1862, but the synonymy is not accepted here because of e.g. the presence of the dorsope of the first metasomal tergite, the normal (not angulate) tarsal claws, and the short third antennal segment in *Bobekia*.

Senwot Wharton, 1983, is the only other genus of Alysiiini known from South Africa having a sculptured second tergite, but can be easily separated by having the vein CU1b of fore wing distinctly longer than vein 3-CU1, the first tooth of the mandible much smaller than the other teeth, and vein r of fore wing issued subbasally from the linear pterostigma.

The new genus seems to be closely related to the East Palearctic genus *Separatus* Chen & Wu, 1994, but that genus has a dorsal incision in the upper lobe of the mandible, the mandible is not widened dorsally, both the central and ventral teeth of the mandible are slender and acute (fig. 1 in Chen & Wu, 1994), the medio-posterior depression of the mesoscutum is short and pit-like, vein 2-SR of fore wing is straight (fig. 4, l.c.), vein cu-a of fore wing is distinctly postfurcal, and the ovipositor sheath is slightly shorter than the metasoma.

Key to species of the genus *Bobekoides* nov.

- 1. Eye longer than temple in dorsal view (about 1.5 times: fig. 3); antennal segments of ♀ 40-48, of ♂ 35-45; length of fore wing 2.1-2.9 mm; basal area of first metasomal tergite triangular, large (fig. 13); length of first tergite 0.8-1.0 times its apical width (fig. 13); vein cu-a of fore wing interstitial or slightly postfurcal (fig. 1); hind tibia and tarsus yellowish; vein 1r-m of hind wing about half as long as vein 1-M of hind wing (fig. 1) *B. fulvus* spec. nov.
- Eye shorter than temple in dorsal view, or of equal length (0.8-1.0 times: fig. 15); antennal segments of ♀ unknown, of ♂ about 59; length of fore wing 3.4-3.8 mm; basal area of first tergite open (fig. 16) or small and triangular; length of first tergite 1.2-1.3 times its apical width (fig. 16); vein cu-a of fore wing distinctly postfurcal; hind tibia and tarsus dark brown; vein 1r-m of hind wing about as long as vein 1-M of hind wing *B. microps* spec. nov.



Figs 1-13, *Bobekoides fulvus* gen. nov. & spec. nov., ♀, holotype. 1, wings; 2, head, frontal aspect; 3, head, dorsal aspect; 4, five basal antennal segments; 5, habitus, lateral aspect; 6, apex of antenna; 7, hind leg; 8, outer hind claw; 9, antenna; 10, mandible, maximum view on first tooth; 11, mandible, maximum view on third tooth; 12, mesosoma, dorsal aspect; 13, first-third metasomal tergites, dorsal aspect. 1, 5, 7, 9: 1.0 × scale-line; 2, 3, 12, 13: 1.3 ×; 4, 6, 8, 10, 11: 2.5 ×.

Bobekoides fulvus spec. nov.
(figs 1-13)

Material.— Holotype, ♀ (ZIL), "RSA: Natal, 17 km NE Empangeni, Nseleni River, 28°42'S, 32°01'E, 24.x.1994, loc. 32, leg. R. Danielsson". Paratypes: 25 ♀♀ + 78 ♂♂ (ZIL; RMNH): 19 ♀♀ + 64 ♂♂, topotypic, same label data; 6 ♀♀ + 14 ♂♂, "Swaziland: 2 km N Loyengo, 26°33'S, 31°11'E, 25.x.1994, loc. 34, leg. R. Danielsson".

Holotype, ♀, length of body 3.1 mm, of fore wing 2.7 mm.

