

**A new species of the genus *Sphingonotus* FIEBER (Orthoptera:
Acrididae: Oedipodinae) from Libya**

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ABSTRACT. A new species *Sphingonotus brackensis* sp. n. is described and illustrated from Fez-
zan province of Libya. Additional characters of male and female genitalia have also been provided.

KEY WORDS: Orthoptera, Acrididae, Oedipodinae, *Sphingonotus*, new species, Libya.

INTRODUCTION

The genus *Sphingonotus* was proposed by FIEBER for *Gryllus (Locusta) caerulans* Linnaeus. Mistshenko (1937) revised the Palaearctic species of the genus *Sphingonotus* and reported more than one hundred species in all and six species from Libya namely: *S. azurescens*, *S. eurasius*, *S. obscuratus*, *S. octofasciatus*, *S. rubescens* and *S. tricinctus*. JOHNSTON (1956) listed eight species including *S. caerulans* and an unnamed species of *Sphingonotus* described by SALFI (1929) from Libya in his annotated catalogue of African grasshoppers. LATER, La Greca (1957) recorded five species adding *S. savignyi* and a newly described subspecies of *S. vitreus* Saussure from Tripolitania (Libya). DIRSH (1965) recognized eight species from Libya excluding *Sphingonotus* sp. described by SALFI (1929) and *S. vitreus brevipes* by La Greca (1957). The genus is known at present in Libya to contain nine species including the present new species *Sphingonotus brackensis* sp. n.

DESCRIPTION

Sphingonotus brackensis sp. n.
(Figs 1a,b, 2a-h)**Holotype male (Fig. 1a)**

Body small with sparse hairs; antennae slender, longer than head and pronotum together; head scarcely projecting above the pronotum; eyes oval, weakly projecting sideways; frons almost vertical; frontal ridge slightly concave, somewhat widened between the antennae, slightly constricted below the ocellus, completely obliterated between ocellus and clypeus, margins thick, flat in profile; fastigium of vertex strongly sloping, almost vertical; vertex wide, weakly impressed, median carinula only slightly marked, margins weakly raised, maximum width of vertex twice the width of frontal ridge between the antennae; fastigial foveolae indistinct, punctured; pronotum weakly constricted in prozona, median carina insignificantly raised before first sulcus, absent between the sulci, low and linear in metazona; transverse sulci distinct but not deep; metazona flat, twice as long as prozona, posterior margin weakly rounded, lateral lobes vertical, anterior margin bisinuate, anterior lower angle obtuse, rounded, posterior margin straight, posterior lower angle widely rounded, lower margin obliquely ascendant, wavy; mesosternal interspace 1.5 times as wide as long; tegmina not quite reaching the apices of hind tibia, five times as long as wide, venation fairly dense, intercalary vein curved near to discoidal vein at apex, finely granular; hind wings elongate, triangular; hind femur slender, 3.5 times as long as wide; hind tibia slightly shorter than hind femur, with 10 spines on outer and 11 spines on the innerside; arolium very small.

Genitalia

Supra-anal plate acute-angular, wider than long, finely sculptured dorsally, lateral margins curved medially, apex attenuate; cercus elongate, slightly incurved and with truncate apex (Fig. 2g). Subgenital plate (Fig. 2h) wide, flattened, much wider than long, apex widely rounded. Epiphallus (Fig. 2e), bridge moderately narrow and undivided medially, ancorae large, moderately broad, curved backwards, tips pointed, lophi bilobate, anterior projections broad and well developed, lateral plates prominent, anterior projections small and angular. Aedeagus (Fig. 2f), apical valve slightly upcurved, narrower and much shorter than basal valve, apex pointed.

Colouration

Greyish-yellow; head whitish, ocelli yellow; antennae yellow with brownish rings; tegmina transparent in apical third, basal third darkish with a band; median fasciae very distinct, dark; interspace between the fasciae without dark spots, veins light; wings yellow

at base, with a fairly wide fascia in the middle, not reaching the posterior margin, narrowing towards the anterior margin, second dark fascia near the apex, apex transparent, veins at apex dark; hind femur on innerside yellowish-brown with two light bands, one being incomplete, apex dark; hind tibia yellow with faint blue shade in the middle.



