First record of Acanthoscelides macrophthalmus (Schaeffer) (Coleoptera: Bruchidae) in Cyprus

Vassiliou V. A. Agricultural Research Institute, Plant Protection Section, Nicosia, Cyprus

Papadoulis G. Agricultural University of Athens, Laboratory of Agricultural Zoology and Entomology, Athens, Greece

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SHORT COMMUNICATION

First record of *Acanthoscelides macrophthalmus* (Schaeffer) (Coleoptera: Bruchidae) in Cyprus

V. A. VASSILIOU\(^1\)* AND G. PAPADOULIS\(^2\)

\(^1\)Agricultural Research Institute, Plant Protection Section, P.O.Box 22016, 1516 Nicosia, Cyprus

\(^2\)Agricultural University of Athens, Laboratory of Agricultural Zoology and Entomology, 75 Iera Odos, 11855 Athens, Greece

A bruchid beetle was emerged from the seeds of *Leucaena leucocephala* (syn. *Leucaena glauca* Benth., Family Mimosaceae). This endophagous seed predator was identified as *Acanthoscelides macrophthalmus* (Schaeffer) (Coleoptera: Bruchidae). Seed specimens were collected from *L. leucocephala* at the Nicosia district (35° 11'N., 33° 23'E). The identification took place at the Agricultural University of Athens where specimens are stored. The insect was identified by morphological traits according to methods described by Kingsolver (2004). Body length is 2.9-3.8mm and width 1.8-2.0mm. Adults fly readily when disturbed. The integument color is red, occasionally with diffuse piceous marginal shading on elytra (Fig. 1). Vestiture is of fine dark brown, gray, and golden setae in pattern. Head and pronotum are golden with little or no pattern (Fig. 1). The length of the elytra is slightly longer than the width of the two elytra together. Eggs are laid either on the *Leucaena* pod surface, over a seed, or directly on exposed seeds (Walton 2003). They are less than 1mm in length. The larva hatches and chews into the seed. In the seed, larva passes through all its molts until the adult bruchid emerges. The characteristic circular escape hole can be seen in pods that have matured and dried out (Walton 2003). According to international literature this bruchid beetle appears to be a seed predator native to Central and South America (Neser 1994). It feeds on seeds of Neotropical *Leucaena*

\*Corresponding author, e-mail: vassilis@arinet.ari.gov.cy
One of the hosts is *Leucaena leucocephala*, a fast-growing nitrogen-fixing tree that serves as a multi-purpose beneficial plant. Research was carried out in several countries in order to use this bruchid species as a biological control agent in controlling *Leucaena*’s seeds. *A. macrophthalmus* appears to be very effective in reducing *Leucaena*’s seed numbers in laboratory environment. It is recorded that 95% or more of seed may be infested (Walton 2003), but under field conditions this effectiveness may vary. Research in Australia showed that the bruchid is not able to regulate the invasiveness of *Leucaena* and this is because the population densities of the insect in relation with the seed numbers on each plant are proportionally unequal. *Leucaena*’s seed predator, *A. macrophthalmus*, satisfies the criteria as a control agent in Asia. This seed beetle has already been introduced to South Africa for the control of *L. leucocephala* (ARC-PPRI 2003, Ockers 2004).

*Leucaena* is a thornless long-lived shrub or tree which may grow to heights of 7-18m (Fig 2). Leaves are bipinnate with 6-8 pairs of pinnae bearing 11-23 pairs of leaflets 8-16mm long. The inflorescence is a cream coloured globular shape which produces a cluster of flat pods 13-18mm long containing 15-30 seeds. The plant is known for its drought tolerance. Seed remain viable from several months to several years. The hard waxy seed coat makes scarification necessary before planting.

*Leucaena* is a widely used species as a valuable fodder shrub for increased animal production in the tropics (Khamseekhiew et al. 2001). It is an ever green forage rich in protein, minerals and B-carotene. The plant can also be grazed directly, is well accepted by livestock, particularly goats and is quite resistant to heavy, frequent defoliation (Meissner 1997). The crop can be cut at mature stage for silage or fodder. On the other hand, *L. leucocephala* is a “conflict tree” being widely promoted for tropical forage production and reforestation. At the same time, it is spreading naturally and is widely reported as a weed. This species has been nominated as among 100 of the “World’s Worst” invaders (Lowe et al. 2000).
contained in *Leucaena* foliage and affecting horses’ health, in general. After this incidence, its cultivation was discontinued. Nowadays *L. leucocephala* can be found individually in an altitude of 0 to 500m in agricultural areas, coastland, natural and planted forests, and in urban areas (across roads, pavements, parks etc).

To our knowledge this is the first report of the insect *A. macrophthalmus* in Cyprus.

**References**


Πρώτη αναφορά του εντόμου *Acanthoscelides macrophthalmus* (Schaeffer) (Coleoptera: Bruchidae) στην Κύπρο

Β.Α. ΒΑΣΙΛΔΙΟΥ1 ΚΑΙ Γ. ΠΑΠΑΛΟΥΛΗΣ2

1 Ινστιτούτο Γεωργικών Ερευνών, Τμήμα Φυτοπροστασίας, 1516 Λευκωσία, Κύπρος
2 Γεωπονικό Πανεπιστήμιο Αθηνών, Εργαστήριο Γεωργικής Ζωολογίας και Εντομολογίας, Ιερά οδός 75, 11855 Αθήνα

Το έντομο *Acanthoscelides macrophthalmus* (Schaeffer) (Coleoptera: Bruchidae) βρέθηκε για πρώτη φορά στην Κύπρο τον Οκτώβριο του 2007, μέσα σε σπόρους του είδους *Leucaena leucocephala* (Fabaceae: Mimosoideae). Το *A. macrophthalmus* έχει μήκος 2.9-3.8mm και πλάτος 1.8-2.0mm. Το αυτό έχει χρώμα λευκό ή ωχρό κίτρινο και μέγεθος μικρότερο από 1mm. Το θηλυκό οοστοκεί κυρίως πάνω στο λοβό και τους σπόρους. Η προνύμφη έχει χρώμα λευκό, τρέφεται, αναπτύσσεται και νιμφώνεται στο εσωτερικό του σπόρου. Ακολούθως, το νεαρό ενήλικο ανοίγει κυκλική οπή εξόδου στον σπόρο. Στη διεθνή βιβλιογραφία το έντομο αναφέρεται ως μονοφέρο και τρέφεται μόνο στο είδος *L. leucocephala*. Σε μερικές χώρες το *A. macrophthalmus* χρησιμοποιείται για βιολογικό έλεγχο των σπόρων του φυτού αυτού, αφού το *L. leucocephala* κατατάσσεται σε πολλές χώρες, μέσα στα 100 πιο επικίνδυνα φυτά-εισβολές. Στην Κύπρο, το έντομο φαίνεται να εισήχθη στο νησί πριν από 25 χρόνια περίπου, μαζί με τον ξενιστή του. Το φυτό αυτό εισήχθη και καλλιεργήθηκε στο νησί για την ψηλή θρεπτική του αξία και δινόταν ως προσθετικό στην τροφή των αλόγων.