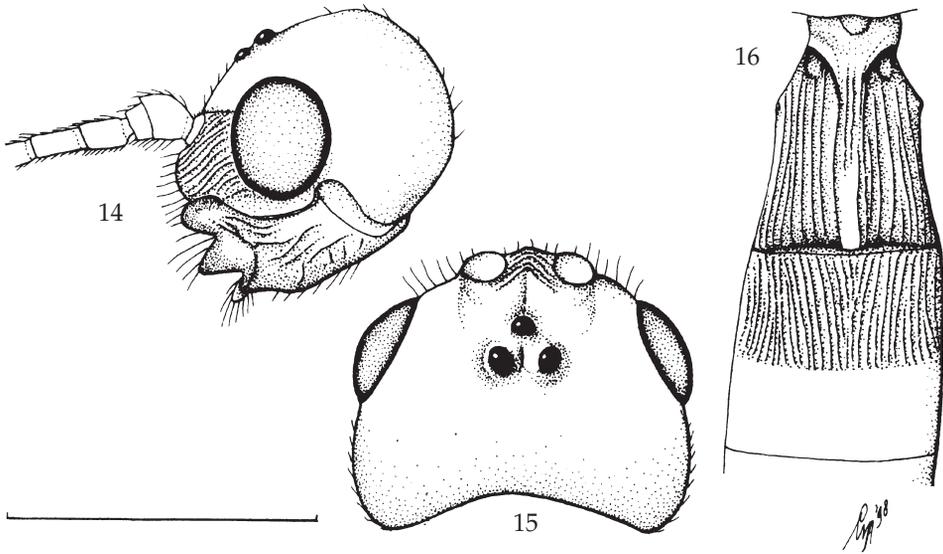
Head.— Antenna 1.8 times length of fore wing (figs 1, 9), with 47 segments, length of third segment 0.95 times fourth segment and hardly wider (fig. 4), length of third, fourth and penultimate segments 2.4, 3.2, and 1.7 times their width, respectively (figs 4, 6, 9); apex of scapus oblique (dorsally longer than ventrally) and pedicellus medium-sized (fig. 4); length of maxillary palp 1.1 times height of head; OOL:diameter of posterior ocellus:POL = 9:3:6; frons glabrous, flat and mainly smooth, with some rugulosity anteriorly (fig. 3); length of eye in dorsal view 1.5 times temple (fig. 3); temples slightly narrowed behind eyes (fig. 3); face transversely rugose (but with a small smooth medio-dorsal elevation, fig. 2); anterior tentorial pits medium-sized, far removed from eye (fig. 2); length of malar space 0.1 times basal width of mandible; mandible distinctly widened, its median length 1.5 times its maximum width, no incision between first and second tooth (figs 10, 11).

Mesosoma.— Length of mesosoma 1.4 times its height; side of pronotum largely crenulate-rugose, but smooth dorsally (fig. 5); precoxal sulcus narrow and finely crenulate, absent posteriorly (fig. 5); metapleuron rugulose-punctate medially, with some rugae ventrally; notauli only anteriorly widely impressed, deep (fig. 12); medio-posterior depression of mesoscutum large, wide and crenulate (fig. 12); mesoscutum largely glabrous and smooth; scutellar sulcus wide and deep (fig. 12); scutellum flat; metanotum with long median carina and slightly protruding dorsally (fig. 5); surface of propodeum mainly smooth anteriorly, remainder distinctly rugose (fig. 12), its median carina strong (lamelliform) on anterior half of propodeum, and with irregular parallel-sided medial area (fig. 12).

Wings.— Fore wing: 1-SR medium-sized (fig. 1); r:3-SR:SR1 = 5:15:40; r slender and issuing distinctly behind middle of pterostigma (fig. 1); pterostigma elliptical (fig. 1); SR1 slightly curved and ending at apex of wing (fig. 1); cu-a interstitial (right wing) or slightly antefurcal (left wing); 2-SR:3-SR:r-m = 18:15:10; CU1a far below level of 2-CU1 (fig. 1); m-cu strongly converging to 1-M. Hind wing: M+CU:1-M = 18:11; m-cu long, slightly reclivous (fig. 1); 1r-m about half as long as 1-M.

Legs.— Hind coxa smooth; tarsal claws robust, shorter than arolium (fig. 8), without basal protuberance; length of femur, tibia and basitarsus of hind leg 3.9, 7.7, and 5.6 times their width, respectively; hind femur punctulate; hind tibia distinctly rugulose, strongly compressed and densely and rather long setose; hind tarsal segments without specialised setae; length of hind tibial spurs 0.35 and 0.30 times hind basitarsus; fore tarsus 1.3 times as long as fore tibia.

Metasoma.— Length of first tergite 0.8 times its apical width, its surface very coarsely and rather regularly striate, with weak intermittent sculpture (fig. 13), its dorsal carinae present in basal half of tergite, almost touching apically and tergite



Figs 14-16, *Bobekoides microps* gen. nov. & spec. nov., ♂, holotype. 14, head, lateral aspect; 15, head, dorsal aspect; 16, first metasomal tergite, dorsal aspect. 14-16: 1.0 × scale-line.

gradually widened behind spiracles (fig. 13); dorsope large, deep (fig. 13); second tergite densely and rather coarsely longitudinally striate (but postero-laterally smooth: fig. 13); third tergite smooth; ovipositor straight; length of ovipositor sheath 0.63 times fore wing, long and rather sparsely setose and without apical spine; hypopygium medium-sized and apically truncate (fig. 5).

Colour.— Brownish-yellow (but mesosoma largely somewhat darker than head and metasoma); stigmatic black; scapus, pedicellus, and basal third of pterostigma, yellow; 3rd-10th antennal segments brown, remaining part of antenna, ovipositor, veins and pterostigma (except its basal third) dark brown; wing membrane subhyaline.

