NEW SPECIES OF LAELAPIDAE AND ASCIDAE FROM EGYPT : GENERA *ANDROLAELAPS* AND *BLATTISOCIUS* (ACARI: GAMASIDA)

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ACARI, GAMASIDA, LAELAPIDAE, ASCIDAE, *ANDROLAELAPS BAYOUMI* N.SP., *BLATTISOCIUS APIS* N. SP., *B. CAPSICUM* N. SP., EGYPT.

SUMMARY :A laelapid and two ascid mite species are recorded and identified as new to science. The laelapid *Androlaelaps bayoumi* n. sp. was found to be phoretic on honeybee workers, *Apis mellifera* L., in the Kom — Hamada district, Behira Governorate, Egypt. *Blattisocius apis* n. sp. was collected from a brood of *A. mellifera* in Moshtohor district, Qualubia Governorate, Egypt ; while *B. capsicum* n. sp. occurred in association with the immature stages of a psocopterous insect inhabiting the stored hot pepper, *Capsicum annuum* L. in Zagazig district, Sharkia Governorate, Egypt.

ACARI, GAMASIDA, LAELAPIDAE, ASCIDAE, *ANDROLAELAPS BAYOUMI* N.SP., *BLATTISOCIUS APIS* N. SP., *B. CAPSICUM* N. SP., EGYPTE.

RÉSUMÉ : Un laelapidé et deux ascidés nouveaux sont décrits : *Androlaelaps bayoumi* n. sp. est phorétique des ouvrières d'abeille, *Apis mellifera* L., à Kom — Hamada district, Behira Governorate, Egypt. *Blattisocius apis* n. sp. est récolté sur *A. mellifera* dans le Moshtohor district, Qualubia Governorate, Egypt ; alors que *B. capsicum* n. sp. a été récolté associé aux stades immatures du psocoptère dans les lieux de stockage de *Capsicum annuum* L. (Zagazig district, Sharkia Governorate, Egypt) .

Since the erection of the laelapid and ascid genera *Androlaelaps* Berlese and *Blattisocius* Keegan, several species have been described from various habitats in different parts of the world. *A. aegypticus*, *A. zaheri* and *A. reticulus* were described in Egypt by HAFEZ *et al.*, (1982). MABROUK (1988) identified *A. bakeri*, while *A. sharkiensis* was described by AHMED (1987). IBRAHIM & ABDEL-SAMAD (1990) described, *A. orientalis*, while *A. casalis* Berlese was found by ZAHER (1986). In 1988, both FOULY & MABROUK reported the occurrence of *B. tarsalis* Berlese, *B. keegani* Fox and *B. dentriticus* Berlese in Egypt. In this work three species of the families Laelapidae and Ascidae are described as new species, namely *Androlaelaps bayoumi, Blattisocius apis* and *B. capsicum.* The ascid species were identified according to the nomenclature OF LINDQUIST & EVANS (1965). All of the types are in the collection of the Plant Protection Department, Faculty of Agriculture, Zagazig University, EGYPT.

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All measurements in the descriptions to follow are in micrometers.

Genus *Androlaelaps* Berlese

Key to the Egyptian species of the genus *Androlaelaps* (Laelapidae Berles) (based on females)

1. Dorsal shield with unpaired setae in the *J* series 3
– Dorsal shield lacking unpaired setae in the *J* series . 2
2. Dorsal shield with 39 pairs of setae, posterior margin of the genitoventral shield far from the anal shield .... *A. reticulus* Hafez *et al.*
– Dorsal shield with 35 pairs of simple setae, genitoventral shield vase-shaped, with nearly round posterior end, ornamented with longitudinal striae anteriorly and oblique striae posteriorly ; with a single pair of elongate metapodal plates ..... *A. sharkiensis* Ahmed.
3. Dorsal shield with one unpaired seta 4
– Dorsal shield with more than one unpaired seta.... 6
4. Dorsal shield with 40 pairs of setae, posterior end of the genitoventral shield far from the anterior margin of the anal shield, cheliceral fixed digit with 3 teeth and a *pilus dentilis*, movable digit with two teeth..... ..... *A. (Haemolaelaps) orientalis* Ibrahim & Abdel-Samad.
– Dorsal shield with 41 pairs of setae pilus dentilis with a large base, movable digit with two teeth .... *A. zaheri* Hafez *et al.*
6. Dorsal shield with three unpaired setae, genitoventral shield tongue shaped with arch like striae on the posterior two thirds, with posterior edge hardly reaching the anterior margin of the anal shield, femur II with a stout rod-like spur ..... *A. aegypticus* Hafez *et al.*
– Dorsal shield with two unpaired setae 7
7. Genitoventral shield smooth flask-shaped with a posterior edge hardly reaching the anterior margin of the anal shield, cheliceral fixed digit with one tooth and a well developed pilus dentilis expanded towards the base, movable digit with two teeth ..... *A. casalis* Berlese.
– Genitoventral shield smooth, with lateral side parallel behind genital setae ; cheliceral fixed digit with four small teeth and a dagger-like pilus dentilis, movable digit bidentate ..... *A. bakeri* Mabrouk.

