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An unusual species of *Cryptosceneae* ENDERLEIN, 1914 from Western Australia (Neuroptera: Coniopterygidae)

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ABSTRACT. *Cryptosceneae maior* sp. n., an unusually large-bodied species of the genus *Cryptosceneae* with distinct wing pattern is described from south - western Australia. The specimens of the new dusty lacewing species were observed as predators of the scale insect *Eucalyptococcus gisleni* (OSIANNILSSON, 1954) (Hemiptera: Pseudococcidae).

Key words: entomology, taxonomy, morphology, Coniopterygidae, *Cryptosceneae*, new species, Australia, scale insects.

INTRODUCTION

Type species of the genus *Cryptosceneae* was originally described in the genus *Helicoconis* ENDERLEIN, 1905 (as *H. australiensis* ENDERLEIN, 1906) on the basis of a female specimen captured by Ludwig BIRÓ (a successful Hungarian collector of his time) in New South Wales, Australia (ENDERLEIN 1906). Original description of the new (than monotypic, and exclusively Australian) genus, and its distinction from the related taxa was carried out in a subsequent paper (ENDERLEIN 1914). The excellent monograph of MEINANDER (1972) contained already five recognized *Cryptosceneae* species, and four of them were Australian. In a recent comprehensive work on the family, SZIRÁKI (2011) listed 12 species in the genus, including five species from Australia. One previously described species is recorded from Western Australia (*Cryptosceneae evansorum* SMITHERS, 1984), while the second species mentioned by SZIRÁKI (2011) as „*Cryptosceneae* sp. 1” is formally described and figured herein from Porongurup National Park.

The known geographical distribution of *Cryptosceneae* ranges from Australia, New Guinea, New Zealand (including Kermadec Islands) and southern Parts of Asia from China to the Arabian Peninsula. Its occurrence in the Afrotropical Region is possible also, however, it seems to be uncertain.

According to ENDERLEIN's distinction (ENDERLEIN 1914) there is a very short M-Cu₁ cross vein, and the „Cu cell” (i. e. the membrane between the basal part of the veins M and Cu₁) is very narrow in the hind wing of *Cryptosceneae*, while in *Helicoconis* no M-Cu₁ cross vein in the hind wing, the membrane between M and Cu₁ is not very narrow, and it is widening outwards gradually. Although this set of distinctive features was accepted by MEINANDER (1972), it was ignored in a few subsequent papers (MEINANDER 1979, 1998). Later on distinctive concept of ENDERLEIN was confirmed again, and it was completed with other features characteristic of *Cryptosceneae* and not for *Helicoconis*, namely: the absence of setae on M of fore wing, absence of ventral process on male ectoproct and presence of long fringes on the hind margin of the hind wing (SZIRÁKI & VAN HARTEN 2006). None of the characteristics listed above are recognizable in *Cryptosceneae tanzaniae* MEINANDER, 1998, the single described species from the Afrotropical Region. This species actually belongs in *Helicoconis* (SZIRÁKI 2011).

The other possibly *Cryptosceneae* species from this region would be the „*Cryptosceneae* sp.” recorded from Bioco Island (Ecuatorial Guinea) by MONSERRAT & DIAZ-ARANDA (1988). However, the taxonomic position of this insect seems to be uncertain, because informations concerning diagnostic features of the examined female specimen are lacking entirely.

MATERIAL AND METHODS

Four dusty lacewing specimens were collected in a dry eucalypt forest under bark of *Eucalyptus diversicolor* trees. The singled insects (one male and three females) were placed into ethanol, three of which were later dried and glued to paper points, while the fourth one remained in alcohol, with exception of its right wings, which were mounted on a slide.

The tip of the abdomen of the male specimen was removed, cleared with KOH, examined with stereo- and translucent light microscope and preserved in micro vial, containing glycerol.

DESCRIPTION OF THE NEW SPECIES AND REMARKS

The distinct features of the wings showed without any doubt that all the four examined specimens belong to the same – hitherto undescribed – species within the genus *Cryptosceneae* ENDERLEIN, 1914. *Cryptosceneae maior* sp. n. can be determined based on the diagnostic features identified below and by using the dichotomous key to species included in SZIRÁKI (2011).

