Specimen

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First record of the genus *Xestophanes* Förster, 1869 (Hymenoptera: Cynipidae) in northern Africa

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INTRODUCTION

The family Cynipidae *sensu lato* (Hymenoptera) are 1,700 species of gall-inducing and gall-usurping wasps or inquilines (Buffington et al 2020). Historically, taxonomists assumed there was single origin of inquilinism within the gall wasps, partially due to the assumed morphological synapomorphy of the syntergite, a fusion of tergites 2 + 3 in adult females; but their evolutionary history was proven to be much more complex in contemporary molecular phylogenetic analyses (Ronquist et al. 2015). One taxon that threw a wrench in this scheme is the genus *Xestophanes* Förster, 1869, a gall inducer on herbaceous cinquefoils (Rosaceae: *Potentilla* L.); this genus has a syntergite, despite being a primary gall inducer. The three species of *Xestophanes* are members of the tribe Diastrophini, a lineage of both gall inducers and inquilines associated with the plant family Rosaceae (Melika 2006). Ronquist et al. (2015) recovered *Xestophanes* as sister to the inquilinous genus *Synophromorpha* Ashmead, which together are sister to the gall-inducing *Diastrophus* Hartig. As a result, understanding the biology and evolution of this genus is especially significant in revealing the number of transitions between inquilinism and gall induction in the Diastrophini. *Xestophanes* is widespread throughout Europe, ranging from Scandinavia to the Mediterranean, with *X. potentillae* Retzius being widespread, *X. brevitarsis* Thomson being uncommon, and *X. caspianus* Liu being known only from its type series. Here, we report the first record of *Xestophanes*, and the Diastrophini, in Northern Africa in Ourigane, Morocco based on a specimen discovered in the ethanol collection of the Canadian National Collection of Insects, Arachnids, and Nematodes.

RESULTS AND DISCUSSION

Diagnosis and Morphology. *Xestophanes* can be separated from other Diastrophini genera by the following combination of characters: having females with 13 antennomeres, a weakly lobed tarsal claw, metasomal tergites 2+3 entirely fused into a syntergite, and a partially closed marginal cell. *Xestophanes potentillae* can be further diagnosed based on the incomplete notauli (only distinct for ⅓ of its length posteriorly), flagellomere 1 and 2 of equal length, and a hind tarsomere 4 that is longer than wide. The series from Morocco varied from Melika's description of *Xestophanes potentillae* in having placodeal sensilla starting on flagellomere 4, lacking distinct anterior parallel lines, and having a different head shape. We identified them as closest to X*estophanes potentillae* using the key to species provided by Melika (2006), where he notes variation within species of *Xestophanes*. From material we have examined, as well as the type series for *Xestophanes brevitarsis* and synonyms of *X. potentillae*, the characters seem reliable for diagnosis. However, the individuals from Morocco vary from Melika's description of *X. potentillae* in having placodeal sensilla from flagellomere 3 to 11 (placodeal sensilla from flagellomere 2 to 11 in Melika 2006), a large areolet (typically lacking areolet in Melika 2006), a subquadrate face (subcircular face in Meila 2006), and lacking parapsidal grooves (parapidal grooves indistinct in Melika 2006).
Remarks. *Xestophanes potentillae* is reported from 10 *Potentilla* species, 4 of which are also reported for *X. brevitarsis* (Melika 2006). Given the host specificity of other Diastrophini genera, such as *Diastrophus* (Nastasi et al 2021, Nastasi et al 2025), alongside the conspicuous morphological variation presented in descriptions of *Xestophanes* species (Nieves-Aldrey 1994, Melika 2006), it is unlikely these species are truly generalists. Instead they may represent complexes of multiple species with narrower host compatibility. Given the amount of variation between specimens, *Xestophanes* is in need of a revision that incorporates integrative taxonomic concepts based on genetic, ecological, and morphological data across the range of *Xestophanes*. With the discovery of *Xestophanes* in Morocco, we expand the range of the species complex beyond Europe and into Northern Africa. The African Plant Database has records of *Potentilla reptans* in Morocco, Tunisia, and Ethiopia. The Mediterranean reaches the shores of Morocco as well as several European countries in which *Xestophanes* species are known. It is likely that these populations (Europe and Northern Africa) have been separated by natural events such as glaciation. Whether or not this series of specimens is a distinct species from its congeners is dependent on rearing material from galls with known hosts, genetic species delimitation, and further morphological examination. Our discovery emphasizes the need for revision of *Xestophanes* and indicates an additional region in need of sampling for future studies investigating this peculiar gall maker.

MATERIAL

Material examined. 2 ♀ Morocco: Marrakech: Ouirgane 1000m 31.133333, -8.083333 22–28 September 1996 C.F. Kassebeer; collected in Malaise trap CNC2133444 & 2133445. 4 ♀ collected 28 September–4 October 1996, C.F. Kassebeer; collected in Malaise trap CNC2133439-2133442. 1 ♀ (Figure 1) collected 4–11 October 1996, C.F. Kassebeer; collected in Malaise trap, CNC2133443. Specimen data available at https://doi.org/10.5886/8rkwzs

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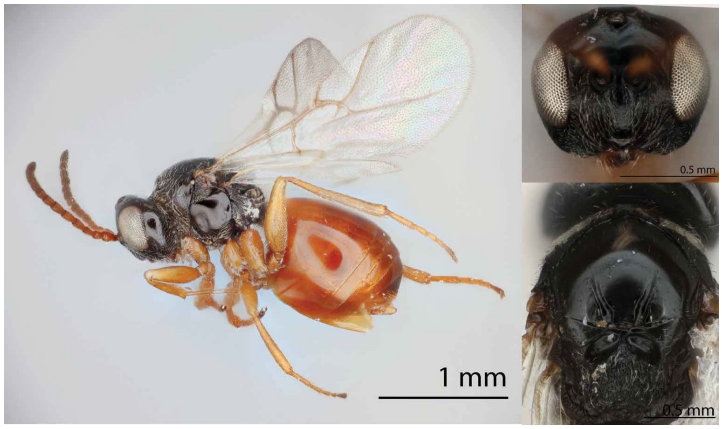

Figure 1: Left: Dorsal habitus of *Xestophanes* specimen CNC2133443. Upper right: Frontal face of specimen CNC2133443. Lower right: Dorsal mesosoma of specimen CNC2133443.