

FIRST RECORD OF *ARMASCIRUS JASMINE* BASHIR, AFZAL & KHAN (ACARI: PROSTIGMATA: CUNAXIDAE) IN EGYPT

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Abstract

First record of mite species from Kalyobia Governorate Egypt, *Armascirus jasmine* Bashir, Afzal&Khan (Acari: Prostigmata: Cunaxidae) was redescribed and illustrated.

Key words: Acari : Armascirus, Cunaxidae key, taxonomy

INTRODUCTION

Family Cunaxidae are small (300-1000 µm) predatory mites found in a different habitats including, leaf litter soil, open rocks, agriculture fields and stored products Thor, 1902 (Den Heyer 1977;; Quilici et al. 1997; Sepasgosarian 1984; Smiley 1992; Walter 1999; Zaher *et al.* 1975). They play an important role in biological control of some insects, scales, mites and nematods (Chaudhri et al. 1979; Ewing&Webster 1912; Walter&Kaplan 1991). Cunaxid mites are easily recognized by their spined palpi (except Bonzinae) and diamond-shaped body (Krantz& Walter 2009). The genus *Armascirus* was erected by Den Heyer (1978), who also gave a new taxonomical system and examined the systematics of the family Cunaxidae. Later, the monograph presented more detailed knowledge, including a new classification and more new taxa.

Since then new cunaxid species have been described from Asia (Muhammad& Chaudhri 1991; Bashir& Afzal 2005; Bashir *et al.* 2008; Corpuz-Raros 1995, 2008; Corpuz-Raros& Gruezo 2007) and Europe (Kaluz 2009)

Most significantly for *Armascirus* spp. several new species of this genus were described from the Neotropical region (Den Heyer&Castro 2008a, 2008b, 2012) and several species previously placed in other genera (Michocka 1982) were moved into *Armascirus*

Recently, Skvarla& Dowling (2011) brought together the knowledge on this genus and along with a new species description, Presented a key to adults of *Armascirus* of the world Kaluz& Vrabe (2013) they described two new species *Armascirus fendai* & *A. masani* and a world key with 36 species of genus *Armascirus*.

In Egypt same studies were carried out concerning the occurrence of biology and morphology of different cunaxid species (Zaher *et al.*, 1970; Nassar, 1976; El-Bishlawy & Rakha, 1983; Zaher, 1986.)

MATERIALS AND METHODS

The specimens studied were collected from soil and debris under cotton cultivars near Kaha research station, Kalyobia Governorate, isolated in tullgren photoelectric, cleared in nesbitt's fluid and mounted in Hoyer's medium. The drawings were carried out with light microscopy and camera lucida. All measurements stated in micrometers (mm). Body length was measured from the anterior margin of the pronotal dorsal shield to the caudal margin of pronotal shield. The dorsal setal notation follows the more generally accepted nomenclature of. The scale in all figures represents 100 mm.

RESULTS AND DISCUSSION

GENUS ARMASCIRUS Den Heyer, 1978:

The main features separating the genus *Armascirus* from other genera of the subfamily cunaxiinae are Palpal segment II (basifemur) with a simple dorsal seta; palpal segment III (Telfemur) with a spine-like dorsal seta; apophysis present on palpal segment IV (genu); the female palp with a median spine – like apophysis on segment III, which is lacking in the males. Dorsal plates reticulated, the dorsal chaetotaxy includes two pairs of fine setae trichobothria (vi and sce), the posterior pair (sce) is the longest, six pairs of tactile setae in dorsocentral and three pairs of dorso-lateral series. Anal region with a pair of anal setae and two pairs of para-anal setae. Chaetotaxy of telofemora I-IV: 4 sts (simple tactile setae) - 4 sts - 3sts, 1ms (micosea) - 3sts, 1ms

