



Department  
for Environment  
Food & Rural Affairs

# Plant Pest Factsheet

Palm borer

## *Paysandisia archon*

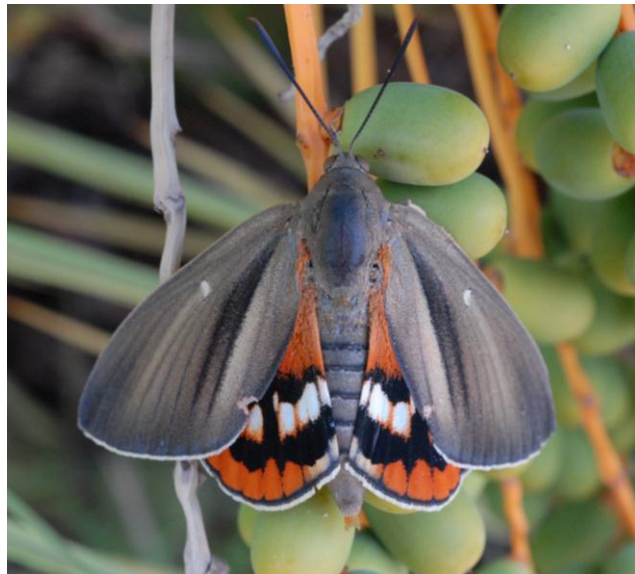


Figure 1. Adult *Paysandisia archon* © J.C. Streito, LNPV-Entomologie, Montpellier (FR)

## Background

In August 2002, a large adult moth was observed in a private garden in West Sussex. Martin Honey (Natural History Museum, London) confirmed its identification as the South American palm borer *Paysandisia archon* Burmeister (Lepidoptera: Castniidae). This was the first discovery of this non-indigenous pest in the UK. In May 2007, nine live adult *P. archon* moths were discovered in the atrium of an office building in West Malling, Kent. The moths had emerged from four 5 m tall *Phoenix canariensis* palms imported from Spain in October 2006. Currently listed in EC Directive 2000/29/EC as a IIAll pest, and on the EPPO A2 list of pests recommended for regulation as quarantine pests, this serious pest of palms is established in parts of southern Europe. The UK is currently (February 2016) seeking EU Protected Zone (PZ) status for this pest.

## Geographical Distribution

*Paysandisia archon* is native to South America (Argentina, Brazil, Paraguay and Uruguay), where it inhabits extensive open areas where wild palms grow. It has spread to southern Europe where it has become a serious threat to many ornamental palm species. It was first discovered in Spain (Girona) and France (near Hyères) in 2001 and has since spread to other regions. It is now recorded as present in Spain, Italy, France, Cyprus, Greece, Slovenia and Croatia. As of 2014, there were outbreaks of *P. archon* under eradication, in Bulgaria, the pest had been eradicated from the Czech Republic, Denmark and the UK and there had been reports of the pest in Belgium where no action was taken to eradicate it. It is suspected that *P. archon* was first introduced to Europe between 1992 and 1998 on *Butia yatay* and *Trithrinax campestris* plants imported from Argentina.



**Figure 2.** Larva of *Paysandisia archon* ©UK Crown Copyright - courtesy of FERA



**Figure 3.** *Paysandisia archon* pupa ©Victor Sarto i Monteys, Servei de Protecció dels Vegetals, Bugwood.org



**Figure 4.** "Sawdust plugs" ejected at the outside of the gallery by the larva of *Paysandisia archon* © insectarium virtual



**Figure 5.** A *Paysandisia archon* cocoon within a gallery © insectarium virtual



**Figure 6.** Damage to *Phoenix dactylifera* leaves caused by larval feeding © insectariumvirtual.com



**Figure 7.** Typical damage caused by the larvae of *Paysandisia archon* on a leaf of *Washingtonia filifera* © insectariumvirtual.com

## Host Plants

*Paysandisia archon* only attacks members of the palm family (Arecaceae), but feeds on numerous species within the family. In Spain and France, the moth appears to have a large range of palm hosts, including, *Chamaerops humilis*, *Livistona chinensis*, *L. decipiens*, *L. saribus*, *Phoenix canariensis*, *P. dactylifera*, *P. reclinata*, *Sabal* spp., *Trachycarpus fortune*, *Trithrinax campestris* and *Washingtonia filifera*. Other recorded host genera are *Brahea*, *Butia*, *Jubaea* and *Syagrus*.

