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First record of *Fiorinia phoenicis* Balachowsky, 1967, in Europe (Hemiptera, Diaspididae)

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Abstract. – The occurrence of the armoured scale insect *Fiorinia phoenicis* Balachowsky, 1967, is recorded for the first time in Europe (Valencia, Spain). Morphological characters are briefly compared with the nearest species *F. fioriniae* (Targioni-Tozzetti, 1867).

Résumé. – **Premier signalement de *Fiorinia phoenicis* Balachowsky, 1967, en Europe (Hemiptera, Diaspididae)**. La présence de la cochenille diaspine *Fiorinia phoenicis* Balachowsky, 1967, est signalée pour la première fois en Europe (Valence, Espagne). Ses caractères morphologiques sont brièvement comparés à l'espèce voisine *F. fioriniae* (Targioni-Tozzetti, 1867).

Keywords. – Armoured scale insect, Spain, *Phoenix dactylifera*, date palm, new record.

During the International conference on the Palm Weevil, *Rhynchophorus ferrugineus* (Olivier, 1790), in Valencia, Spain, in May 2010, the first author collected a leaf of a date palm (*Phoenix dactylifera* L., Arecaceae) heavily infested by scale insects in the city of Valencia. The species was identified as *Fiorinia phoenicis* Balachowsky, 1967, and compared with the type specimens deposited in the Muséum national d'Histoire naturelle in Paris (MNHN). This species was only known from Iran, the type locality (BALACHOWSKY, 1967) and Saudi Arabia (MATILE-FERRERO, 1984).

MATERIAL AND METHODS

Most of the scales were empty or dead and only a limited number of specimens were still alive and suitable to make permanent slides. Almost all live females were in the reproductive stage and few specimens were still in the second nymphal stage. Permanent slide preparations were made using the method given in MILLER & DAVIDSON (2005).

Material studied. – Spain, Valencia, close to the building Torres de Serranos (coordinates: 39°28'44,5"N / 0°22'31,5"W), 5.V.2010, *G. Seljak*, on a leaf of *Phoenix dactylifera* L. (scale insects collection, Agriculture and Forestry Service, Nova Gorica, Slovenia, 4 slides, 15 adult females, 6 second-instar nymphs ; MNHN, 1 slide, 5 adult females) (fig. 1-4). Specimens of *Phoenicococcus marlatti* Cockerell, 1899 (Hemiptera, Phoenicococcidae) were also found from the same sample.

DISCUSSION

Fiorinia phoenicis Balachowsky, a pupillarial species, is distinct by the greatly reduced characters of the adult female compared to the nymphal stage (BALACHOWSKY, 1967). Gland spines are totally absent on all the body and only the median pair of pygidial lobes (L1) is developed. Because of these morphological features it clearly differs from *Fiorinia fioriniae* (Targioni-Tozzetti, 1867), a species also commonly occurring on date palms. In addition, the pygidial lobes L1 are rather small, apically rounded with no diverging median margins unlike in *F. fioriniae* (fig. 4). According to BALACHOWSKY (1967), four dorsal marginal macroducts are present on each side of the pygidium. Our examination showed, however,

that the number of dorsal marginal macroducts may vary slightly among specimens in the same population. On our 20 adult females from Valencia, 8 specimens possess the dorsal marginal macroduct pattern 4+4, 6 specimens 4+3, 5 specimens 3+3, and 1 specimen 3+2. The 4th pair, if present, is often clearly smaller in diameter, sometimes nearly indistinguishable from ventral microducts, except for stronger sclerotized orifices on the pygidial margin. Similar variation of marginal macroducts is also present in the type material deposited in MNHN. The ventral surface possesses only microducts. They are very few on abdomen, being arranged along the margins. Clusters of microducts are further present near the mouthparts and posteromedial to the posterior spiracles. A noticeable variability is also observed in the number of trilocular perispiracular disc pores, varying from 1 to 5 next to each anterior spiracle, found also on the paratype, possessing 3 disc pores on the left side and 4 on the right side. Posterior perispiracular disc pores are absent or just occasionally, a single pore may occur next to one of the posterior spiracles as observed in only one of 20 females.

