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Short communication

First record of the genus and species *Spatulaphorus copridis* (Acari: Pygmephoridae) associated with earth-boring dung beetles (Col.: Geotrupidae) from Iran

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چکیده

طی مطالعاتی که در تابستان ۱۳۸۸ روی کنه‌های هترواستیگما از راسته‌ی پیش‌استیگمایان مرتبط با سخت‌بالپوشان در جنگل‌های استان گلستان انجام گرفت، گونه‌ی *Spatulaphorus copridis* Khaustov, 2007 در ارتباط با سوسک‌های پهن‌خوار جمع‌آوری گردید. جنس و گونه‌ی این کنه برای اولین بار از ایران گزارش می‌شود. *Geotrupes* spp.(Col.: Geotrupidae)

Mites of the family Pygmephoridae (Acari: Heterostigmata) consist of free-living species with phoretic or non-phoretic female forms. The free-living species of the pygmephorid mites are often associated with insects (primarily Coleoptera, Hymenoptera and Diptera) for phoretic dispersal. They are generally fungivorous in their habitats (Kaliszewski *et al*., 1995).

During a preliminary study of heterostigmatic mites associated with Coleoptera in Golestan province (northern Iran) in 2009, we found two specimens of a pygmephorid mite, *Spatulaphorus copridis* Khaustov, 2007, in bottom of two vials containing earth-boring dung beetles of the genus *Geotrupes* Latreille (Col.: Scarabaeoidea: Geotrupidae) submerged in ethyl alcohol 75%. The genus and species of this mite is new to mite fauna of Iran. The current record expands the distribution of the genus in Palaearctic realm.

The genus *Spatulaphorus* Rack currently contains eight species associated with different scarab beetles (Col.: Scarabaeoidea), of which four species are known from Ukraine and the other species from South Africa, Republic of Botswana and Vietnam (table 1). Therefore, the species of this genus is distributed in Palaearctic and Afrotropical realms.

Regarding to host relationships, *S. copridis* has already been separated from *Copris lunaris* (Linnaeus) (Col.: Scarabaeidae); however, in the current study, it was found to be attached to *Geotrupes* sp. Thus, the latter species is a new host record for *S. copridis*.

The genus *Spatulaphorus* is morphologically similar to the genus *Pygmephorellus* Cross & Moser, but femoral setae *d* on the first pair of legs are spatulate in *Spatulaphorus* rather than being hook-like as in *Pygmephorellus*. Also, *S. copridis* can be distinguished from the other species of the genus by having only one seta on genu I (two in other species).

Table 1. Hosts and distribution of known species of the genus *Spatulaphorus*. All coleopteran host species belong to the superfamily Scarabaeoidea.

***Spatulaphorus* species**	**Coleopteran host**	**Locality**	**Reference**
S. geotruporum Khaustov	*Geotrupes stercorarius* (L.) (Geotrupidae)	Ukraine	Khaustov (2005)
S. vladimiri Khaustov	*Geotrupes stercorarius* (L.) (Geotrupidae)	Ukraine	Khaustov (2005)
S. geotrupi (Mahunka)	*Geotrupes* sp. (Geotrupidae)	Ukraine	Mahunka (1970)
S. copridis Khaustov	*Copris lunaris* (L.) (Scarabaeidae); *Geotrupes* sp. (Geotrupidae)*	Ukraine; Iran*	Khaustov (2007)
S. luriei Dastych *et al.*	Scarab beetles (Scarabaeidae)	South Africa	Dastych *et al.* (1997)
S. foliatus Dastych & Rack	*Onitis* sp. (Scarabaeidae)	Botswana	Dastych & Rack (1993)
S. langi Dastych & Rack	*Catharsius* sp. (Scarabaeidae)	Vietnam	Dastych & Rack (1993)
S. camerikae Dastych & Rack	*Catharsius ulysses* Boheman (Scarabaeidae)	Botswana	Dastych & Rack (1993)

* Here reported.

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