



A new genus and species of mites of the family Caraboacaridae (Acari: Heterostigmata) associated with carabid beetles (Coleoptera: Carabidae) from Iran

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Abstract

A new genus and species of mites of the family Caraboacaridae (Acari: Heterostigmata), *Minicaraboacarus quadridiscalis* Hajiqanbar and Khaustov **n. gen., n. sp.** associated with *Cymbionotum semelederi* (Chaudoir, 1851) (Coleoptera: Carabidae) is described from Iran. The leg chaetotaxy and solenidiotaxy of mites of the family Caraboacaridae are discussed.

Key words: Mite, Caraboacaridae, *Minicaraboacarus quadridiscalis*, new genus, new species, Carabidae, Iran

Introduction

Mites of the family Caraboacaridae Mahunka, 1970 are associated with different carabid beetles (Eidelberg, 1993). Cross (1965) and Nickel and Elzinga (1969), based on enlarged chelicerae and some observations on inserted chelicerae into the veins of host's hind wing, stated that these mites are probably parasites. However Kaliszewski *et al.* (1995) believe that it is doubtful because no male and other instars of caraboacarid mites have been found on their hosts. Parasitism by the adult female mites while on the adult beetles is also doubtful because there seems to be no indication of either penetration and attachment by the chelicerae of the mites or swelling of their bodies due to liquid (haemolymph) uptake.

Until now, this family included only one genus *Caraboacarus* Krczal, 1959 and six species: *C. stammeri* Krczal, 1959, *C. karenae* Nickel and Elzinga, 1969, *C. towsleyi* Husband and Husband, 1984, *C. calosomae* Husband, 1986, *C. bernardi* Haitlinger, 1990 and *C. krczali* Eidelberg, 1994 (Eidelberg, 1993; 1994).

The genus *Caraboacarus* was described by Krczal (1959) and placed in family Pyemotidae. Subsequently, Cross (1965) placed the genus in the subfamily Acarophenacinae and the family Pyemotidae Oudemans, 1937. Later on, Mahunka (1970) created a new family, Caraboacaridae, and placed it in superfamily Pyemotoidea Oudemans, 1937. Lindquist (1986) retained the Caraboacaridae in superfamily Pyemotoidea. Kaliszewski *et al.* (1995) placed Caraboacaridae in superfamily Trochometridioidea. In this paper, we follow the opinion of Kaliszewski *et al.* (1995).

Mites of family Caraboacaridae in Iran are poorly studied. For the first time, Mirjamali (2007) reported the family in Iran by finding *C. stammeri* in soil samples. During the study of heterostigmatic mites associated