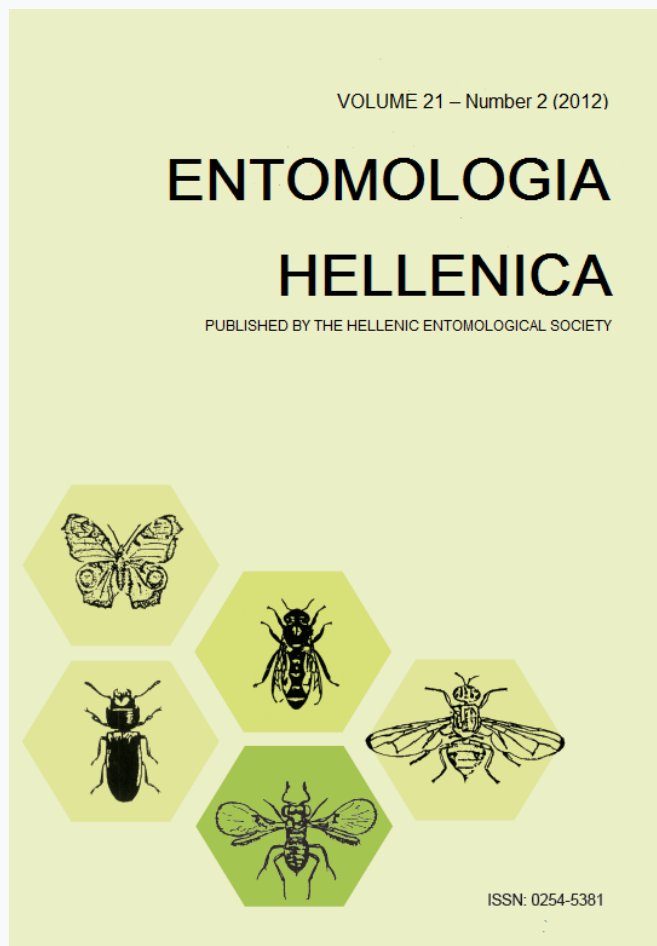


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**First report of *Paysandisia archon* on *Phoenix theophrasti****Kostas Niamouris, Panagiota Psirofonia*doi: [10.12681/eh.11520](https://doi.org/10.12681/eh.11520)

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## SHORT COMMUNICATION

**First report of *Paysandisia archon* on *Phoenix theophrasti*****KOSTAS NIAMOURIS AND PANAGIOTA PSIROFONIA\****Laboratory of Agricultural Pharmacology, School of Agricultural Technology, Technological Educational Institute of Crete, PO BOX 1939, 71004 Heraklion Crete, Greece***ABSTRACT**

In March 2012 *Paysandisia archon*, Lepidoptera: Castniidae, a palm tree pest, was found for the first time in the endemic palm species of Crete *Phoenix theophrasti*. The infestation was detected in the premises of the Technological Educational Institute in Heraklion, Crete. Information on its biology, morphology and distribution is given.

**KEY WORDS:** cretan palm, invasive species, *Paysandisia archon*, *Phoenix theophrasti*.

The palm *Phoenix theophrasti* is a native palm species in eastern Mediterranean. It has a slow growing rate (much slower than *Ph. canariensis*); lower humidity levels in the trunk, many offshoots (a typical characteristic of the species) and can grow up to 15 m tall. The leaves are 2-3 m long, with many small long leaflets. The colour of the leaflets is greyish-green (also another characteristic of the palm) (Surhone 2011).

This palm species is mostly found in Greece, mainly on the islands of Crete, Amorgos and Anafi and also in Peloponnese in smaller numbers. Many palm trees exist in Agios Nikitas in Heraklion, Crete; gorge Preveli in Souda near Plakias, as well as in various locations in coastal areas of the Prefecture of Rethymnon. By far, the largest number exists in the palm forest of Vai in Crete. Vai has a tremendous value for Greece and is probably the only naturally grown palm forest in Europe. It covers an area of 200 dunum (or 20

hectares) and it consists solely of *P. theophrasti* (Surhone 2011).

**The palm pest *Paysandisia archon*:** *Paysandisia archon* (Burmeister, 1880) (Lepidoptera: Castniidae) has been introduced to Europe accidentally from Argentina, where it became a serious pest for palm trees. In the Mediterranean region, the pest has been reported in Greece, Cyprus, Spain, Italy and France (Vasarmidaki et al. 2006).

**Host Plants:** *Butia yatay*, *Chamaerops humulis*, *Latania*, *Livistona chinensis*, *L. decipiens*, *L. saribus*, *Phoenix canariensis*, *P. dactylifera*, *P. reclinata*, *Sabal*, *Trachycarpus fortunei*, *Trithrinax campestris*, *Washingtonia* (EPPO 2008).

