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Paraglenurus ornatus (Needham, 1913) comb.n. from the Seychelles (Neuroptera: Myrmeleontidae)

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Ábrahám, L.: *Paraglenurus ornatus (Needham, 1913) comb.n. from the Seychelles (Neuroptera: Myrmeleontidae).*
Abstract: The second specimen of *Distoleon ornatus* (Needham, 1913), an endemic species from the Seychelles, has become known. As a result of the morphological examination, it is moved into a new genus *Paraglenurus ornatus* (Needham, 1913) (**comb.n.**), and a redescription is given.

Keywords: antlion, *Paraglenurus*, new combination, redescription, Seychelles

Introduction

Stange (2004) listed 9 species in the genus *Paraglenurus* van der Weele, 1909, of which one species (*P. lotzi* Miller and Stange, 2000 syn. of *P. pumilus* (Yang, 1997)) was later synonymized (Ábrahám & Giacomino 2020). Surprisingly, Matsumoto et al. (2021) described a significant number of 5 new species from the Japanese Archipelago based on the morphological and genetic examinations of *Paraglenurus* adults and larvae.

Almost all of the species belonging to the genus *Paraglenurus* occur mainly in the costal zones of the continents and in the neighboring archipelagos. They spread from the islands of the Eastern Palearctic areas, from Japan through Taiwan to the Indonesian archipelago, which already belongs to the Oriental realm, and extends to the Afrotropical realm to Madagascar.

Matsumoto et al. (2021) pointed out that the diverse habitats in that non-pitbuilding larvae can occur on these islands, and with the high degree of morphological similarity, genetic studies may cover these cryptic species in the future. The species belonging to the genus are not common in taxonomic collections either, so new species are expected.

Needham (1913) studied the antlion fauna of the Seychelles islands north of Madagascar and described an endemic species of antlions as *Formicaleo ornatus* Needham, 1913. Based on the description of Needham (1913), Ohm & Hölzel (1995) treated it in the genus *Distoleon* Banks, 1910. In the publication of Needham (1913), the short description of the species and the poor quality of the published photograph of the wings did not make it possible to combine the species into a genus precisely later. The type specimen was not examined by Ohm & Hölzel (1995) and Whittington (2013) only its faunistic data were cited.

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WHITTINGTON (2013) compiled a paper on the entire Neuroptera fauna by searching for unpublished and published data from the Seychelles islands preserved in the various collections. He provided a key for the imagoes and larvae at the genus or tribe level, but he did not have any recent material.

It is an endemic species, so it has a very local distribution, and apart from the type specimen, no additional material was available until now. Recently, the second known specimen of the species was found. This provided an opportunity to revise the species and to make morphological additions to the original description.

Material and methods

The second known specimen was collected on the illuminated terrace of a tourist building on the island of Praslin. The imago was drawn there by the light of the lamp.

Material examined: 1 (tip of abdomen missing), Seychelles Praslin, 150 m St. Anna bay, 10-18.02.2013 Saldaitienė & Saldaitis leg.

The habitus photos were taken by Canon EOS 6DM2 digital camera equipped Canon macro lens 100 mm and a flashlight system (Godox MS 300). Later, the layers of photos were processed with stacking and Adobe Photoshop software.

Results and discussion

Abbreviations: Comb – New combination, Dist – Distribution, Key – Key to sp., Mon – Monograph, Ordescr – Original description.

Paraglenurus ornatus (Needham, 1913) – **comb.n**. (Fig. 1)

Formicaleo ornatus Needham, 1913: 245 – (Ordescr).

Distoleon ornatus (Needham, 1913) – Ohm & Hölzel 1995: 8 (Comb, Dist), Stange 2004: 158 (Mon), Whittington 2013: 195 (Key, Dist)

The type is preserved in the Natural History Museum London, England. Not seen.

Redescription.