***Cryptosceneae maior* sp. n.**
(Figs 1-8)

Cryptosceneae sp. 1: SZIRÁKI 2011.

EXAMINED MATERIAL

Holotype: male, Australia: Western Australia: Porongurup National Park, 18. IX. 2008; 34° 40' 33.3" S, 117° 49' 46.5" E, 347m above the sea level, dry xerophytic



1-2. Mounted paratype specimen of *Cryptosceneae maior* sp. n. without wax layer: 1 – dorsal view (photographed by G. PUSKÁS), 2 – lateral view

eucalypt forest; leg.: S. D. GAIMARI and S. L. WINTERTON; deposited in the insect collection of Western Australian Museum, Welshpool. Paratypes: 3 females, same data as holotype; deposited in California State Collection of Arthropods, Sacramento and in Hungarian Natural History Museum, Budapest.

DIAGNOSIS

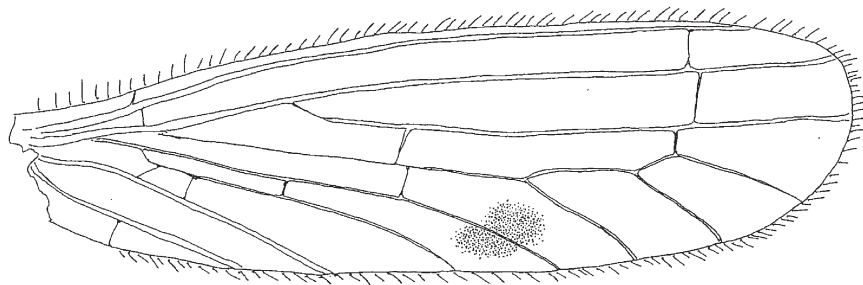
Fore wing with a striking dark spot, styli narrow, parameres shorter than penis, penis rather broad.

DESCRIPTION

Relatively large coniopterygid; body length 3.0-3.7 mm, colour mainly pale ochreous, but sutures of thorax black. Shape of the head and palpi typical for family. Frons and vertex moderately, genae and clypeus more sclerotized. Eyes rather small, in alcohol black, in dry condition shiny aureous bronze. Antennae 1.7-2.0 mm, 30-35 segmented. Scape about as long as broad, pedicel 1.7-times as long as broad, median flagellar segments slightly shorter than broad. Length of fore wing 3.9-4.0 mm, of hind wing 3.4-3.5 mm. Membrane of both wings hyaline, with exception of a distinct dark spot near the ending of the vein Cu_1 of the forewing (Figs 1-3). The other features of the wings are typical of the genus: no setae visible on M in fore wing, Cu_1 running for more than half of its length so close to stem of M in the hind wing that no membrane visible between them, and distal parts of these veins (after a very short cross vein) diverging abruptly from each other, and there are long fringes on the hind margin of hind wing.

In living condition the insects were very densely covered with wax granules, however, the number of wax glands on abdomen rather low, and no such organs around the plicaturae.

Male terminalia (Figs 4-8): Eighth sternite short, ventrally slightly wrinkled, posterior margin strongly sclerotized. Coxopodites moderately large, stout, rounded caudally. Ectoproct short, widely rounded. Styli narrow, slightly bifurcate, directed upwards and inwards. There is a weakly sclerotized structure between the ectoprocts which probably represents the tenth sternite. Parameres distinctly shorter than penis,

