

First observation of *Pleurodirus fairmairii* damages on *Cistus heterophyllus* subsp. *carthaginensis*, an Ibero-Balearic endangered endemism)

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Cartagena's Rockrose, an Ibero-Balearic endangered endemism

Cistus heterophyllus subsp. *carthaginensis* M.B. Crespo & Mateo (Cartagena's rockrose), within the family Cistaceae, is endemic to the Iberian Peninsula and Balearic Islands. It is listed as "Endangered" at the national level in the Spanish Catalogue of Threatened Species.

Since the end of the 90s of the last century, numerous actions have been carried out for the conservation of this plant, mainly included in the Recovery Plan for the species in the Autonomous Community of Valencia (Generalitat Valenciana, 2015). In response to this plan, an analysis of suitability of optimal areas for the reintroduction of specimens was established. Thus, different introductions of *Cistus heterophyllus* subsp. *carthaginensis* were carried out in several locations of Valencia.

First observation of *Pleurodirus fairmairii* damages in the field

A new important threat to this plant species was detected on May 2021, when several weevils were observed, in the field, feeding on leaves, flowers, buds and stems of *C. heterophyllus* subsp. *carthaginensis* in three introduced populations of this species in Valencia (Spain) at La Manguilla (Pobla de Vallbona), Pla de Colom (Bétera) and Tancat Forestal de Porta-Coeli (Serra).

The weevil was identified in the laboratory as *Pleurodirus fairmairii* (Kiesenwetter, 1852) (Fig. 1)

The damages caused by the presence of the weevil on the Cartagena's rock-rose were defoliation of the leaves and perforation of buds, flower buds, fruits and tender parts of the stem (Fig. 2). The weevil attack did not result in the direct death of the plants, nor did they irreversibly affect their survival, although the damages definitely compromise plant reproductive capacity.