Head: Vertex not prominent in frontal view, top of yellow with very sparse and short black hairs. Frons narrow and yellow without hairs. Shining dark brown stripe spreading from eye to eye above antenna. Gena yellow, hairless. Clypeus and labrum yellow, sparse medium long, and black hairs. Mandible yellow with shining brown apex and inner margin. Maxillary and labial palps yellow. Eyes remarkably large and shiny brown. Antenna clavate, 10 mm long. Scape, pedicel brown above and yellow below; flagellar segments brown to yellow in one-third of basal part, then yellow up to club with short dense and brown setae. Club large brown, tip of club dark brown. (Fig. 2)

Thorax: Pronotum 1.5x longer than wide, subromboid-shaped, dominantly yellow with two latero-posterial area indistinct brownish spots, with sparse medium long upstanding and black hairs. Mesonotum and metanotum yellow dorsally with brown indistinct stripe laterally and with sparse very short hairs. Sides yellow with distinct longitudinal brown stripe below wings and with sparse short yellow and brown hairs (Fig. 3).

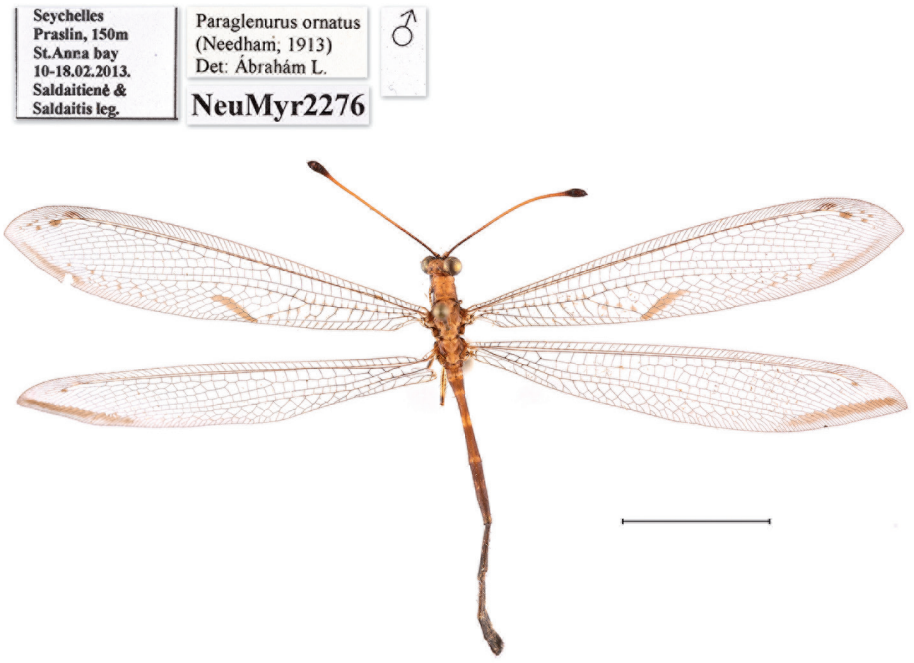

Fig. 1: Habitus of *Paraglenurus ornatus* (Needham, 1913)

