

First record of the bay sucker, *Lauritrioza alacris* (Flor) (Hemiptera: Triozidae), in Jordan

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Abstract

The bay sucker, *Lauritrioza alacris* (Flor), is recorded for the first time in Jordan. It was found on bay trees (*Laurus nobilis*) in home gardens in several localities in the capital Amman. Slide mounts were prepared and voucher specimens were preserved at the University of Jordan Insects Museum. Original images for an adult male and female, their genitalia, head, wings and infestation symptoms on the host are provided. Further investigations are needed to evaluate the number of generations per year, the distribution of the pest, the degree of infestation, the damage caused and to study natural enemies of the pest.

KEYWORDS

Jordan, *Lauritrioza alacris*, *Laurus nobilis*, Triozidae

Premier signalement du psylle du laurier, *Lauritrioza alacris* (Flor) (Hemiptera : Triozidae), en Jordanie

Le psylle du laurier, *Lauritrioza alacris* (Flor), est signalé pour la première fois en Jordanie. Il a été observé sur des lauriers (*Laurus nobilis*) dans des jardins privés de plusieurs localités de la capitale Amman. Des insectes ont été montés entre lame et lamelle et des spécimens de référence ont été conservés à la Galerie d'Entomologie de l'Université de Jordanie. Cet article fournit les images numériques d'un mâle et d'une femelle adultes, de leurs génitalia, tête et ailes, ainsi que des symptômes d'infestation sur l'hôte, prises initialement. Des recherches supplémentaires seront nécessaires pour évaluer le nombre de générations par an de l'organisme nuisible, sa répartition géographique, le degré d'infestation, les dommages causés et les ennemis naturels de cet organisme nuisible.

Первая регистрация лавровой листоблошки, *Lauritrioza alacris* (Flor) (Hemiptera: Triozidae), в Иордании

Листоблошка лавровая, *Lauritrioza alacris* (Flor), впервые зарегистрирована в Иордании. Она была обнаружена в приусадебных садах в нескольких населенных пунктах столицы Аммана на лавровых деревьях (*Laurus nobilis*). Были смонтированы микропрепараты, а ваучерные особи были сохранены в Музее насекомых Иорданского университета. Приведены оригиналы цифровых изображений самца и самки, их гениталий, головы, крыльев и симптомов заражения хозяина. Необходимы дальнейшие исследования для оценки количества

поколений в год, распространения вредителя, степени заражения, нанесенного ущерба, а также для изучения естественных врагов листоблошки.

1 | INTRODUCTION

The jumping plant lice of the Triozidae family currently include 1073 species in 70 genera worldwide (Ouvrard, 2021). Only a limited number of publications on the occurrence of this family in Jordan are found in the literature. Mustafa (1991) recorded *Bactericera tremblayi* (Wagner, 1961). Al Khawaldeh *et al.* (1997) recorded seven species: the polyphagous *Bactericera nigricornis* (Foerster, 1848) and *Bactericera tremblayi* (Wagner, 1961) were found on a variety of herbaceous plants, *Trioza buxtoni* Laing, 1924 was collected from *Ficus carica* L. and *Ficus pseudosycamoros* Decaisne (Moraceae), *Trioza chenopodii* Reuter, 1876 and *Trioza dichroa* Scott, 1879 were found on *Atriplex* spp., *Chenopodium* spp. and other Chenopodiaceae, *Trioza galii* Foerster, 1848 was collected from *Galium* spp. and *Sherardia arvensis* L. (Rubiaceae), *Trioza sahlbergi* Sulc, 1913 was collected from *Atriplex halimus* L. and *Atriplex leuoclada* Boiss. (Chenopodiaceae).

Conci and Tamanini (1986) erected the genus *Lauritrioza* to include the type species *Trioza alacris* Flor, 1861. *Lauritrioza alacris* (syn. *Trioza alacris*) is native to the West Palaearctic and it was introduced into North and South America (Burckhardt, 1994; Ouvrard, 2021). In the middle East, it was recorded by Bodenheimer (1937) from Palestine. Zeidan-Gèze and Burckhardt (1998) recorded it from Lebanon and recently Zeity (2018) reported it from Syria.

Confirmed host plants of *L. alacris* include *Laurus azorica* (Seub.) Franco (Lurales, Lauraceae), *Laurus nobilis* L. and *Persea indica* (L.) Spreng. (Lurales, Lauraceae) (Ossiannilsson, 1992). However, *Laurus camphora* L. = *Cinnamomum camphora* (L.) J. Presl was reported as an uncertain host (Hodkinson & White, 1979).

L. alacris is polyvoltine (two to five generations/year) in European or Mediterranean countries depending on climate. Adults overwinter on the host. Females lay eggs on the lower surface of the leaves, causing the edges to roll into a gall where the nymphs feed then the adults molt from the last instar after the gall unrolls (Burckhardt, 1994).

The objective of this paper was to report on the first finding of *L. alacris* from Jordan and provide original digital images regarding the external morphology of adult males and females, genitalia and infestation symptoms.

