

Xyleborus bidentatus (Motschulsky, 1863), a Newly Discovered Ambrosia Beetle in Mangrove Forests of Southern Iran (Coleoptera: Curculionidae: Scolytinae)

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SCIENTIFIC NOTE

***Xyleborus bidentatus* (Motschulsky, 1863), A NEWLY DISCOVERED AMBROSIA BEETLE IN MANGROVE FORESTS OF SOUTHERN IRAN (COLEOPTERA: CURCULIONIDAE: SCOLYTINAE)**

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The Xyleborini LeConte, 1876 are the largest group of scolytines (Coleoptera, Curculionidae, Scolytinae) with over 1,300 species (Ruzzier *et al.* 2022). This group, known as ambrosia beetles, has a worldwide distribution with the highest diversity in tropical and subtropical regions. They are haplodiploid and polyphagous. Adult females bore tunnels into the xylem of trees and make galleries to raise their brood. The adults and larvae cultivate symbiotic fungal gardens within the tunnels. These beetles are responsible for wood degradation and considered among the most important pests in tropical and subtropical forest ecosystems (Silva *et al.* 2020; Smith *et al.* 2020).

The xyleborine genus *Xyleborus* Eichhoff, 1864 occurs widely in temperate and tropical regions worldwide (Smith *et al.* 2019, 2020). Twenty-two species of *Xyleborus* are currently recorded from the Palearctic region (Alonso-Zarazaga *et al.* 2023; Smith *et al.* 2020) and three species, *Xyleborus dryographus* (Ratzeburg, 1837), *Xyleborus eurygraphus* (Fabricius, 1792) are reported from northern and northwestern Iran, and from Fabaceae, *Pinus* (Pinaceae) and broadleaf hosts, respectively (Amini *et al.* 2020; Beaver *et al.* 2016).

Xyleborus bidentatus (Motschulsky, 1863) (Fig. 1) is recorded for the first time from the mangrove ecosystem in Hormozgan Province in southern Iran,

new country record (Figs. 2, 5). The specimens were collected in mangrove habitat by light trap, and in one site, captured in an ethanol-baited trap among the five ethanol-baited traps that were installed on the trees 5–10 m apart (Figs. 3, 4). Scolytines have not been reported from Hormozgan Province (Amini *et al.* 2020; Beaver *et al.* 2016) and no additional scolytine species were collected in the mangrove habitat. Rashvand and Sadeghi (2014) previously reported scolytine damage in mangrove trees in Bushehr Province but adults were not found. It is possible that these galleries were created by *X. bidentatus* as well.

The common trees of mangrove forests in southern Iran consist of *Avicennia marina* (Forssk.) Vierh. (Acanthaceae) and *Rhizophora mucronata* Lam. (Rhizophoraceae). The species community in Hormozgan Province is dominated by *A. marina* (Rashvand and Sadeghi 2014). However, there is a unique mangrove forest habitat in Sirik where *R. mucronata* communities are dominant (Daneshkar *et al.* 2010).

Specimens Examined. IRAN: Hormozgan prov., Bandar-e Khamir, ca. 2 km SE Bandar-e Khamir, Persian Gulf, Mardu Isl., mangrove swamp, Hara P. A., N 26°58'33.0", E 55°40'25.0", 3 m, 29–30.X.2021, leg. H. Nasserzadeh (ethanol-bait trap) (2 exs.); Hormozgan prov., Qeshm Isl., Gevarzin, Harra P. A., mangrove forest,



Fig. 1. *Xyleborus bidentatus*, dorsal (left) and lateral (right) habitus.



Fig. 2. Mangrove forest, Mardu Island, Iran.

N 26°49'6.0", E 55°47'39.0", 0 m, 2.XI.2021, leg. H. Nasserzadeh (light trap) (3 exs.); Hormozgan prov., Qeshm Isl., Gevarzin, Harra P. A., mangrove forest, N 26°48'39.0", E 55°46'38.0", -20 m,

3.XI.2021, leg. H. Alipanah, H. Falsafi (light trap) (2 exs.); Hormozgan prov., Sirik, Rud-e Gaz P. A., Khur-e Azini, Azini Island 2, mangrove swamp, N 26°19'24.3", E 57°05'43.3", 0 ± 5 m, 14.X.2022, leg. H. Alipanah, H. Falsafi, M. Mofidi (65 exs.); Hormozgan prov., Minab, Kolahi protected mangrove swamps, N 27°02'39.69", E 56°51'26.9", 0 ± 5 m, 10.V.2022, leg. A. Hajesmailian, M. Mofidi (light trap) (9 exs.). All specimens are deposited in Hayk Mirzayans Insects Museum (HMIM) in Tehran, Iran.

World Distribution. Australian Region: Australia, "Caroline Islands", Federated States of Micronesia (Kosrae I.), Republic of Palau, Papua New Guinea (Bismarck Is.), Solomon Is. Oriental Region: "Borneo", India (Andaman Is., Nicobar Is., West Bengal), Indonesia (Java, Sulawesi, Maluku, Sumatra, Sumbawa), East and West Malaysia, Myanmar, Philippines, Singapore, Taiwan, Thailand, Vietnam. Palearctic Region: Iran (Hormozgan Province) (**new record**). Afrotropical



Figs. 3–4. Traps in mangrove forest, Mardu Island, Iran. 3) Light trap; 4) Ethanol-baited trap.

Region: Kenya, Madagascar, Mozambique, Tanzania (Smith *et al.* 2019, 2020; Wood 1960; Wood and Bright 1992).

Xyleborus bidentatus is distinguished from other Iranian *Xyleborus* by the following combination of characters: body length 3.4–3.5 mm; eye almost entire; pronotum quadrate with median area of frontal margin conspicuously produced anteriorly and bearing a row of prominent serrations; protibia triangular, broadened on apical third; elytral apex acuminate with two prominent spines on the posterior elytral slope (Smith *et al.* 2019, 2020).

Xyleborus bidentatus is polyphagous (Wood and Bright 1992). The littoral habitat of the species and its association with mangrove trees has been previously reported (Browne 1966; Maiti and Saha 2004; Murphy and Meepol 1990). The discovery of the species is surprising given that the closest known population of *X. bidentatus* is either Kenya to the southwest or along the Bay of Bengal to the east, both at least 3,500 km away. It is unclear at this time whether this species has been newly introduced to the Palearctic region or is part of a historically undiscovered population. Given this species' known association with mangroves it is presumably utilizing them as hosts but use of other tree species is possible. Further studies and extractions of

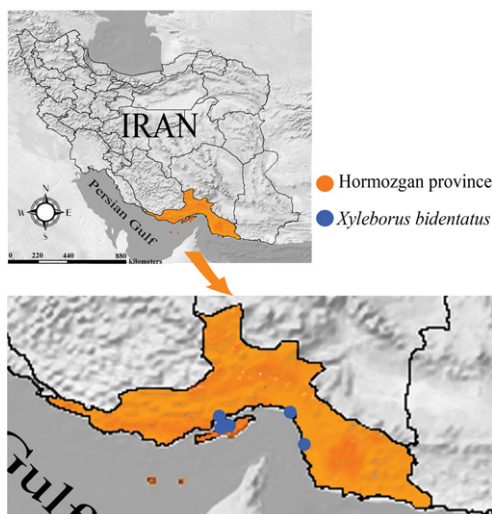


Fig. 5. Distribution map of *Xyleborus bidentatus* in Iran.

specimens from *Avicennia* spp. or *Rhizophora* spp. will confirm the host use by *X. bidentatus* in Iranian mangrove forests.

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