Fig. 2: Head in frontal view

Fig. 3: Vertex and thprax in dorsal view

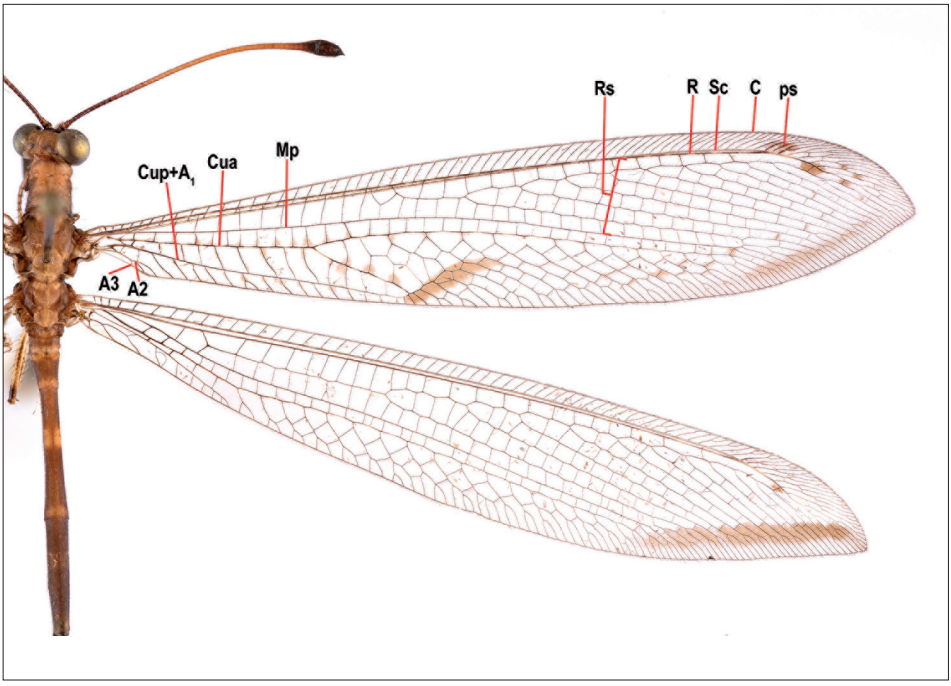

Fig. 4. Pattern in fore and hindwings

Abbreviations: C – Costa, Sc – Subcosta, R – Radius, Mp – Media posterior, Cua – Cubitus anterior, Cup+A1 – Cubitus posterior+Anal 1, A2 and A3 – Anal vein 2 and Anal vein 3, ps – pterostigma, Rs – radius sector.

Wings: Forewing: 29 mm long, 5.5 mm wide. Forewing with acute apices and blunt anal area. Membrane transparent with smaller and larger light brown shadows and dots as in Fig. 4. C yellow, Sc, R, and Cua yellow interrupted with brown dashes at cross veins. Mp dominantly brown. Cup+A1 brown basally and yellow distally reaching Rs origin. A2 and A3 yellow. A2 bifurcated. Pterostigma indistinct, with 4 brown cross-veins, membrane slightly pigmented with brown. Rs origin well beyond cubital fork. 11 radial cross-veins in front of origin of Rs.

Hindwing: 30 mm long, 5 mm wide narrow with acute apices, subapical area straight. C yellow, Sc interrupted with brown dashes at cross veins. Other longitudinal veins dominantly brown basally and yellow distally. Pterostigma indistinct with 2 brown cross-veins, membrane without pigmentation. 1 radial cross-vein in front of origin of Rs.

Legs: Slender and very long. Coxa dominantly brown in fore leg. Coxae yellow with pale hairs on middle and hind legs. Femora longer than tibiae in fore and middle legs and as long as in hind leg. All femora with longitudinal brown stripes dorsally and with brown dots at origin of black hairs. Middle and hind femora with distal brown rings before joints. Long black sense hair on fore and middle femora, missing on hind femur. Femora with long stiff and black bristles and short black and with hairs. Tibiae yellow with brown dots at origin of black hairs. Tibial spurs slightly longer than tarsal segment 1. Tarsal yellow with black bristles, segment 1 as long as tarsal 5. Tarsal segments 2-4 equal, combined lengths slightly longer than tarsal segment 1. Claws bent, half as long as tarsal segment 5. (Fig. 5).

Abdomen: shorter than wings. Tergites dominantly brown with yellow spots laterally. Tergite 2 short and brown and with yellow in caudal margin. Tergite 3 about 3x longer than tergite 2 brown with round centro-lateral spot, and caudal margin with yellow mark. Other tergites brown. Tergites with short and black setose. Sternites 2-3 yellow with longitudinal brown stripes laterally and with pale hairs then segments turn brown.