***Armascirus jasmine* Bashir, Afzal & Khan**

Differential diagnosis *Armascirus jasmine* looks like *A. akhtari* Bashir, Afzal & Khan in having hysterosomal lateral reticulated shields and long apophyses on palp genu but differs in, venter with 6 pairs of simple setae between coxa II and genital region in *A. akhtari* while in *A. jasmine* it has 7 pairs of ventral setae. Distances between basis of c1-c1 20 times the length of c1 in *A. rafalskii* while in *A. jasmine* c1 longer, the distance between the bases of c1-c1 less than 10 times the length c1. Also *A. jasmine* looks like *A. asghari* Bashir & Afzal in having 7 pairs setae between coxae II and genital region while differs in *A. jasmine* has basifemora I-IV with 5-5-3-2 setae; genu I with 7 setae while in *A. asghari* basifemora I-IV with 4-5-4-2 setae; genu I with 8 setae.

female Description– idiosomal length 395mm, width 279mm - Dorsum(fig.1.) Dorsum propodosoma with a reticulate subrectangular shield with dimensions 229&125mm. Propodosomal shield reaching to anterior region of hysterosoma ,bearing a pair of anterior(vi) and posterior (sce). Setae trichobothria with length 218 &333 mm respectively and also 2 pair of tactile setae (ve and sci with length 17&10 mm. Distance between bases of vi-vi and sce-sce 106 mm and 145 mm. Propodosomal separated from hysterosoma by fine striae. circula fine stria r around the lateral platelets which located lateral of setae sce and c2 also fine stria between e1-e1.

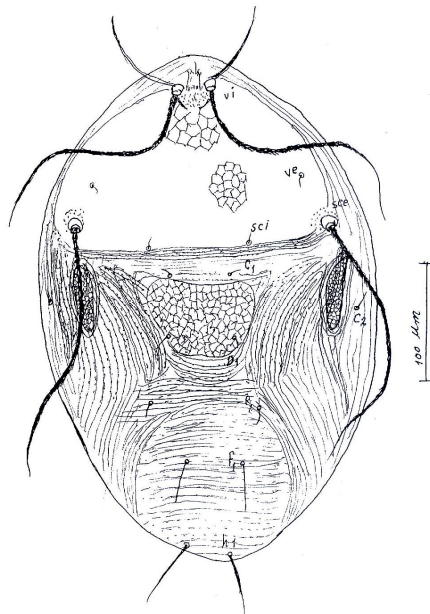


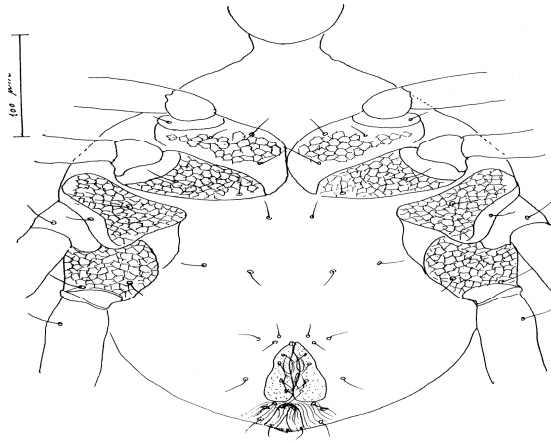
Fig 1. Dorsum of Armoscirus jasmine

Hysterosoma with reticulate subrectangular hysterosomal median shield with dimensions; long base in the front with 89 mm, short base posteriorly 45 mm and the distance between them 69mm carrying the dorsal one pair of setae(d1) with length 13 mm. A pair of lateral reticulated platelets with length 83 mm.

Six pairs of tactile dorsal setae present on hysterosoma the first four pairs, c1, c2, D1and e1 setae with length 8,8,13 and 27mm respectively. Distance between bases of setae ci,ci about 58mm less than 10 times the length of setae c1. The longest two pairs of dorsal setae are f1, h1, with length 35&38 mm respectively.