**Morphology:** The egg has a fusiform shape measuring from 4.4 – 5.2 mm with six to eight longitudinal ridges. At first, the egg has a pink-brown color and slowly gets darker. The larva has 9 different instars during which its size grows greatly reaching about 6-7 cm (max 9 cm) at the last instar. Initially it is pink and gradually turns pale yellow. Pupa is yellow in the early stages and brown – red towards the end of the stage. Adult is a large moth with a wingspan of 9 - 11 cm. The front wings are

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brown – green and the back are orange with black spots with a white dot in the centre of each spot. It has club – like antennas and distinct ovipositor.

**Bio–ecology and damage:** Larvae bore galleries within palm stems, also infesting the offshoots leading to serious damage and occasionally to the plant's death. Females lay their eggs near the growing point of the palm, while young larvae start to bore galleries within the offshoot or the trunk (EPPO 2008). The larval development lasts 1-2 years; adults appear mostly during May-August with their peak observed in July. They are active during day time. Eggs are laid close to the palm crown usually singly and rarely in groups. The last larval instar is the most destructive. At the 9<sup>th</sup> instar the larva constructs a pupal case out of fibers from the palm tree where it enters the pupal stage (EPPO 2008).

**First report of *P. archon* infestation in *Ph. theophrasti*:** Until recently there was no recorded infestation of *P. archon* in *Ph. theophrasti*, despite the fact that the insect has been introduced in Greece since 2006 and has infested other palm species since then (*Chamaerops humilis*, *Washingtonia robusta* and *Trachycarpus fortunei*), (Vasarmidaki et al. 2006). On March 2012, *P. archon* was found in a single palm tree of the *Ph. theophrasti* in the premises of the Technological Educational Institute of Crete (Lat. 35.31688, Long. 25.105305). Three offshoots of the palm tree were totally destroyed by the pest, while the larva itself was found in the fourth one. Only one 6<sup>th</sup> -7<sup>th</sup> instar larva was found between the fourth offshoot and the main trunk.

One month later, the insect was found in at least two other palm trees of the same species adjacent to the first one. The insect destroyed three offshoots from

the first palm tree and one from the second one. Larvae were found deep in the offshoot near the point where it grows, practically inside the main trunk. It was confirmed that the infested palm trees were grown from seeds extracted from the palm forest of Vai.

**Conclusion:** The Vai forest represents a unique ecosystem for Greece and Europe. The invasion of an insect like *P. archon* could mean its end. Although the infestation described above can be characterized as an isolated event, (no other infestations have been reported so far) the possibility of the insect reaching Vai must be taken into account.

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**Πρώτη καταγραφή του εχθρού των φοινικοειδών *Paysandisia archon* (Lepidoptera: Castniidae) επί του ελληνικού ενδημικού είδους *Phoenix theophrasti***

**ΚΩΝΣΤΑΝΤΙΝΟΣ ΝΙΑΜΟΥΡΗΣ ΚΑΙ ΠΑΝΑΓΙΩΤΑ ΨΕΙΡΟΦΩΝΙΑ**

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**ΠΕΡΙΛΗΨΗ**

Ο φοίνικας του Θεόφραστου ή κρητικός φοίνικας, ή φοίνικας του Βάι (*Phoenix theophrasti*) είναι ένα ενδημικό είδος φοίνικα στην ανατολική περιοχή της Μεσογείου. Εμφανίζει πολύ περιορισμένη εξάπλωση σε περιοχές της Κρήτης, με μεμονωμένα άτομα σε 5 σημεία στην Αμοργό και σε 1-2 σημεία στην Ανάφη, στη νότια Ελλάδα, και στις χερσονήσους Datca και Bodrum (απέναντι από την Κω) της επαρχίας Mugla στη νοτιοδυτική Τουρκία. Πρόσφατα ανακαλύφθηκαν μερικά φυτά στην περιοχή της Αρχαίας Επιδάυρου. Το φοινικόδασος του Βάι, στο νομό Λασιθίου στο δήμο Σητείας είναι ουσιαστικά το μεγαλύτερο φοινικόδασος της Ευρώπης και αποτελείται αποκλειστικά από το φοίνικα του Θεόφραστου. Το έντομο *Paysandisia archon* υπάρχει στη χώρα μας από το 2006 αλλά μέχρι πρότινος δεν είχε διαπιστωθεί να προσβάλλει το φοίνικα του Θεόφραστου. Το Μάρτιο του 2012 όμως το έντομο βρέθηκε στο χώρο του ΤΕΙ Κρήτης στο Ηράκλειο, σε παραφυάδες φοινίκων του Θεόφραστου. Η εύρεσή του πιθανώς να αποτελεί ένα μεμονωμένο περιστατικό, καθώς μέχρι στιγμής άλλες προσβολές σε άλλες περιοχές της Κρήτης από το συγκεκριμένο έντομο σε φοίνικες του Θεόφραστου δεν έχουν βρεθεί. Ωστόσο, ο κίνδυνος μια ομάδα πληθυσμού του εντόμου να εγκατασταθεί και να προσβάλλει το φοίνικα του Θεόφραστου είναι πλέον υπαρκτός.