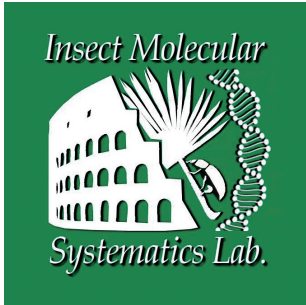




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## The alien species *Phenolia (Lasiodites) picta* (Macleay, 1825) in Sardinia (Coleoptera: Nitidulidae)

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### Abstract

The Oriental and Eastern Palaearctic species *Phenolia picta*, recently introduced into some countries of the Mediterranean Basin, including S France and S Italy (Sicily), is here reported for the first time from Sardinia.

**Keywords:** *Phenolia picta*, Sardinia, alien species, chorology.

### Introduction

The genus *Phenolia* Erichson, 1843 presents a wide, mostly palaeotropical distribution, including several described and undescribed species (Kirejtshuk & Kvamme 2002); two allochthonous species have been recently listed also from Europe: *P. tibialis* (Boheman, 1851) and *P. picta* (W.S. Macleay, 1825) (Jelínek et al. 2016; Soldati et al. 2019). *Phenolia picta* is an invasive species, originating from SE Palaearctic and NE Oriental areas; its present-day distribution covers some islands east of the Ethiopian region (Madagascar, Mauritius, Nosy Be, Reunion, and Seychelles), the Australian and Indomalayan regions, the eastern Palaearctic zone (including Korea, China, Japan, and Pakistan), Hawaii, and it is probably also present in Polynesia (Kirejtshuk & Kvamme 2002; Montagud & Orrico 2015). *Phenolia picta* has been observed as actively spreading in most recent years also throughout the Mediterranean Basin: particularly this species has been introduced into Spain, France, Greece, Turkey and Italy (Sicily) (Jelínek et al. 2016; Sparacio et al. 2020). This species is here reported for the first time from Sardinia.

#### Acronyms of specimen depositories:

**CAR:** P. Audisio collection, Rome, Italy;

**CBR:** A.B. Biscaccianti collection, Rome, Italy;

**CRC:** Collezione Ruzzante Cagliari, Italy.

**Material examined. Italy, Sardinia:** Cagliari, Quartu Sant’Elena, Pitz’e Serra, 39.14.16N, 9.12.18E, 10 m, 19 Sep 2018, R. Rattu leg., 1 ex, at uv light, (CGR); *ibidem*, 11 Aug 2020, R. Rattu leg., 1 ex, at uv light (CGR); *ibidem*, 10 Sep 2020, R. Rattu leg., at uv light, 2 exx (CGR); South Sardinia (SU-Sud Sardegna), Domus de Maria, P.ta su Pisu, 38.53.38N, 8.51.11E, 30 m, 7 Nov 2020, G. Ruzzante leg., at light, 1 ex (CGR); South Sardinia (SU-Sud Sardegna), Selegas, Riu S. Mauro, m 275, 12 Jun-24 Jul 2020, pitfall traps, A.B. Biscaccianti, E. Giuliano Grimaldi leg., 10 exx (CBR, CAR); *ibidem*, 24 Jul-27 Aug 2020, pitfall traps, A.B. Biscaccianti, E. Giuliano Grimaldi leg., 4 exx (CBR); South Sardinia (SU-Sud Sardegna), Selegas, loc. Baugodi, 284 m, 12 Jun-24 Jul 2020, pitfall trap, A.B. Biscaccianti, E. Giuliano Grimaldi leg., 1 ex. (CBR).

#### Native range, invasion history, records in Europe.

*Phenolia picta* is native to Oriental and Palaeotropical areas (Jelínek & Audisio 2007). Populations of *P. picta* have been reported in Europe since 2014 (Viñolas et al. 2014, as *P. limbata tibialis*), likely accidentally introduced with tropical and subtropical fruits. However, the year of detection does not necessarily correspond to the year of introduction, as it may take several years after introduction before the first signs of the infestation are detected. In Europe, reproductive populations have been detected thus far in some Mediterranean countries

including S France - 2014 (Jelínek et al. 2016), Spain - 2014 (Viñolas et al. 2014), Greece - 2018 (Kalaentzis et al. 2019), and Italy (Sicily) - 2019 (Sparacio et al. 2020).

**Biology, vector of dispersal and invasion status in Sardinia.** Beetle family Nitidulidae displays a comparatively broad spectrum of feeding habits and life strategies. Some saprophagous species seem to be preadapted for life in the anthropogenic habitats like orchards and plantations, feeding on ripening and rotten fruits. In Sardinia, population has been detected in coastal zones, in peri-urban environment and in the coastal Mediterranean bush; in fact, Ruzzier et al. (2020) noted that most of the exotic species recently found in Italy have been captured in the natural environment already, where they probably exhibit stable populations (Biscaccianti et al. 2014; Clark et al. 2014; Zappi 2014; Salvato & Uliana 2016; Forbicioni 2019; Ruzzier & Colla 2019). As regards the pathway of introduction of this species in Sardinia, we can only hypothesize that this species may have been introduced at the larval and/or adult stage in association with some commodities such as tropical fruits. This species, which may have colonized the Sardinia in recent past, could still be in the acclimatization phase since the first specimens were collected between 2018 and 2020. It should be noted that an apparently consistent population of the species has been able to colonize an area of the inner Sardinia, very far from the coast (municipality of Selegas, in the eastern Campidano, see above), characterized by an extensive environmental matrix predominantly of agricultural and grazing vocation.

**Economic impact.** Despite its relatively large size (5-9 mm in length), in Europe *P. picta* does not appear to represent an economically important pest. In fact, as for several other introduced Carphophilinae, Epuraeinae, and Cillaeinae, *P. picta* mostly attacks ripening fruits fallen on the soil (Audisio 1993; Mutinelli et al. 2015). In Italy, only some (mostly allochthonous) species of Nitidulidae provided thus far important attacks to ripening fruits or vegetables, mostly concentrated in the first years following their introduction (Audisio 1985, 1990, 2002; Ratti 2007; Marini et al. 2013; Audisio et al. 2014; Mutinelli et al. 2015; Jelínek et al. 2016).

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