Genitalia: Tip of abdomen broken, gender unknown.

Fig. 5. Legs in lateral view

Distribution. It is endemic in the Seychelles, Mahé, and Praslin. The distance between the two islands is approx. 50 km.

Habitat. In the known sites of the endemic species (Mahé and Praslin), granite is the bedrock and they rise as high boulders from the Indian Ocean. Praslin is the second largest granitic island of Seychelles (38 km^2). The vegetation on the higher islands shows zonation (Coastal Plateau, Lowland and Coastal Forests, Intermediate Forest, and Mountain Mist Forest) with increasing altitude (Fleischmann et al. 2003).

The Coastal Plateau, Lowland and Coastal Forests (200-300 m) or Intermediate Forest (200-500 m) can provide habitat for P. ornatus. Due to soil moisture, Mountain Mist Forest (400-500 m) and the coastal strip (mangrove zone) are not typically preferred by antlion larvae.

The lower we are in the coastal zone, the more the natural vegetation has been transformed by human activity. In the mentioned habitats, a number of micro-habitats suitable for local conditions can develop. The larvae of the *Paraglenurus* species are not pit-building, they can have microhabitats in the root zone of less dense vegetation, on slightly disturbed surfaces, on shorelines, at the foot of rocks, etc. In their habitats, the structure of the vegetation is more important than the composition of the vegetation.

In Praslin, compared to the other islands, most of the natural vegetation has been preserved. The species is found in so-called Lowland and Coastal Forests, this is a fairly dense forest with thick undergrowth. In many places, the original vegetation is replaced by economic crops and deforested hillsides. This area is drier than the higher elevations. Fig. 6.

Seasonal activity. Imago flies from November to Marc. Larva probably develops during the drier period from May to October.

Fig. 6: Habitat of *Paraglenurus ornatus* in Praslin, St Anna bay (Photo: A. Saldaitis)

The Seychelles archipelagos lie 1.500 km east of mainland Africa. Nearby territories include the Comoros, Madagascar, Mauritius, the Mayotte, Réunion, and Maldives are located at a significant distance (at least 1,200 km) in the Indian Ocean. With the exception of Madagascar, the species of *Paraglenurus* does not occur in the antlion fauna of the other islands. However, a generic revision of *Paraglenurus pinnulus* (Auber, 1955) from Madagascar is needed.

Its considerable distance from Madagascar and the size of the area do not allow for a larger number of antlion species to colonialize on the islands. So far, four species have been recorded in the Seychelles islands (Needham 1913, Ohm & Hölzel 1995, Whittington 2013). Two of them (*Creoleon mortifer* (Walker, 1853), *Myrmeleon obscurus* Rambur, 1842) are more widely distributed in Africa. Unfortunately, since the publishing of the first data on *C. mortifer*, it has not been collected in the Seychelles again. It is registered as extinct species (Gerlach 2013). If it appears in the future, the status of the species will be revised together with the Madagascan and East African *Creoleon* species (Ábrahám 2020). *Syngenes maritimus* (Needham, 1913) was previously considered an endemic species, then it was synonymized as *Syngenes longicornis* (Rambur, 1842) by Ohm & Hölzel (1995). Mansell (2018) revised the genus, and *S. maritimus* was reinstated from synonymy with S. *longicornis*, and extended its distribution area to Madagascar. The most common antlion species on Praslin Island is *Myrmeleon obscurus* Rambur, 1842. The type locality is Mauritius. Based on literature (eg. Stange 2004, Oswald 2023), it is widespread in Africa, but it will be worth revising the African *Myrmeleon* species in the future from a taxonomic and genetic point of view.

Thus, the only endemic species of *Paraglenurus ornatus* (Needham, 1913) in the Seychelles. This species represents a high value from a nature conservation point of view, as tourism is very important for local inhabitants, and its habitats in the coastal zone are presumably highly endangered. It was treated as an extinct species according to Seychelles red list (Gerlach 2013).

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