2 | MATERIAL AND METHODS

Three leaf samples were obtained from heavily infested *Laurus nobilis* L. from the Al Rabiya area (12 bay trees) in Amman, Jordan, during the period from September to

October 2020. Additional field trips were conducted to several localities in Amman, including Abu Nusayr (1 tree), Wadi Al Sir (2 trees) and Ain Al Basha (2 trees). Adults were removed by a fine hairbrush and mounted on cards to take photos using a 65 mm Macro lens attached to Canon (Canon Inc., Tokyo, Japan) 5D Mark IV with LED ring light. Helicon Focus (HeliconSoft, Kharkiv, Ukraine) Stacking software was used to stack images to obtain the required depth of field. Slide preparations were made in Hoyer's medium for male and female genitalia, head and wings after soaking the entire insect in warm 10% KOH and then dissecting the different parts. Digital images were taken for the prepared slides under light microscope by a digital camera (CMEX 5.0 M pixel digital USB2 camera Euromex, @euromex microscopes holland, Arnhem, The Netherlands) attached to the eye tube. Voucher specimens were preserved at the University of Jordan Insects Museum.

3 | RESULTS AND DISCUSSION

Infested bay trees (adults observed on the trees and pest-specific symptoms seen) were found in all visited localities except Ain Al Basha. The examined specimens (about 100 from Al Rabiya) were identified as *L. alacris* based on the morphological features reported by Hodkinson and White (1979) and Conci and Tamanini (1986). Genal cones short and conical (Figure 1). Antennae thin, short about 1.5 times the width of the head, orange-yellow with apical segments black (Figure 2). Forewing long and narrow (Figure 3), pointed, about three times as long as wide, membrane clear or slightly yellow, with brown spot, veins yellow,



FIGURE 1 *Laurus alacris* dorsal of view of the head showing the short genal cones

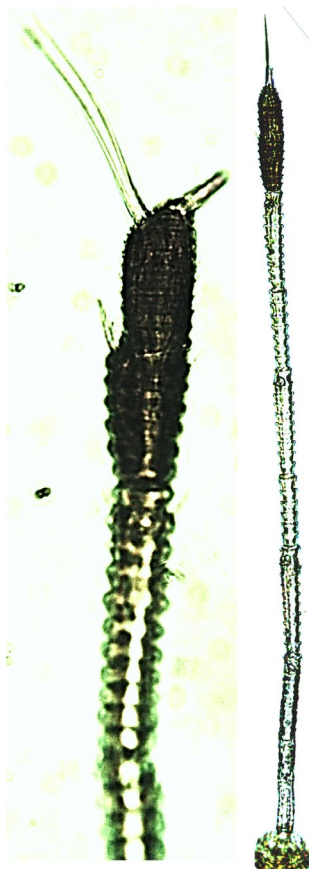


FIGURE 2 Antenna of *Laurus alacris* (above), enlargement of the last two segments showing sensory hairs

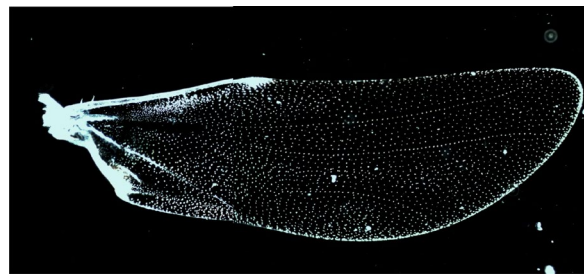


FIGURE 4 Phase contrast image of the hyaline hindwing showing venation and surface sculpture



FIGURE 5 Female *Laurus alacris* terminalia showing the proctiger and ovipositor (left), male genitalia of *L. alacris* showing the proctiger, parameres and aedeagus (right)

radular spinules dark brown, prominent. Hind wing hyaline venation and micro sculpture as in Figure 4. Male and female genitalia as in Figure 5. Young specimens orange-yellow with darker orange markings, older