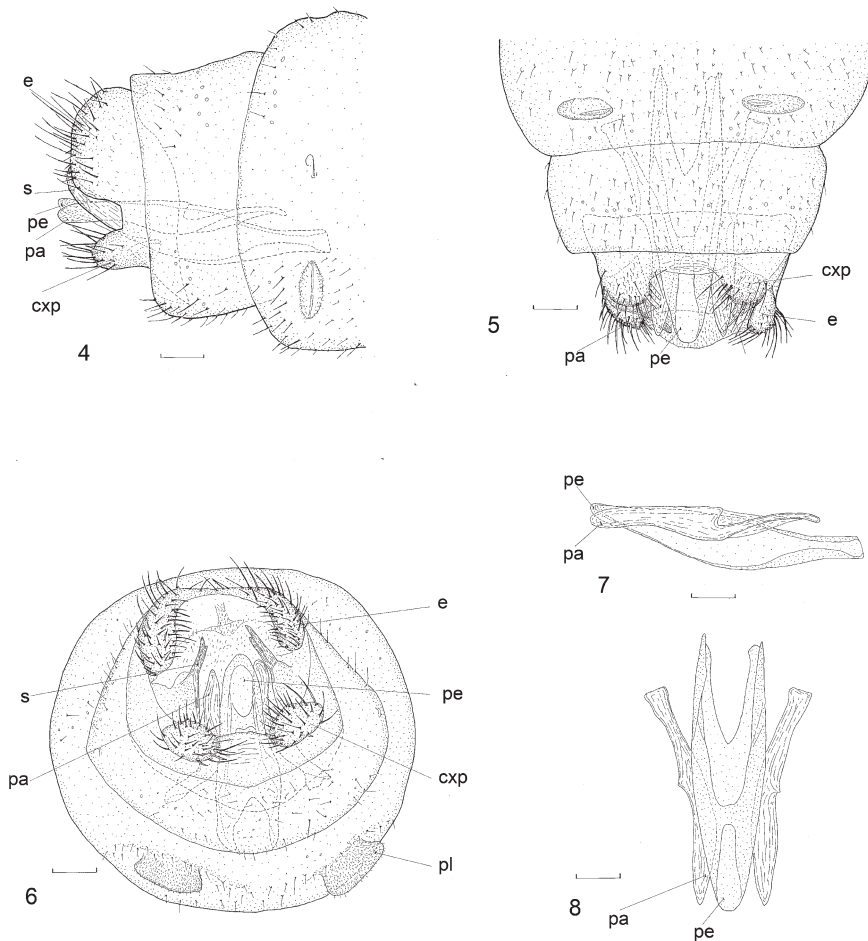


3. *Cryptosceneia maior* sp. n. fore wing

with a dorso-lateral angle approximately midway. Penis relatively broad and narrowed evenly posteriorly, its apex rounded in ventral view.

DISTINCTIVE FEATURES

Regarding the shape of the penis, paramere and stylus the new species resembles somewhat to *Cryptosceneae novaguineensis* MEINANDER, 1972, however, penis in lateral view narrower, paramere wider, and stylus slightly bifurcate only instead of having a distinct apophysis medially. Moreover, *Cryptosceneae maior* sp. n. has two surprising eidonomic characteristics unique in the genus: it is much more larger than any of the hitherto described species and has a conspicuous dark spot on the fore wing. (The wings of all other *Cryptosceneae* species lack distinct patterning.)



4-8. *Cryptosceneae maior* sp. n. 4 – male terminalia, lateral view, 5 – ventral view, 6 – caudal view, 7 – paramere and penis, lateral view, 8 – ventral view, cxp – coxopodite, e – ectoproct, pa – paramere, pe – penis, pl – plicature, s – stylus; Scale bar: 0.08 mm

ETYMOLOGY

The species name is derived from the latin „*maior*” = larger.

REMARKS

Specimens were observed in situ feeding on females of the very large mealybug, *Eucalyptococcus gisleni* (OSSIANNILSSON, 1954) (Sternorrhyncha: Pseudococcidae) under the loose bark of *Eucalyptus diversicolor* F. MUELL. (Myrtaceae). Feeding by Coniopterygidae on Sternorrhyncha is widely reported (WHEELER 1980; MILLER et al. 2004) and *Cryptosceneae australiensis* is recorded preying upon multiple species of Pseudococcidae (CHARLES 1989, 1993). This is the first record of a Coniopterygidae preying upon *Eucalyptococcus*, and the first definitive record for praying activity of this genus from Australia. It is suspected that the newly described *Cryptosceneae* species have a role in maintaince of the vigorous condition of karri forests of south - western Australia.

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