

Short scientific noteSubmitted: June 14th, 2019 - Accepted: October 15th, 2019 - Published: November 15th, 2019**A Mole Cricket *Neoscapteriscus didactylus* from Guadeloupe with advice to wear and tear of dactyls (Orthoptera: Gryllotalpidae)**

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AbstractA mole cricket *Neoscapteriscus didactylus* (Latreille, 1804) was found in 2019 in Saint Rose, Guadeloupe (West Indies). This is the first secured record for this French overseas department. Wear of some dactyls of the insect's foretibiae is presented.**Keywords:** Orthoptera, Gryllotalpidae, Mole cricket, *Neoscapteriscus*, Guadeloupe, wear and tear.

The Gryllotalpidae are present in most parts of the world with exception of Antarctica. By 2014, 107 species had been described and altogether four species are known from the West Indies (Frank & McCoy 2014). Some of them are rated as agricultural pests (e. g. Cadena-Castañeda 2015). The first leg pair is modified for digging with two to four fixed tibial dactyls. In addition, first and second tarsomeres of the first pair of legs are modified in ancillary dactyls (Cadena-Castañeda 2015; Frank & McCoy 2014). Different species are short- or longwinged (Cadena-Castañeda 2015; Kazemi et al. 2013).

An adult female of the long-winged mole cricket *Neoscapteriscus didactylus* (Latreille, 1804) was found dead on March 01, 2019 in Saint Rose, Basse Terre, Guadeloupe (West Indies) in the filter system of a swimming pool (geographic coordinates 16.17.52N, 61.43.24W) (leg., det. et coll. Jentzsch). In the surroundings there are single-family homes, cultivated gardens and rainforest remnants. The scientific name of the mole cricket is based on the phylogenetic and taxonomic framework proposed by Cadena-Castañeda (2015).

The question of whether this species has already been reported from Guadeloupe cannot be answered with certainty. Frank & McCoy (2014) presented a survey of the zoogeography of mole crickets from the West Indies and also mentioned Guadeloupe in this context, but with advice to the publication of Meurgey (2011). Meurgey (2011), for his part, based on the paper of Maros et al. (2005). But their work deals with identifying characteristics of *Scapteriscus* spp. as predators of marine turtle eggs and doesn't mention any area of Guadeloupe. This situation corresponds with the diagnosis given by Frank & Mc-

Coy (2014): "Given the small number of species of mole crickets in the West Indies, it is remarkable that so much confusion exists about their ... distribution." So, it is reasonable to assume that the record presented here is the first secured one for Guadeloupe, although this evidence was to be expected due to the dispersal pathway of this species (see figure 2 in Frank & McCoy 2014).

The mole cricket from Saint Rose shows an interesting wear of the first ancillary dactyl of the foreleg (Fig. 1). An apical loss of nearly one third of this body part on the left and one half on the right is clearly visible. The same phenomenon is to be seen on the first fixed tibial dactyl on the right and in immediate neighbourhood to the worn ancillary dactyl, but only in an initial stage (Fig. 2). The expression allows the conclusion that a breakage or other mechanical causes can be excluded. The assumption is obvious that this wear is related to digging by the insect. There is only one study dealing with wear and tear of dactyls of mole crickets. It shows that the dactyls of foretibiae of Iranian long-winged mole crickets were elongated and longer than short-winged morph's dactyls, and that they are suitable for excavating hard soil (Kazemi et al. 2013). *Neoscapteriscus didactylus* belongs to the long-winged mole crickets too, but data on the character of the soil at the habitat in the surrounding were not available and corresponding comparisons cannot be made. However, a wear and tear of chitin parts is always an expression of the age of an insect (e. g. Henderson & Southwood 2016; Southwood 1978) and studies about mouthparts of stream animals feeding showed that either the grazing animals are able to repair their mouthparts frequently, or their feeding apparatus is constructed in such a way that its effectiveness is guaran-



Figs 1-2 – *Neoscapteriscus didactylus* (Latreille, 1804). **1**, wear of the first ancillary dactyl of the left foreleg (red arrow), ventral view; **2**, wear of the first fixed tibial dactyl on the right foreleg (red arrow on the right), located in immediate neighbourhood to the worn first ancillary dactyl (red arrow on the left), ventral view. Scale bar: 1 mm (Figs 1-2).

teed for a long time despite the wear (Arens 1990). The latter applies to mole crickets too. For the present animal, the wear of both ancillary dactyls had already progressed and it continued with the fixed tibial dactyl in the immediate neighbourhood on the right. Whether such or similar order of wear and tear occurs in all members of this species, requires further observations.

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References

- Arens W. 1990. Wear and tear of mouthparts: a critical problem in stream animals feeding on epilithic algae. *Canadian Journal of Zoology*, 68, 1896–1914.
- Cadena-Castañeda O. J. 2015. The phylogeny of mole crickets (Orthoptera: Gryllotalpoidea: Gryllotalpidae). *Zootaxa*, 3985: 451–490.
- Frank J. H., McCoy E. D. 2014. Zoogeography of mole crickets (Orthoptera: Gryllotalpidae) in the West Indies. *Insecta Mundi*, 0331: 1–14.
- Henderson P. A., Southwood T. R. E. 2016. *Ecological Methods*. Blackwell Scientific Publications, Oxford, 656 pp.
- Kazemi M. H., Jafari S., Lotfalizadeh H., Jafarloo M. 2013. Wing dimorphism of European mole cricket *Gryllotalpa gryllotalpa* (L.) (Orthoptera: Gryllotalpidae) in the north-west Iran. *North-western Journal of Zoology*, 9: 45–50.
- Maros A., Louveaux A., Liot E., Marmet J., Girondot M. 2005. Identifying Characteristics of *Scapteriscus* spp. (Orthoptera: Gryllotalpidae) Apparent Predators of Marine Turtle Eggs. *Environmental Entomology*, 34: 1063–1070.
- Meurgey F. 2011. Les Arthropodes continentaux de Guadeloupe: Synthèse bibliographique pour un état des lieux des connaissances. Rapport SHNLH pour le Parc National de Guadeloupe, 184 pp. – Available on-line at: <http://shnlh.org/resources/etudes/entomologie/Arthropodes%20continentaux.pdf>
- Southwood T. R. E. 1978. *Ecological Methods: With Particular Reference to the Study of Insect Populations*. Chapman and Hall, London, pp. i-xviii + 391.