The second-instar nymph shows, however, typical characteristics of the pupillarial adult females of the genus *Fiorinia*, except for the absence of perivulvar pores. The strong reduction of pygidial structures in adult females happens just during the last moult (fig. 2). The second-instar nymph (fig. 3) possesses two well-developed pygidial lobes (L1 and L2); L1 strongly divergent, both joined by a medial sclerosis. Gland spines are present on each segment VIII and VII, as well as a longer pair on each segment IV and III. Five dorsal marginal macroducts are present on segments VIII to IV, one pair on each segment. Microducts present on venter, single on the submarginal and submedian area of abdominal segments V, IV and III.

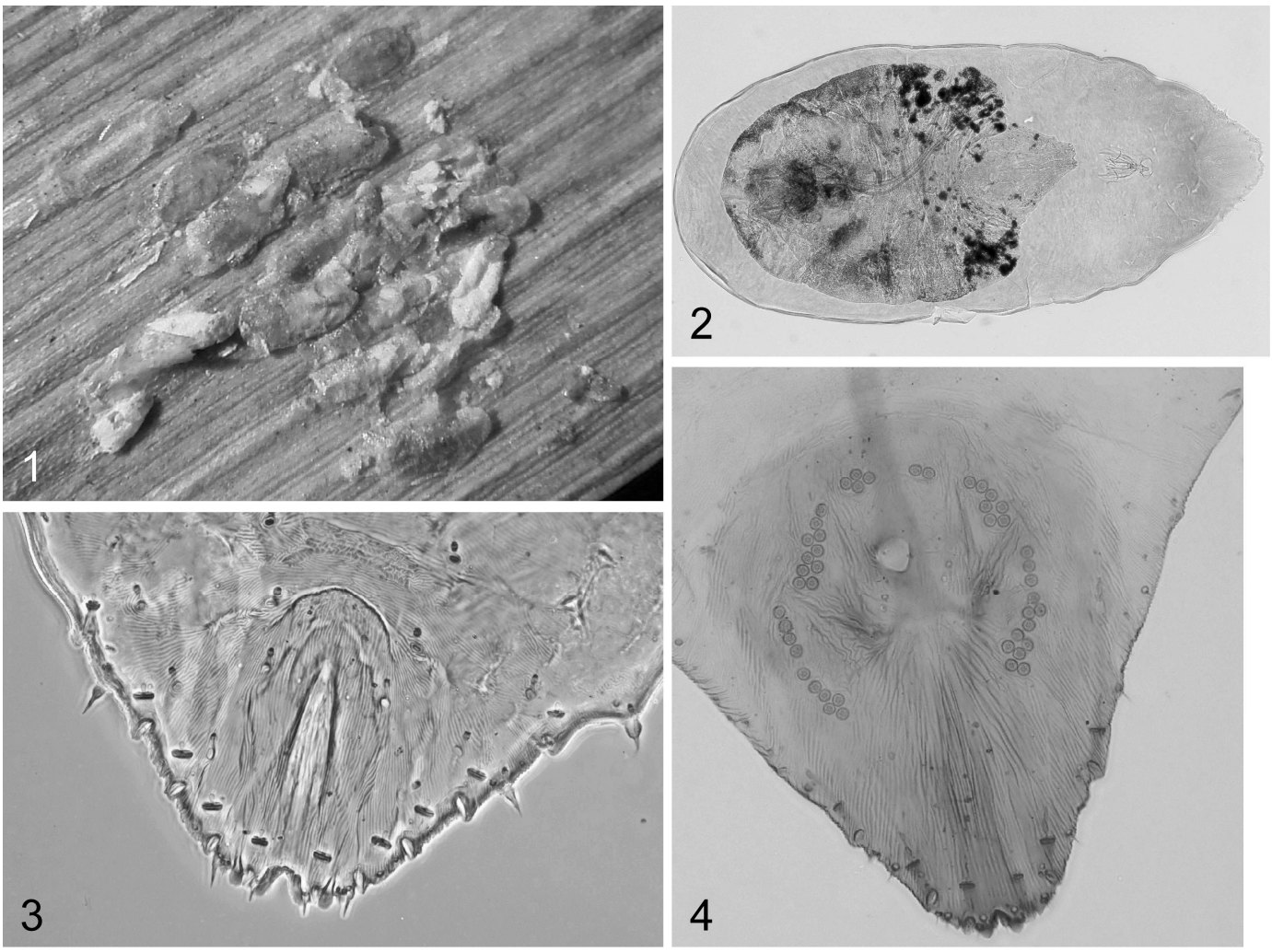

Fig. 1-4. – *Fiorinia phoenicis* Balachowsky, 1967. – 1, Reproductive females on palm leaves. – 2, Adult female enclosed in the second-instar exuviae. – 3, Pygidium of second-instar nymph. – 4, Pygidium of adult female.

The following key may help to distinguish slide mounted adult females of *Fiorinia phoenicis* and *F. fioriniae*, both occurring on *Phoenix* palms.

– Pygidium with only the median pair of lobes present (L1), weakly developed, apically rounded, their inner margins more or less parallel, not divergent, with 0 or 1 notch; marginal gland spines totally absent ..... ***Fiorinia phoenicis*** Balachowsky
– Pygidium with two well-developed pairs of lobes (L1 and L2), inner margins of L1 distinctly divergent with 2-4 notches; marginal gland spines present, gland-spine formula normally 1-1-0 according to MILLER & DAVIDSON (2005) ..... ***Fiorinia fioriniae*** (Targioni-Tozzetti)

A more detailed description and good drawings of the adult female as well as the second-instar nymph are given in the original description by BALACHOWSKY (1967).

