

First record of *Monarthropalpus buxi* in Greece and some data of its phenology

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ABSTRACT

The gall inducing insect *Monarthropalpus buxi* (Laboulbene) (Diptera: Cecidomyiidae) has been recorded in Greece on 20/4/2004 in Athens (Ellinikon, GPS point: N 37° 54' 22", E 23° 44' 34") on *Buxus roduntifolia*. Two – 20 larvae per infested leaf were noticed but only 2 – 3 adults per leaf emerged. The majority (>92%) of the population of *M. buxi* completed one generation per year and adults emerged from late April to early May. A small proportion (<8%) of the population completed two generations per year and 1st generation adults emerged from late January to late March. Second generation adults emerged from late June to late July. In addition, during 2006 parasitism by *Torymus* sp. (Hymenoptera: Torymidae) on larvae of the fly has been noticed.

Introduction

The species *Monarthropalpus buxi* (Laboulbene) [= *Cecidomyia (Diplosis) buxi* Laboulbene, = *Monarthropalpus flavus* (Schrank)] (Diptera: Cecidomyiidae) has been recorded during 1873 – 1981 attacking *Buxus* spp. in several countries of Europe (Austria, Czech Republic, Slovakia, Denmark, England, Germany, France, Hungary, Italy, Poland, Rumania, Sweden, Switzerland, The Netherlands, ex. Soviet Union, ex. Yugoslavia, Turkey) as well as in North America (USA) (Barnes 1948, Brewer et al 1984). *M. buxi* has been recorded to infest mainly *Buxus sempervirens* but also *B. balcarica*, *B. variegata*, *B. variegata argentea*, *B. variegata aurea*, *B. augustifolia* (= *B. nana*), *B. hansworthi*, *B. suffruticosa*, *B. arborescens*, *B. rotundifolia* were attacked (Barnes 1948). In addition *B. bullata* (= *B. latifolia*), which was believed to be immune to *M. buxi* (Barnes 1948), has

also been proved susceptible to *M. buxi* infestation (Brewer & Skuhravy 1980).

In Europe, *M. buxi* completes one generation per year. Adult emergence and oviposition have been recorded from late May to early June. The earliest emergence was noticed at the end of March in Bordeaux (Brewer et al 1984). Egg hatching has been recorded early in June, larval development has been noticed to be completed until March and pupation has been noticed to occur in April (Brewer et al 1984). In the present study the occurrence of *M. buxi* in Greece and some data of its phenology have been recorded.

Materials and Methods

The location of the first record of *M. buxi* in Greece was in a private plant nursery in Athens (Ellinikon) and the GPS point has been noticed down by GPS device Garmin, Etrex. The identification of *M. buxi* was made according to Laboulbene (1873) and

Baylac (1986) keys. After the first record of *M. buxi*, regular observations and samplings every 15 days were made during the period 20/4/2004 – 30/6/2006, from twelve 40cm-high plants of *B. rotundifolia* planted in 42cm-diameter pots, in order to obtain phenological data. It was counted the number of larvae and pupae of *M. buxi*. In addition, the emergent adults were estimated indirectly counting the number of the empty pupal chambers.

Results and Discussion

M. buxi was recorded on 20/4/2004 in Athens (Ellinikon, GPS point: N 37° 54' 22", E 23° 44' 34") infesting *Buxus rotundifolia*

(Fig. 1). In each infested leaf 2–20 larvae were found to feed but only 2–3 of them emerged as adults. In 2004 and 2005, the majority of the population of adults of *M. buxi* (>92%) was noticed from late April to early May and their offsprings completed their development until the next spring. A small proportion of adults were noticed from late January to late March and their offsprings completed their development until late June – early July (Fig. 2). Thus, in Greece a small proportion of the population of *M. buxi* completes two generations per year but the greatest proportion completes one, as in the other European countries.

In addition, during 2006 (20/4/2006 – 30/6/2006) the occurrence of a larval-ectoparasitoid (green wasp, *Torymus* sp., Hymenoptera: Torymidae) has been noticed (Fig. 3).



FIG. 1. *B. rotundifolia* leaves infested by *M. buxi* (a), adults (b), larvae (c) and pupa of *M. buxi* (d).

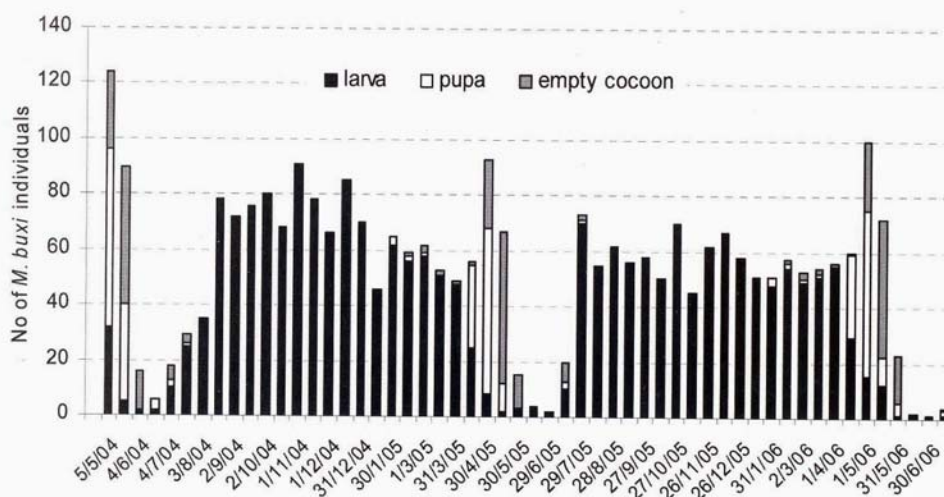


FIG. 2. Phenology of *M. buxi* in Greece.

