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Note on *Xylocopa caffra* (A LINNÉ, 1767) (Hymenoptera: Apidae) and *Dinogamasus affinis* (BERLESE, 1918) (Acari: Laelapidae) in the Republic of Seychelles

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Abstract

New records of *Dinogamasus affinis* (BERLESE, 1918) associated with *Xylocopa caffra* (A LINNÉ, 1767) from Mahé and Silhouette (first record) are dealt with.

Key words: Apidae, *Xylocopa*, Laelapidae, *Dinogamasus*, new record, Seychelles

Zusammenfassung

Neue Funddaten der Milbe *Dinogamasus affinis* (BERLESE, 1918) von den Inseln Mahé und Silhouette (Erstnachweis) werden mitgeteilt.

Introduction

All developmental stages of *Dinogamasus* live in nests of carpenter bees (*Xylocopa* spp.) in association with their larvae and pupae. They feed on cuticular exudates and probably on associated surface microorganisms (EICKWORTH 1994: 233, 235). The young adults migrate in the acarinarium, a pocket at the gaster's base (Fig. 1) of the young female *Xylocopa* offspring. The dispersal is by phoresy. Although the special acarinarium suggests symbiosis between the two organisms, the benefits for the bee are unknown. It might be related with a reduction of microorganisms in the nest.

Xylocopa caffra (A LINNÉ, 1767) is widely distributed in the Ethiopian region from Ethiopia to South Africa, but it is missing in West Africa (EARDLEY & URBAN 2010: 340). It is common in the Inner Seychelles. Several insects and mites are associated with this carpenter bee (EARDLEY & URBAN 2010: 341).

During a stay (26 October - 7 November 2011) at La Roussette Hotel in Anse aux Pins on Mahé, the main island of the Republic of Seychelles, the second author made several photos of *Xylocopa caffra* females bearing phoretic mites, *Dinogamasus affinis* (BERLESE, 1918), the only Seychellean *Dinogamasus* species. Consequently, we checked the Seychellean female specimens of *Xylocopa caffra* in the collection of the Natural History Museum Vienna (Austria) for mites. We found only two females with phoretic mites collected on Mahé and Silhouette (first record).

Dinogamasus affinis was described from Somalia and recorded from the Seychelles (LUNDQVIST 1999). Nothing is known about the biology of *Dinogamasus affinis* in the

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Inner Seychelles or Seychelles proper except one host record (LeVeque 1930: 14). In the Ethiopian region Skaife (1952) studied the biology of *Dinogamasus braunsi* (Vitzthum, 1914), which is associated with *Xylocopa caffra* in South Africa, and Madel (1975) the biology of *Dinogamasus villosior* (Berlese, 1892), an associate of *Xylocopa flavorufa* (DeGeer, 1778) in Kenya. Odhiambo (1958) recorded the hosts of four *Dinogamasus* species from Uganda and listed *Xylocopa* species with or without an abdominal acarinarium.

The following data are restricted to the Republic of Seychelles. Abbreviations: cat. – catalogue; descr. – description; fig. (figs.) – figure(s); syn. – synonym; tax. – taxonomy.

Dinogamasus affinis (Berlese, 1918)

Dinogamasus affinis (Berlese, 1918): Lundqvist 1999: 5 (fig. 1), 15 (fig. 9: tax.), 16 (figs. 10A-D), 17 (figs. 11A, B), 18 (figs. 12A-D), 19 (figs. 13A, B), 20 (fig. 14: host-parasite cat.), 21 (tax.), 22 (tab. 2a: tax.), 23 (tab. 2b: tax.), 24 (tax., fig. 16: tax.), 26 (key), 47 (tax., descr., Mahé), 48 (figs. 42A-F). Gerlach 2010a: 357 (cat. Seychelles). Gerlach 2010b: 417 (red list).

Dinogamasus cockerelli: LeVeque 1930: 12 (figs. 6a-c), 14 (tax., biol., Mahé); LeVeque 1933: 104 (tax.). Lundqvist 1999: 47 (syn.).

Dinogamasus northolmensis: Loots 1980: 756 (descr., Mahé), 757 (figs. 33-38), 759 (figs. 39-42). Lundqvist 1999: 49 (syn.).

Host: *Xylocopa caffra* (a Linné, 1767) (LeVeque 1930: 14, as *Mesotrichia incerta seychellensis* Cockerell, 1912).

Examined material of *Xylocopa* with symbiotic mites: Mahé: Morne Seychellois National Park, Grand Saint Louis River, 21.-25.V.1996, leg. M. Madl, 1 ♀. – Silhouette: Baie Cipailles, 11.-12.X.2002, leg. M. Madl, 1 ♀.

Distribution: Inner Seychelles: Mahé, Silhouette. As *Xylocopa caffra* is widely distributed in the Inner Seychelles (Mahé, Chauve Souris, Conception, Thérése, Silhouette, Ile du Nord, Praslin, Cousin, Cousine, Curieuse, La Digue, Félicité, Grande Sœur, Marianne, Aride, Denis, Bird), the distribution of *Dinogamasus affinis* is still imperfectly known.

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Fig. 1: Female of *Xylocopa caffra* with phoretic *Dinogamasus affinis* searching for a nesting site (Photo: M. Madl).

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