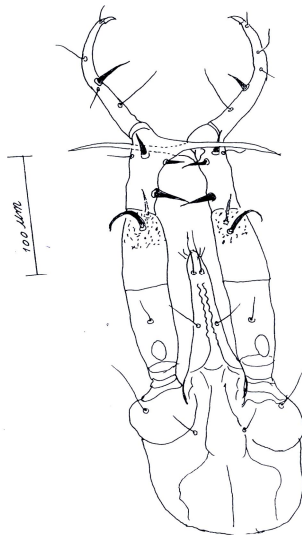
Distance between bases of setae c1-c1 about 7 times length c1; d1-d1 about 7 times length d1; e1-e1 about 2 times longer e1; 27mm

Distance e1-e1 1.5 equal 95mm is f1 95mm, is 2-5 times of length f1, length oh h1 37mm, 1.5 times of distance h1-h1

Venter: (fig.2)Fig 2. Venter of *Armascirus jasmine*

Venter with papillated striations. Coxal plates weakly sclerotized, coxae I-II and III-IV contiguous and finely reticulate, reticulation similar to those of dorsal shields, but three times smaller in diameter. Setal formula of coxae I-IV as follows: 3-2-2-2, there is one simple pair of setae between coxae II, 2 pairs of simple setae between coxae III, 3 pairs of simple setae anterior of genital plate and one pair of setae on each side of genital plate. Then between coxae II and genital plate 7 pairs of simple setae. Each valve of genital plate carries 4 simple setae g1-g4 gradually increase in length from anterior to posterior and also carries two genital suckers genital plate oval in shape.

Anal setae (a) one pair, paranal setae (pa) 2 pair's posterior of genital plate (fig.2)

Gnathosoma (fig.3)Fig 3. Gnathosoma and Hypostome of *Armascirus Jasmine*Fig 5. Palp of *Amascirus jasmine*

Ganthosoma 435 long and 112 wide. Hyposoma papillate, subrectangular in shape and cone-shaped distally 239mm in length and 112mm in width; with 4 pairs simple hypognathal setae (hg1-hg4) 16-19-12 and 48 mm in length respectively, and two pairs adorsal setae (fig3).

Palp (fig 5) segmented, all segments papillate, measuring 363 mm chaetotaxy of palp as follow: trochanter none basifemur with one simple setae, telofemur with one bend apophysis and one spine setae; genu with one longtriangular apophysis with 75 mm length, 3 spine setae and one simple setae; tibiotsarsus bend with 115mm in length terminating in a small clow, with 4(1 long-3 small) simple setae, and one thick, stout spine –like setae (fig.3)

Chelicera : (fig 4) 170 mm long, terminating in a clow dorsal and ventral sides with lobes, with one dorsolateral simple setae (fig. 5).

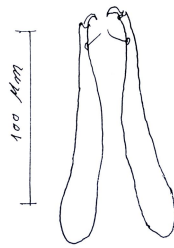


Fig 4. Chelicera Fig 5. Palp of *Amascirus jasmine*

Legs: (fig.6): Legs I-IV measuring (from trochanter base to the tip of tarsus) 469,364,427 and of *Armascirus kaha* 510mm respectively. All legs papillate, tarsi I-IV long slender and attenuated. Terminating in conspicuous lateral bilobed flanges. Caetotaxy of legs I-IV as follows: Coxae:3-2-3-2 ,Trochanter :1-1-2-1 ,Basifemora :5-5-3-2 ,Telifemora :5-5-4-5 ,Genu :8-6-5-7 ,Tibia :6-5-5-4 ,Tarsi :20-20-11-11 .



Fig 6. Legs of *Armascirus jasmine*

Type: Holotype and paratype female collected from debris under cotton cultivars near Kaha research station in Qalyobia governorate, Egypt.

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تسجيل لأول مرة لنوع *Armascirus jasmine* Bashir, Afzal & Khan من عائلة *Cunaxidae* في مصر

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قسم اكاروس الفاكهة ، معهد بحوث وقاية النباتات مركز البحوث الزراعية ، جيرة مصر

تم اعادة رسم ووصف للنوع *Armascirus jasmine* Bashir, Afzal & Khan من عائلة *Cunaxidae* كتسجيل لأول مرة في مصر بمحافظة القليوبية في الاوراق المتحللة تحت شجيرات القطن .

تمتاز انواع جنس الارماسكيرس بوجود امتداد متغلظ في الركبة للملمس ومتقاطع مع الامتداد من الملمس المقابل ولا يوجد هذا التركيب في الذكر و يمتاز هذا النوع عن نوع *A.akhtari* بوجود ستة ازواج من الشعيرات البطنية بين حرقفة الزوج الثاني من الارجل والصفحة التناسلية بدلا من سبعة ازواج في الاختارى.