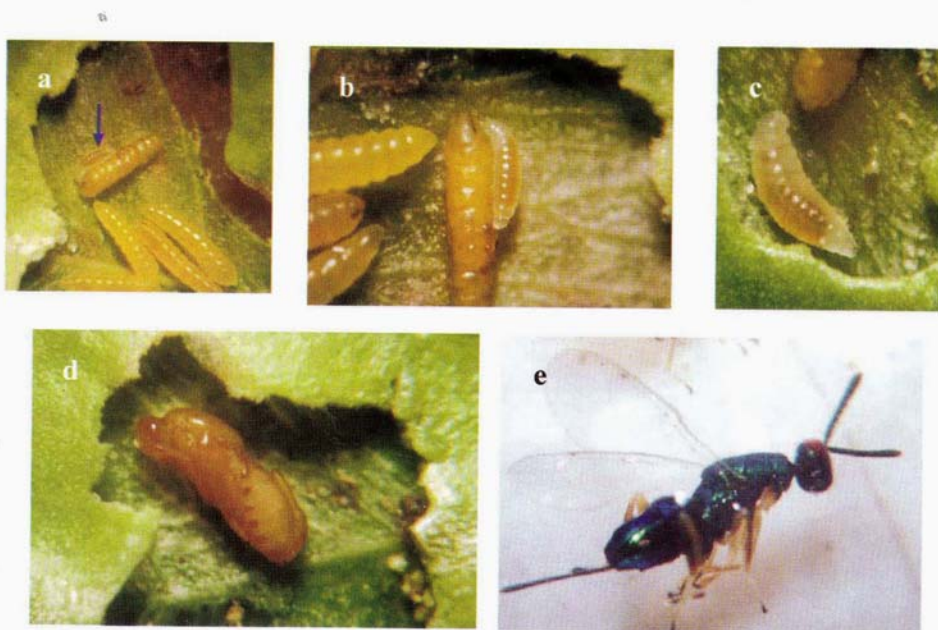


FIG.3. Larva of *Torymus* sp. (Hymenoptera: Torymidae) attacking *M. buxi* (a, b, c), pupa (d) and adult of *Torymus* sp. (e).

References

- Barnes, H.F. 1948. Gall midges of economic importance. Vol. IV, Ornamental plants and shrubs. Crosby Lockwood and Son Ltd., London.
- Baylac, M. 1986. Redescription de *Monarthropalpus buxi* (Laboulbene) (Dipt., Cecidomyiidae), designation d'un lectotype. Bulletin de la Societe Entomologique de France, 91: 259-269.
- Brewer, J.W. and V. Skuhravy. 1980. Susceptibility of *Buxus* spp. to attacks of *Monarthropalpus buxi* (Lab.) (Diptera: Cecidomyiidae) under experimental conditions. Zeitschrift fur Angewandte Entomologie, 90: 396 - 400.
- Brewer, J.W., V. Skuhravy and M. Skuhrava. 1984. Biology, distribution and control of *Monarthropalpus buxi* (Laboulbene) (Diptera, Cecidomyiidae). Zeitschrift fur Angewandte Entomologie, 97: 167-175.
- Laboulbene, A. 1873. Metamorphoses de la cecidomyie du buis *Cecidomyia (Diplosis) buxi*. Annales de la Societe Entomologique de France, 5: 313-326.

KEY WORDS: *Monarthropalpus buxi*, Cecidomyiidae, first record, phenology

Πρώτη καταγραφή στην Ελλάδα και στοιχεία φαινολογίας του *Monarthropalpus buxi*

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ΠΕΡΙΛΗΨΗ

Ο υπονομευτής του πυξαριού *Monarthropalpus buxi* (Laboulbene) (Diptera: Cecidomyiidae) βρέθηκε για πρώτη φορά στην Ελλάδα στις 20/4/2004 στην Αθήνα (Ελληνικό, γεωγρ. πλάτος 36° 17' 14", γεωγρ. μήκος 28° 10' 23") επί *Buxus roduntifolia*. Καταγράφηκαν 2 – 20 προνύμφες/φύλλο αλλά παρατηρήθηκε έξοδος μόνο 2 – 3 ακμαίων/φύλλο. Διαπιστώθηκε ότι το μεγαλύτερο μέρος του πληθυσμού (>92%) του *M. buxi* συμπληρώνει μία γενεά ανά έτος, με την έξοδο των ακμαίων να παρατηρείται τέλη Απριλίου – αρχές Μαΐου. Ένα μικρό ποσοστό του πληθυσμού (<8%) συμπληρώνει δύο γενεές ανά έτος, με την έξοδο των ακμαίων της 1^{ης} γενεάς να παρατηρείται τέλη Ιανουαρίου – τέλη Μαρτίου και της 2^{ης} γενεάς τέλη Ιουνίου – τέλη Ιουλίου. Επίσης κατά τη διάρκεια του έτους 2006 παρατηρήθηκε παρασιτισμός των προνυμφών του *M. buxi* από το εκτοπαράσιτο *Torymus* sp. (Hymenoptera: Torymidae).