So far, *F. phoenicis* is only known to occur on leaves of date palms. Its distribution area has been limited to the West-Asian zoogeographical sub-region (BALACHOWSKY, 1967 ; MATILE-FERRERO, 1984). Its presence in the city center of Valencia suggests that the species is perhaps more widely spread throughout the Mediterranean Basin, but possibly confused with *F. fioriniae* or simply overlooked. Macroscopically both species are alike and virtually undistinguishable.

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Thierry DEUVE. – ***Leistus reitteri* Jacobson, 1906 : espèce méconnue d'Anatolie occidentale (Col., Caraboidea, Nebriidae)**

M. Ivo Gudenzi, de Forli, en Italie, m'a récemment confié pour étude un *Leistus* Frölich, 1799, capturé en deux exemplaires mâles près d'Izmir, en Anatolie occidentale. Cela m'a conduit à revoir la taxinomie des espèces de cette région et à rétablir la validité d'une espèce anciennement décrite par Edmund Reitter.

En effet, REITTER a décrit en 1885 de Smyrne (Izmir) une nouvelle espèce, *Leistus ellipticus*, qu'il a comparée à juste titre à *Leistus fulvus* Chaudoir, 1846, et à *Leistus femoralis* Chaudoir, 1846. Quelques années plus tard, il placera malencontreusement cette espèce avec d'autres dans son nouveau sous-genre *Euleistulus*, l'éloignant davantage de *Leistus fulvus*, et il citera le mont Boz Dagh comme localité d'origine (REITTER, 1905).

Le nom d'*ellipticus* étant préoccupé dans le genre *Leistus* par *ellipticus* Wollaston, 1857, JACOBSON (1906) a proposé l'année suivante *reitteri* comme nom de remplacement. Cette classification sera reprise par CSIKI (1927) dans le *Coleopterorum Catalogus*, qui répertoriait "*Leistus* (*Euleistulus*) *reitteri*" Jacobson, 1906, comme une espèce à part entière.

Pourtant, PERRAULT (1988) dans sa révision du genre *Leistus* a tenu sans discussion et sans argument *Leistus reitteri* pour un synonyme de *L. fulvus* et a fait de ce dernier un taxon "*largement répandu dans le Caucase et en Asie Mineure le long du système montagneux septentrional, et jusqu'à la région de Smyrne*". Entérinant cette classification, FARKAC (2005) a lui aussi conservé *reitteri* comme un simple synonyme de *Leistus fulvus* Chaudoir.