## Description

The adult is a large and beautiful moth, with a wingspan of 9-11 cm. The fore-wings are olive brown and the hind-wings are brightly coloured with red, black and white (Fig. 1). The females are slightly larger than the males and are easily recognised by their large ovipositor. Eggs are oblong, 5 mm long and cream coloured with longitudinal ribs. Newly emerged larvae are pink in colour, less than 1 cm long and turn white as they develop (Fig. 2). The larvae reach 6-7 cm by the final instar.

## Biology

Eggs are laid on the palm stem near the growing point and, after hatching, the young larvae bore into the stem and new leaves. The mature larvae produce large galleries in the core of the stem. Pupation takes place within the gallery inside a cocoon made of plant fibres (Fig. 3). In France, adults are observed from mid-May to September and they are active during the day. The males are very territorial and fly repeatedly over rather small areas, returning to the same perching place. It is probable that this species has a biannual life cycle, but more data is needed on the biology of this insect.

## Dispersal and Detection

*Paysandisia archon* can be introduced to new areas by the commercial import of infested palms, the movement of palm trees with passengers and by natural spread, as the adult is a very powerful flier (indirect data indicates they can travel at least 25-30 km from where they emerged).

Except for the period when the adults are flying, it is difficult to detect the presence of the pest. During the larval stage the only sign may be the presence of plugs of debris (Fig. 4), like sawdust, visible at the outermost extremity of the gallery. Heavily infested palms may show dieback or even die.

## Economic and Environmental Impact

Larvae bore galleries through the stem or young leaves, causing characteristic damage (Figs 5 - 7). This results in retarded growth and/or deformation of the crown. Heavily infested palms often die as a consequence of the larval attack. Serious damage and plant mortality are reported in ornamental palm nurseries in southern Europe. In the Languedoc-Roussillon region of France, 80-90% of *Trachycarpus fortunei* were lost between 2002 and 2012. Trade movement of palm trees within the EU, mostly for ornamental purposes, is a risk to more northern European countries where the pest is not yet established and could over-winter under glass. For this reason, the UK is currently seeking Protected Zone status against this pest.

*Paysandisia archon* poses a threat to the two palm species native to Europe, *Chamaerops humilis* (a species protected in parts of Spain) and *Phoenix theophrasti* (registered on the IUCN Red List of Threatened Species). It could also be a threat to the subtropical species *Phoenix canariensis* which is native to the Canary Islands.

## Advisory Information

Suspected outbreaks of *P. archon* or any other non-native plant pest should be reported to the relevant authority:

For **England and Wales**, contact your local **APHA Plant Health and Seeds Inspector** or the **PHSI Headquarters**, Sand Hutton, York. Tel: 01904 405138

Email: [planthealth.info@apha.gsi.gov.uk](mailto:planthealth.info@apha.gsi.gov.uk)

For **Scotland**, contact the **Scottish Government's Horticulture and Marketing Unit**:

Tel: 0131 244 8935 Email: [hort.marketing@gov.scot](mailto:hort.marketing@gov.scot)

For **Northern Ireland**, contact the **DARD Plant Health Inspection Branch**:

Tel: 0300 200 7847 Email: [planthealth@dardni.gov.uk](mailto:planthealth@dardni.gov.uk)

For additional information on UK Plant Health please see:

<https://secure.fera.defra.gov.uk/phiw/riskRegister/>

<https://www.gov.uk/plant-health-controls>

<http://www.gov.scot/Topics/farmingrural/Agriculture/plant/PlantHealth/PlantDiseases>

<https://www.dardni.gov.uk/>

## Authors

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