Variation.— Length of fore wing 2.1-2.9 mm, and of body 2.0-3.1 mm; antenna of ♀ with 40(2), 41(6), 42(6), 43(2), 44(3), 45(2), 47(1) or 48(1) segments, of ♂ with 35(1), 36(1), 37(1), 38(6), 39(4), 40(6), 41(17), 42(10), 43(9), 44(2) or 45(4) segments; length of first tergite of ♀ 0.8-1.0 times its apical width; length of ovipositor sheath 0.49-0.63 times fore wing; spiracles of first tergite may be distinctly protruding; pterostigma of male completely dark brown, antenna of male slender, not serrate subapically; fourth and following tergites of male brown, less sclerotized basally.

Distribution.— South Africa; Swaziland.

Bobekoides microps spec. nov.
(figs 14-16)

Material.— Holotype, ♂ (ZIL), "R.S.A.: Natal, Richards Bay, 28°46'S, 32°04'E, 24.x.1994, loc. 31, leg. R. Danielsson". Paratype: 1 ♀ (ZIL), same label data.

Holotype, ♂, length of body 4.3 mm, of fore wing 3.7 mm.

Head.— Antenna with 59 segments, length of third segment 0.9 times fourth segment, slightly widened, length of third, fourth and penultimate segments 1.7, 2.3 and 2.8 times their width, respectively; apex of scapus oblique and pedicellus medium-sized; length of maxillary palp 1.1 times height of head; OOL:diameter of posterior ocellus:POL = 14:4:5; frons slightly depressed medially, with shallow median groove, glabrous medially and rugose anteriorly, laterally convex and setose; length of eye in dorsal view 0.8 times temple (fig.15); temples parallel-sided behind eyes (fig. 15); face transversely rugose, with a narrow smooth band medially; malar space absent medially; mandible as in *B. fulvus*.

Mesosoma.— Length of mesosoma 1.5 times its height; side of pronotum as in *B. fulvus*, but dorsally and subposteriorly largely smooth; precoxal sulcus superficially crenulate-punctate, interrupted subposteriorly; metapleuron smooth medially, rugose ventrally, and crenulate anteriorly; notauli only anteriorly impressed, mainly smooth and rather narrow; medio-posterior depression of mesoscutum deep, long and comparatively narrow, narrowed anteriorly; lateral lobes of mesoscutum partly glabrous, remainder of mesoscutum sparsely setose; scutellum rather convex; metanotum with an indistinct median carina anteriorly, not protruding dorsally; surface of propodeum coarsely transversely rugose, but antero-laterally largely smooth, with its median carina short and medial area absent.

Wings.— Fore wing: r:3-SR:SR1 = 5:13:42; cu-a distinctly postfurcal and inclivous; 1-CU1:2-CU1 = 1:21; 2-SR:3-SR:r-m = 21:13:10; m-cu strongly converging to 1-M. Hind wing: M+CU:1-M = 23:14; m-cu long; 1r-m as long as 1-M.

Legs.— Hind coxa smooth; tarsal claws as in *B. fulvus*; length of femur, tibia and basitarsus of hind leg 4.4, 10.8, and 8.0 times their width, respectively; length of hind tibial spurs 0.25 and 0.35 times hind basitarsus.

Metasoma.— Length of first tergite 1.2 times its apical width, its surface coarsely longitudinally costate(-striate) (fig. 16), its dorsal carinae almost complete (but partly interrupted), not united, subparallel medially (fig. 16); dorsope deep and large; second tergite longitudinally costate, less transverse than in *B. fulvus*; third tergite smooth, distinctly shorter than second tergite.

Colour.— Brownish-yellow; antenna (except scapus and pedicellus), pterostigma, veins, hind tibia and tarsus dark brown; short streak on scapus and pedicellus brown; stemmaticum black; wing membrane subhyaline.

Variation.— The paratype has the hind leg and part of the antennae missing; length of body 3.6 mm, of fore wing 3.4 mm; length of first tergite 1.3 times its apical width, with a small triangular area basally, because the dorsal carinae almost touch each other submedially.

Distribution.— South Africa.

Acknowledgements

Dr R. Danielsson kindly made the specimens available, and Dr M. Shaw (Edinburgh) provided useful remarks on the first draft of this paper.

RMNH stands for the Nationaal Natuurhistorisch Museum/Naturalis, Leiden, and ZIL for Entomological Museum, Zoological Institute, Lund.

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Received: 1.v.1998.

Accepted: 19.v.1998

Edited: M.J.P. van Oijen