Fig. 1a. *Sphingonotus brackensis* sp. n.: male type.

Measurements

Length in mm: body, 32; pronotum, 9; tegmen, 30; hind femur, 18.5.

Allotype female (Fig. 1b): as male but larger

Genitalia: supra-anal plate short, wider than long, apex obtusely rounded; cercus short, broad, one and a half times as long as wide, with narrow-conical apex (Fig. 2a). Subgenital plate (Fig. 2b), posterior margin faintly serrated, notched in the middle, setose marginally; jannone's organs clumped, egg-guide broad basally, abruptly narrowing at apical one-third.

Spermatheca (Fig. 2c), pre-apical diverticulum long, uniformly broad, much longer than apical diverticulum.

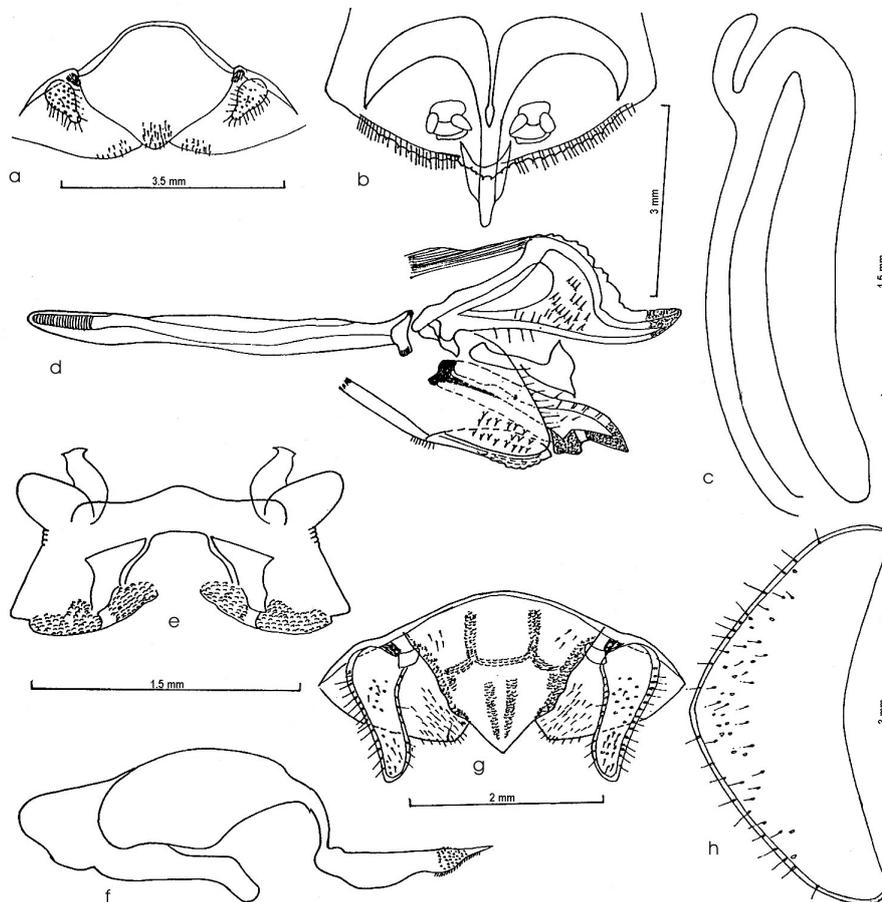
Ovipositor (Fig. 2d), valves elongate, moderately robust, curved and shorter than lateral apodeme; dorsal valve broad, less than three times as long as wide, apical tip acute, external edge with fine ridges, dorsal condyle prominent; ventral valve with external, lateral wide projection, apical tip long and acute, mesial tooth distinct, basal sclerite tuberculate and serrated basally; mesial valve dilated apically.



