



IJABBR- 2014- eISSN: 2322-4827

International Journal of Advanced Biological and Biomedical Research

Journal homepage: www.ijabbr.com



Original Article

The First Report of *Leptus* N. Sp. (Acari: Erythraeidae) as Ectoparasite of *Cassida Persica* Spaeth (Coleoptera: Chrysomelidae) from Oil and Gas Company of Gachsaran

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ARTICLE INFO

Article history:

Received: 10 Dec, 2014

Revised: 29 Jan, 2015

Accepted: 28 Feb, 2015

ePublished: 30 Mar, 2015

Key words:

Acari

Erythraeidae

Leptus

Chrysomelidae, *Cassida*

persica

Iran

ABSTRACT

Mites of family Erythraeidae are parasites in their larval stage and predators in their post-larval stages on a variety of arthropods, among which are important pest species. During 2011-2013, in a faunistic survey of mites associated with beetles of the family Chrysomelidae in Oil and Gas company of Gachsaran region, Iran. Specimens were preserved in AG (alcohol 75%, glycerin 5%), cleared in lactophenol solution and mounted by Hoyer's medium. Mite of the genus *Leptus* (Acari: Erythraeidae) was removed from larva and adult of *Cassida persica* Spaeth (Coleoptera: Chrysomelidae). The first time in the world *C. persica* was observed as a new host of *Leptus* n. sp. It is concluded that *Leptus* n. sp. can be considered as a valuable addition to the existing IPM methods for Chrysomelid control. Description of new species is in process.

1.INTRODUCTION

The Parasitengona is one of the most diverse groups of the Trombidiformes. With about 15 superfamilies, over 60 families and 8000 species, it accounts for over half of all species of the Trombidiformes. The majority of the described species of the Parasitengona are highly specialized water mites (over 6000 species, mostly known from adults) and chiggers (over 2000 species of Trombiculidae and Leewenhoekiidae, mostly known from larvae parasitic on vertebrates). Terrestrial Parasitengona other than chiggers were mostly described as adults in early years but larvae have been more and more commonly described in the last few decades. Some species of the Trombidioidea and Erythraeioidea are of potential importance in biological control as predators (adult/nymphal stages) and parasites (larvae) of insect and mite pests (Zhang *et al.*,

2010). Within the superfamily Erythraeoidea, the larvae of Erythraeidae are ectoparasitic on a wide variety of terrestrial arthropods, like insects, arachnids and collembolans. The erythraeidae adult with chelicera styletiform and retractable into idiosoma, body setae usually setiform, not flattened. Larva without urstigmata or anal opening, palpgenu with 1 seta, 2 pairs of prodorsal trichobothria, legs without trichobothria (Walter *et al.*, 2011). Of this superfamily, Erythraeidae mites are very active in the soil, especially when trying to search for food or mates. Larval species of the genus *Leptus* Latreille are widely distributed throughout the world. All known species in their larval stage are associated with various arthropods, especially with insects. Overall, the Erythraeoidea superfamily mites live in deserts and grasslands. Erythraeoidea superfamily larval during the parasitic on certain parts of the host

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body by gnathosoma are fixed and do not move (Saboori *et al.* 2007).

The subfamily Cassidinae, belonging to Coleoptera, Chrysomelidae, distributes worldwide and has been described about 2760 species to date (Borowiec 1996). Many species have a variety of types in the tropics as compared with scarce variety in temperate regions. All the Cassidinae species are leaf-feeding insects both at the larval and adult stages, and entirely feed on the surface of leaves. The genus *Cassida* is well characterized by body rounded to elliptical or trapeziform, dorsum usually bare, clypeus at most twice as wide as long. Pronotum broader than long, disc of elytra regularly convex or depressed. Puncturation partly or completely regular. Explanate margin of elytra varying from narrow to broad, usually distinctly narrower than half width of disc. Venter of pronotum without antennal groove. Tarsal claws simple (Qi *et al.* 2008). It is concluded that *Leptus* n. sp. can be considered as a valuable addition to the existing IPM methods for Chrysomelid control.

2. MATERIALS AND METHODS

For the collection of the terrestrial Parasitengona mites on larvae and adult insects in *Cassida persica* Spaeth in different regions of Oil and Gas company of Gachsaran, *Platychaete mucronifolia* Boiss. Boiss. were observed. The specimens of these mites after collection, in their different larvae stages and adult *C. persica*, were kept in AG (alcohol 75%, glycerin 5%). The address of the region (30° 19 ' 20" N, 50° 41' 10" E, 550 m a.s.l.) and date of sampling were labeled on MicroCenterfuse Tubes contained the samples. For Preparing the slides of mites, we put them in lactophenol solution and after transparency, with the use of hoyers medium, the slides were prepared. The slides were put in the oven to become dry and after identification we took photos from the specimens.

3. RESULTS AND DISCUSSION

During researches through 2011-2013 conducted for identification of the terrestrial Parasitengona mites related to family Chrysomelidae, in different regions of Oil and Gas company of gachsaran, *leptus* n. sp. which belongs to Erythraeidae, on larvae and adult *Cassida persica* as a new host for this mite, is reported for the first time in the world (Figs 1, 2). *Leptus* Latreille, 1976 larvae on *Eurygaster integriceps* Puton (kermanshah), *Hponomeuta malinellus* Zell (oroomiye), *Dociostaurus hauensteini* Boliver (varamin) and in free way of collection on plants (Tabriz) were collected so far. *Platychaete mucronifolia* from Asteraceae is also a new host for feeding of *C. persica* in the world (Fig. 3). The specimens are kept in department landscape of Oil and Gas company of gachsaran (Fig. 4).



Figures 1–4. *Leptus* n. sp., *Cassida persica* and *Platychaete mucronifolia*. 1. *Leptus* n. sp. on *Cassida persica*; 2. *Leptus* n. sp. on *Cassida persica* larvae; 3. Parasitized larvae of *Cassida persica* on *P. mucronifolia*; 4. *Leptus* n. sp, dorsal view of larvae.

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