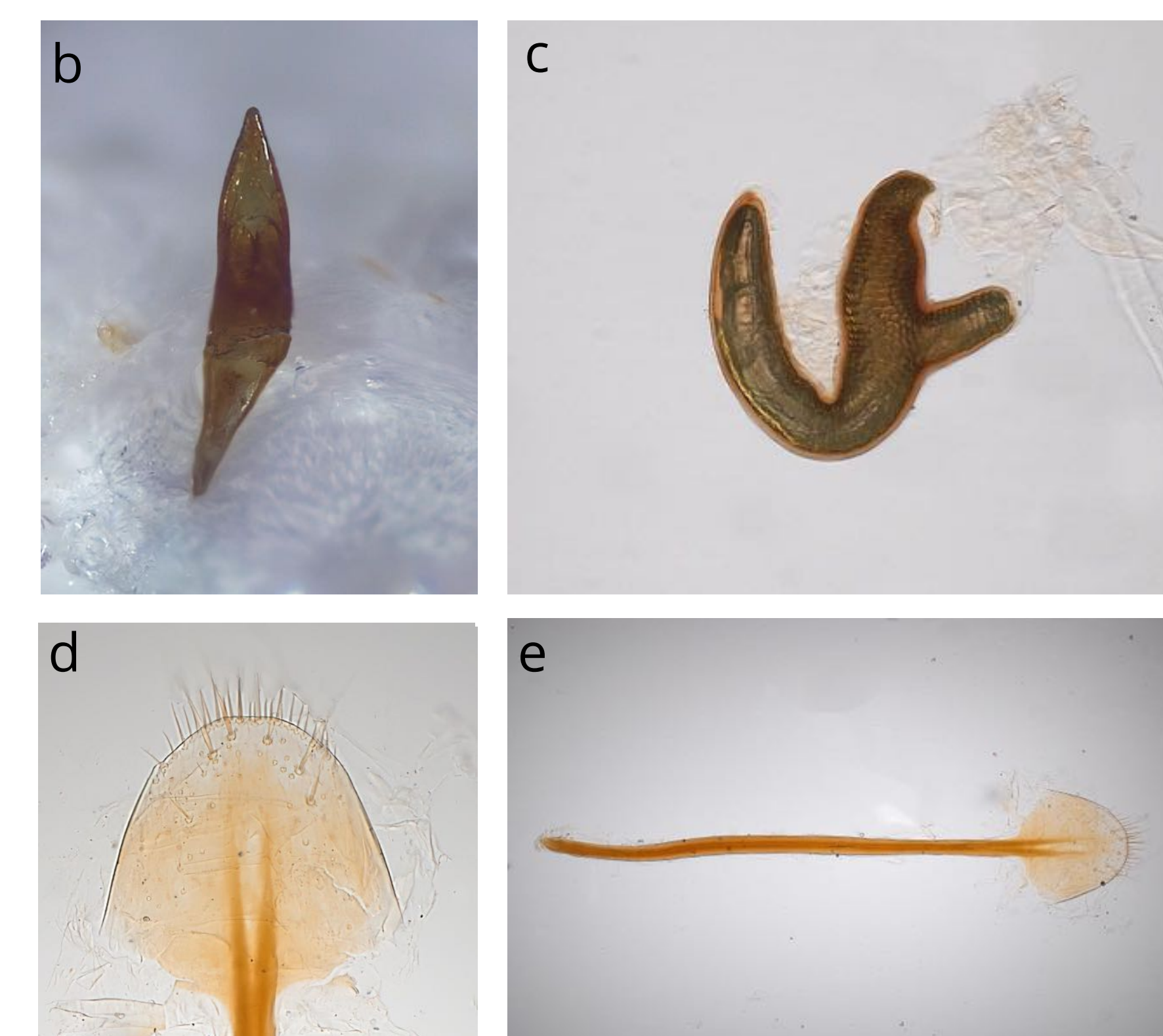


Figure 1. Adult specimen of *Pleurodirus fairmairii* (a). Genitalia of *Pleurodirus fairmairii*: Aedeagus (b); spermatheca (c); lamina of the female sternite VIII (d); female sternite VIII (e).

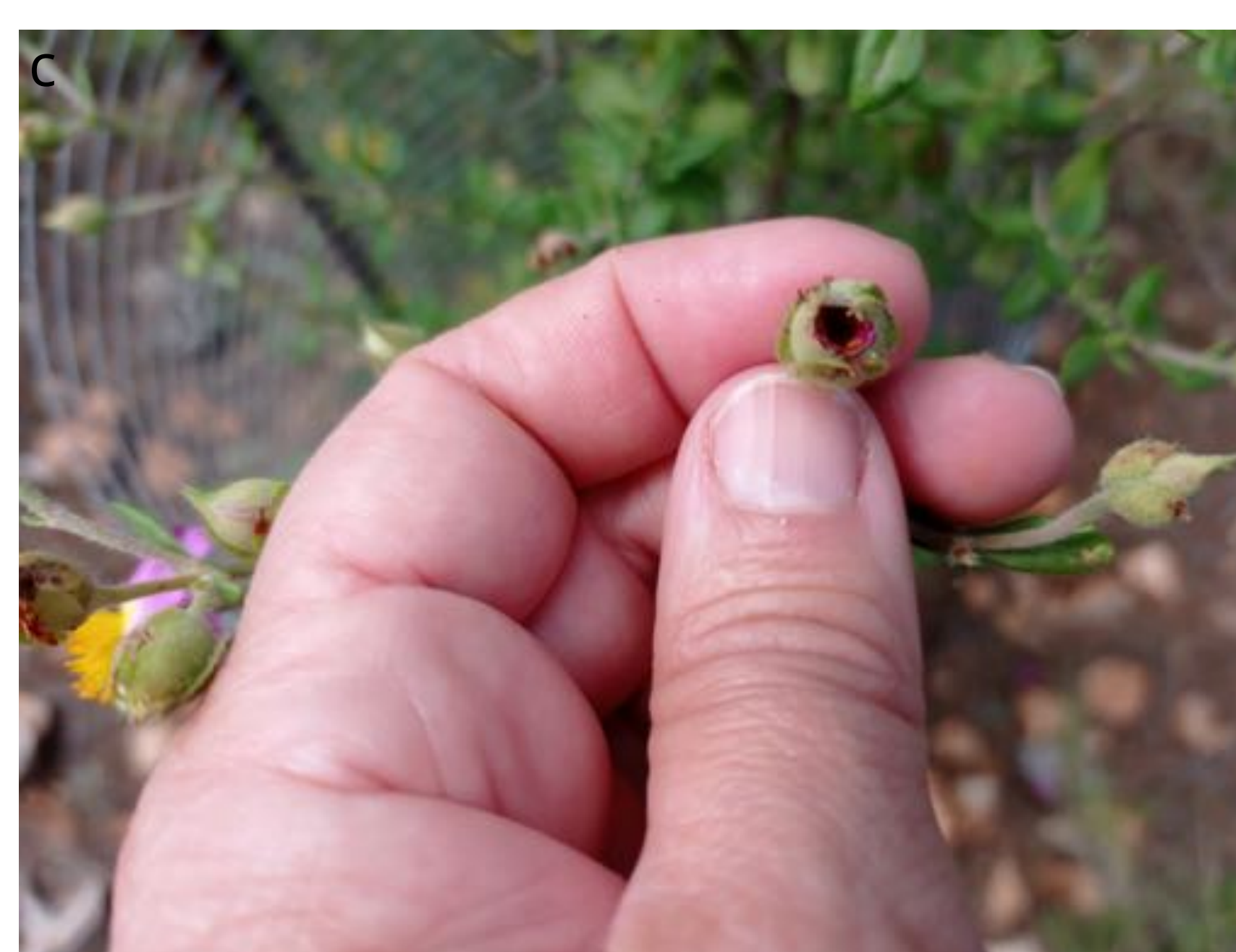
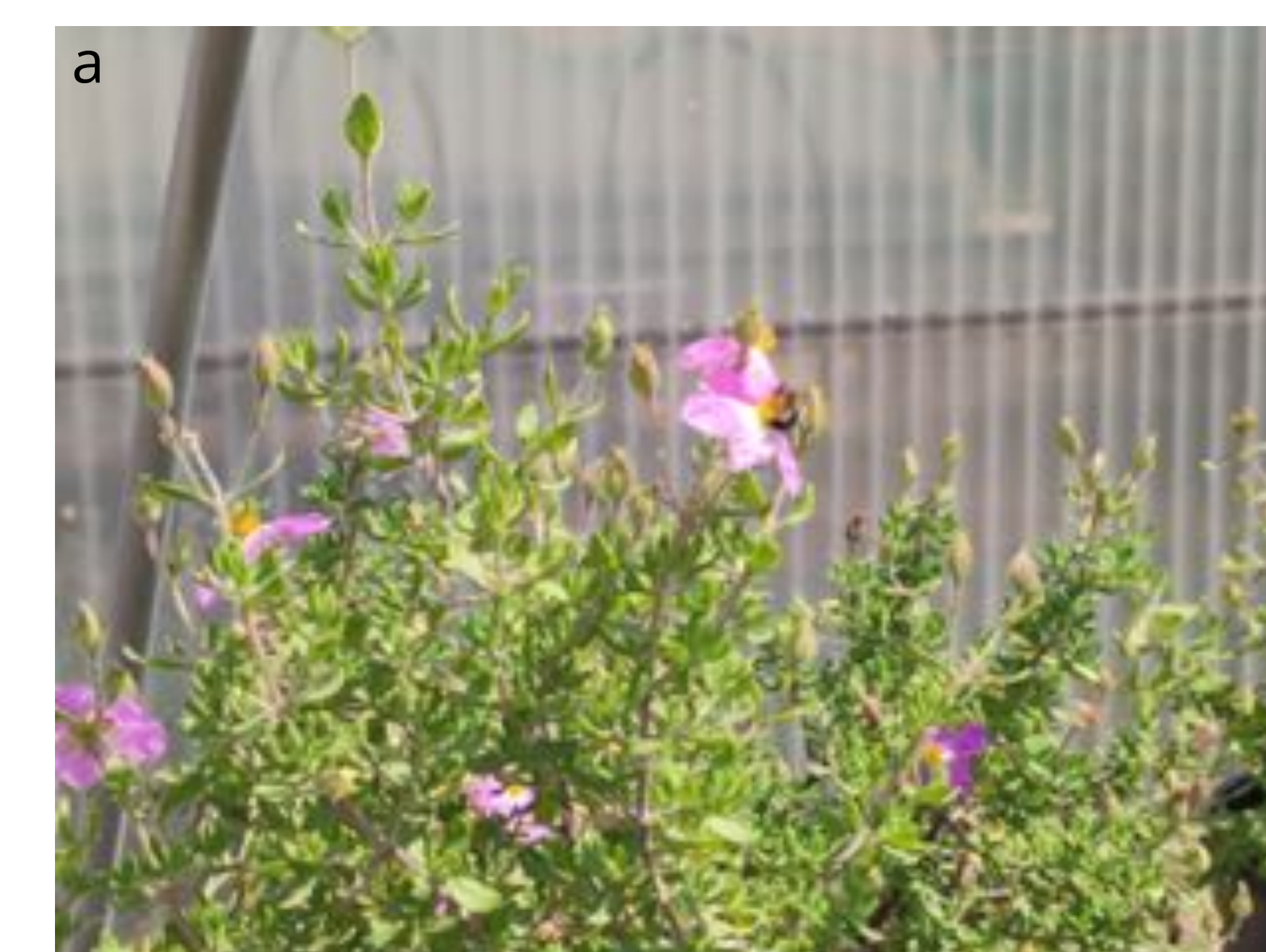