Fig. 1b. *Sphingonotus brackensis* sp. n.: female.

Measurements

Length in mm: body, 34; pronotum, 10.5; tegmen, 35; hind femur, 20.



Figs 2 a-h. *Sphingonotus brackensis* sp. n.: a – female supra-anal plate and cerci, b – female subgenital plate, c – spermatheca, d – ovipositor, e – epiphallus, f – aedeagus, g – male supra-anal plate and cerci, h – male subgenital plate.

Type Material

HOLOTYPE male, LIBYA: Fezzan province, Al-Shati region, 27-28 degree North latitude in the South Corner of Tripoli, Altitude 250-300m., Brack, on grass, 25.09.1994 (M.K. USMANI).

PARATYPE 1 male, Allotype 1 female, same date as before.

Depository: Museum of Zoology, Sebha University, Brack, Al-Shati, Libya.

Other material examined

All from Al-shati region of Libya: Brack, Higher Institute of Technology, 1 male, 2 female, on grass, 30.11.1994; 1 male, 1 female, at light, 5.12.1994 (M.K. USMANI). Depository: as above.

Measurements of four males and four females gave the following ranges and means

Males: Body, 30.5-32.0 mm (mean 31.4); pronotum, 8.5-9.0mm (mean 8.8); tegmen, 28-30 mm (mean 28.8); hind femur, 18.0-19.5 mm (mean 18.8).

Females: Body, 34.0-36.5mm (mean 35.7); pronotum, 10.3-11.0mm (mean 10.6); tegmen, 34.8-36.0 mm (mean 35.4); hind femur, 20.0-21.5mm (mean 20.7).

Etymology

Geographic name refers to the city of Brack in Al Shati region of Fezzan province in Libya.

DISCUSSION

The new species superficially resembles *S. octofasciatus* (Serville) in having two black fasciae on tegmina and wings but differs in colouration of bases of wings which is yellow in *S. brackensis* sp. n. and red in the latter. Besides, the new species differs from it by the following characters: vertex weakly impressed, median carinula only slightly marked, margins weakly raised, pronotum weakly constricted in prozona.

It is similar to *S. luteus* KRAUSS described from Algeria in having wings yellow but differing from it by the following characters: head scarcely projecting above the pronotum; metazona flat, twice as long as prozona; median carina very insignificantly raised in front of first sulcus; mesosternal interspace 1.5 times as wide as long; tegmina with two bands (one at apex of basal third and a median fascia very distinct, almost black); wings with a fairly wide fascia in the middle and a second dark fascia near the apex; hind femur on innerside yellowish brown; hind tibia with 10 spines on outer and 11 spines on innerside.

The new species differs from *S. octofasciatus* and *S. luteus* in having maximum width of vertex twice the width of frontal ridge between the antennae which is 1.5 times the width of the frontal ridge between the antennae in latter two species.

A comparative study of male and female genitalia on some Libyan species of *Sphingonotus* reveals that *S. brackensis* differs distinctly from other species in shape of its female subgenital plate (Fig. 2b) with posterior margin faintly serrated and notched in middle while it is wavy or finely serrated in other species. Spermatheca (Fig. 2c) with pre-apical

diverticulum uniformly broad and much longer than apical diverticulum while in other species it is broad and sac-like and without apical diverticulum in *S. coerulans* and *S. rubescens*. Male supra-anal plate (Fig. 2g) short and wider than long; in *S. obscuratus* and *S. rubescens*, it is elongated and longer than wide and as long as wide in *S. octofasciatus*, *S. savignyi* and *S. coerulans*. Epiphallus (Fig. 2e), anterior projections broad and well developed which is prominent but not well developed in other species. Aedeagus (Fig. 2f) with apical valve slightly upcurved and the same condition exists in *S. rubescens*, *S. savignyi* and *S. octofasciatus* while it is strongly upcurved in *S. coerulans* and *S. obscuratus*.

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