

CASE REPORT

# First Reported Case of Fatal Stinging by the Large Carpenter Bee *Xylocopa tranquebarica*



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In the order Hymenoptera, bees, hornets, and wasps are well-known stinging insects whose envenoming can be fatal. Their stinging attacks are common in rural and forested areas of Sri Lanka. However, fatal stinging by the large-bodied carpenter bees is unreported. We report the first known case of a fatal sting by the large carpenter bee, *Xylocopa tranquebarica*, in a forested area in Puttalam (North Western Province) in the dry zone of Sri Lanka. A 59-year-old healthy male manual laborer accompanied by a fellow worker had been fixing a fence on a coconut estate bordering a forested area when a flying insect emerged from a dead tree trunk and stung him on his face. His coworker, who was watching the incident, killed the insect. The victim complained of immediate intense pain in the face and collapsed on the ground just after resuming work after 10 minutes of resting. He was found dead on admission to the hospital 90 minutes later. Autopsy showed normal coronary arteries and heart, but the lungs were slightly congested and contained secretions in the bronchi. Acute anaphylaxis was the most likely cause of death. This case presents the habitat, morphology, attack pattern, and the medical importance of large carpenter bees.

**Key words:** carpenter bees, *Xylocopa tranquebarica*, stinging, fatalities, anaphylaxis, Sri Lanka

## Introduction

In the class Insecta, members of the order Hymenoptera are best known for their role in pollination, biological control of insect pests, and as stinging insects. Of the Hymenoptera, bees, hornets, and wasps in particular are distinct and unique in having a modified ovipositor as a stinger that acts in association with a venom gland. Stinging attacks by bees and wasps on humans have become a common occurrence in Sri Lanka.<sup>1–3</sup> In 2014, a fatal sting from a flying insect in Puttalam in the North Western Province of Sri Lanka gained much publicity in the local media. This incident, reported in the local newspapers and social media, prompted us to find the offending insect that was killed by the victim's companion.

Bees of the world are classified into 7 families. Bees belonging to 4 of these families, namely, Colletidae,

Halictidae, Megachilidae, and Apidae, occur in Sri Lanka. Sri Lanka is home to 148 species of bees in 38 genera that come under these 4 families.<sup>4</sup> Family Apidae in Sri Lanka is represented by several subfamilies, genera, and subgenera. The large majority of bees that are classified under the 4 families are the little-known pollen bees. The taxonomy and natural history of temperate pollen bees is well documented.<sup>5</sup>

Family Apidae also includes the subfamily Xylocopinae, an assemblage of very diverse pollen bees, among which is the tribe Xylocopini, represented by the single genus *Xylocopa*. Michener defined the principal identifying characteristics of the Xylocopini and genus *Xylocopa*, which are usually large to very large robust bees easily confused with temperate bumble bees.<sup>6</sup> Several subgenera of the genus *Xylocopa* occur the world over, both in the Western and Eastern hemispheres, but no subgenus is common to both hemispheres. One of the subgenera of *Xylocopa* is the subgenus *Nyctomelitta* (Cockerell, 1929), confined to the Eastern hemisphere. The subgenus is represented by 2 species, namely *Xylocopa (Nyctomelitta) proximata* (Ma, 1938) and

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*Xylocopa (Nyctomelitta) tranquebarica* (Fabricius, 1804). The former species is known from the Andaman Islands. The latter species, *X. tranquebarica*, is known to have a paleotropical distribution and occurs from Sri Lanka to India, Sumatra, and Borneo, and from Java to Thailand and Laos. *Xylocopa* species of the subgenus *Nyctomelitta* are nocturnal.

## CASE REPORT

Written consent for publication of this case history was obtained from the wife of the deceased patient.

We investigated the incident of a fatal case of insect stinging that appeared in a local newspaper in September 2014. The deceased was a 59-year-old man, a manual laborer by profession, from Puttalam, in the North Western Province of Sri Lanka. On the fateful day the victim, accompanied by a fellow laborer, had left at approximately 0730 hours to work on a coconut estate in a remote place called Adapana Willuwa, south of Puttalam. The site is located 2 km away from the nearest road that is accessible by automobile. Their task was to fix the fence bordering the estate and the adjoining forested area. At approximately 0830 hours, while clearing the bushes next to a dead tree trunk (later found to be inhabited by insects), he suddenly called for help, saying some insects were flying around his head trying to sting him. By the time the companion reached the victim, he had been stung on the face by the insect in the right malar region, and the bee remained attached to the skin. The companion slapped the insect with a piece of cloth and killed it. The victim complained of intense pain in the face and rested for approximately 10 minutes, then started to work again. After a few minutes, while he was cutting bushes, he felt faint and complained of shortness of breath, sat on the ground, and then collapsed. His companion called for help and sent a message to the patient's wife, who arrived at the scene 30 minutes later. She found him on the ground and unresponsive. Helpers then carried him to the road from which he was transported by automobile to the Base Hospital, Puttalam. The patient was brought to the hospital at approximately 1000 hours, where he was pronounced dead on arrival. The spouse of the patient denied any history of allergies or past hymenoptera stings in her deceased husband. They had also taken the offending insect to the hospital and had handed it over to the Judicial Medical Office (JMO) who performed the postmortem examination of the deceased person. The JMO noted the stinging site, a punctum with fresh bleeding on the right malar area. The heart and all coronary arteries were normal. The upper airway was normal, but the lungs were slightly

congested and had secretions in the bronchial tree. The rest of the organs were normal.

The offending insect was brought to the entomologist in the Department of Zoology, University of Peradeniya, for identification; it was curated, identified, cataloged, and deposited in the reference collection. At the request of the entomologist, the JMO visited the coconut estate where the stinging took place, a few days after the incident. He located the dead tree trunk, later found to be inhabited by the suspected insect (Figure 1). A team of workers cut open part of the trunk and found approximately 5 live insects inside the burrows. The insects were not aggressive at that time and were collected into a container and brought to the Department of Zoology for identification. The offending insect and those brought later from the same location were identified as *X. tranquebarica* and were sexed, measured (body length ranged from 25 to 27 mm), and photographed (Figure 2). At the time it was brought to the university, the offending *X. tranquebarica* was not in fresh condition to be mounted. It was a female with



**Figure 1.** Dead tree trunk with nest entrance holes from where the killer bee, *Xylocopa tranquebarica*, emerged.

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