Figure 2. *Cistus heterophyllus* subsp. *carthaginensis* (a), *Pleurodirus fairmairii* damages on flowers (b), flower buds (c) and leaves (d) of *Cistus heterophyllus* subsp. *carthaginensis*.

Preliminary observations in laboratory

Preliminary observations in laboratory showed that *P. fairmairii*:

- Provoked relevant damages on ***Cistus heterophyllus* subsp. *carthaginensis***, ***Cistus salvifolius***, ***Quercus suber***, ***Quercus ilex***, ***Quercus coccifera*** and ***Pistacia lentiscus***.
- Showed a slight interest in feeding on ***Arbutus unedo***, ***Cistus clusii***, ***Cistus monspeliensis*** and ***Cistus albidus***.
- Didn't show interest in feeding on leaves of *Cistus atriplicifolium*, *Lavandula angustifolia*, *Lavandula dentata*, *Rhamnus lycioides*, *Phyllirea angustifolia*, *Mirtus communis*, *Viburnum tinus*, *Salvia officinalis*, *Colutea arborescens* and *Anthyllis cytisoides*.

Conclusions

The study of the morphology and the feeding habits of *P. fairmairii* represents an advance in the knowledge of this weevil, and useful information for the protection of *C. heterophyllus* subsp. *carthaginensis*. Indeed, further host selection trials should be carried on by offering to the insect flower buds, buds, tender shoots and leaves of those species for which the insect has shown interest.