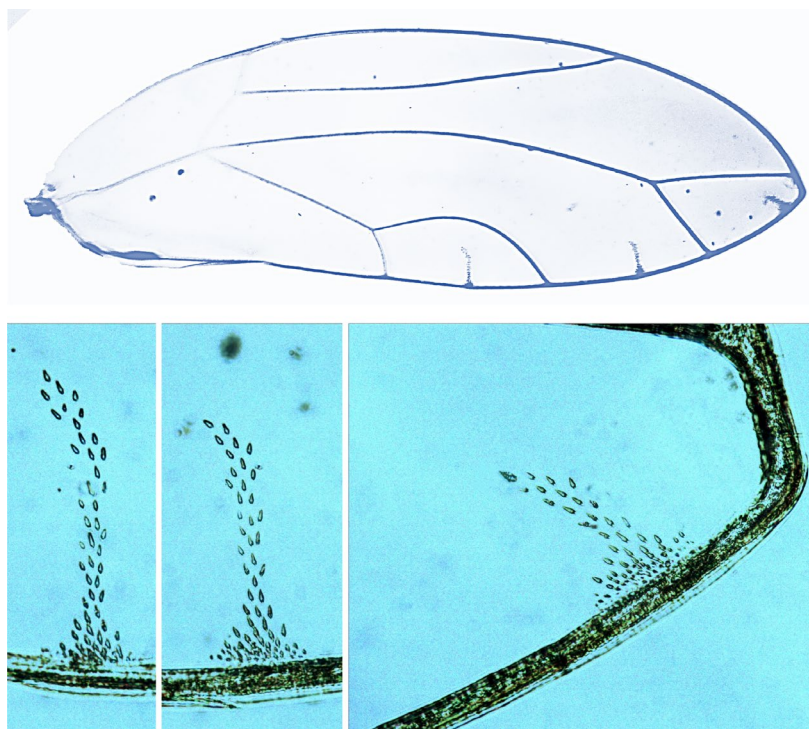


FIGURE 3 Forewing shape and venation, enlargement of the radular spinules

specimens yellow or orange yellow with brown markings. Dorsal and lateral views of male and female are shown in Figure 6.



FIGURE 6 *Laurus alacris* dorsal and lateral views of male (above) and female (below)

The symptoms were seen as rolled leaf edges in which nymphs live and feed (Figure 7). Adults emerged after the gall unrolled and appeared white. The occurrence of the bay sucker in Jordan was expected since the insect was reported from nearby countries, and this is considered as natural spreading within the species distributional range. It is possible that the species may eventually spread eastward to Iraq, other countries in the Arabian Peninsula, Iran and wherever bay is planted.

L. alacris is multivoltine, with two generations in England (Hodkinson & White, 1979) to five generations a year in Italy (Conci *et al.*, 1996). It overwinters as an adult on the host plant (Conci *et al.*, 1996). It is expected that in Jordan this insect may have five generations a year since Jordan is warmer than many European countries. Several aspects regarding the bay leaf sucker in Jordan need investigation, such as the number of generations per year, distribution of the pest, degree of infestation, damage caused and natural enemies. Large numbers of the German yellowjacket, *Vespula germanica* (Fabricius, 1793), were seen frequenting the infested trees but it was not observed to attack the pest and probably they were attracted to the honey dew secreted by the pest.

4 | CONCLUSION

The bay sucker, *Lauritrioza alacris* (Flor), is recorded from Jordan for the first time. Original digital images of adult male and female, genitalia and infestation symptoms are provided.



FIGURE 7 Rolled leaves of *Laurus nobilis* L. with nymphs exuviae on lower surface of leaves (above left), a typical gall before unrolling (above right), dorsal and ventral views of nymphs (bellow left) and newly emerging adults (below right)

REFERENCES

- Al Khawaldeh M, Katbeh-Bader A & Burckhardt D (1997) Psylloidea (Hemiptera) of Jordan. *Zoology in the Middle East* 15, 71–83.
- Bodenheimer FS (1937) Prodrômus faunae palestinae Essai sur les éléments zoogéographiques et historiques du sud-ouest du sous-règne paléarctique. *Mémoires présentés à l'Institut d'Égypte* 33, 1–286.
- Burckhardt D (1994) Psylloid pests of temperate and subtropical crop and ornamental plants (Hemiptera, Psylloidea): A review. *Trends in Agricultural Sciences, Entomology* 2, 173–186.
- Conci C & Tamanini L (1986) *Lauritrioza* n. gen., for *Trioza alacris* (Homoptera Psylloidea). *Atti della Società italiana di Scienze Naturali e del Museo Civico di Storia Naturale di Milano* 126(3–4), 237–256.
- Conci C, Rapisarda C & Tamanini L (1996) Annotated catalogue of the Italian Psylloidea. Second part (Insecta Homoptera). *Atti della Accademia Roveretana degli Agiati Serie 7 B. Classe di Scienze Matematiche Fisiche e Naturali* 5B, 5–207.
- Hodkinson ID & White IM (1979) New psyllids from France with re-descriptions of the type species of *Floria* Low and *Amblyrhina* Low (Homoptera: Psylloidea). *Entomologica Scandinavica* 10, 55–63.
- Mustafa TM (1991) The Psyllids (Homoptera: Psylloidea) of Jordan. *Iraqi Journal of Science* 31, 139–145.
- Ossiannilsson F (1992) The Psylloidea (Homoptera) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica* 26, 1–346.
- Ouvrard D. (2021) Psyllist - The World Psylloidea Database. <http://www.hemiptera-databases.com/psyllist>. searched on 9 April 2021 doi:<https://doi.org/10.5519/0029634>
- Zeidan-Gèze N & Burckhardt D (1998) The jumping plant-lice of Lebanon (Hemiptera: Psylloidea). *Revue Suisse de Zoologie* 105, 797–812.
- Zeity M (2018) First record of the bay sucker *Trioza alacris* Flor (Triozidae: Hemiptera) in Syria. *Bulletin OEPP/EPPO Bulletin* 48, 586–588. <https://doi.org/10.1111/epp.12546>.

How to cite this article: Bader AK, Al-Jboory IJ & Al Qaisy A (2021) First record of the bay sucker, *Lauritrioza alacris* (Flor) (Hemiptera: Triozidae), in Jordan. *EPPO Bulletin*, 00, 1–5. <https://doi.org/10.1111/epp.12770>