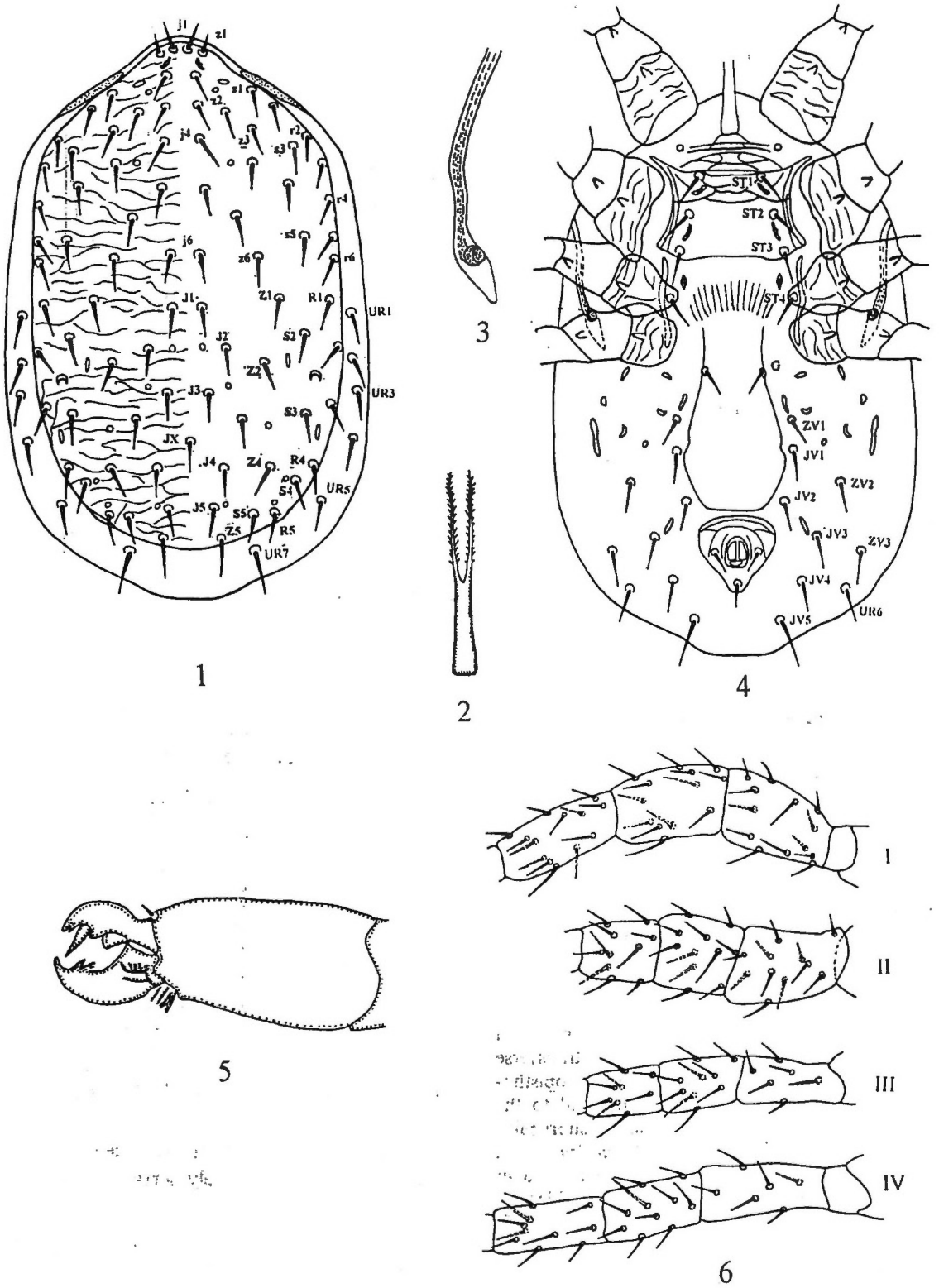
Androlaelaps bayoumi n. sp.

(Figs. 1-6)

DIAGNOSIS : This species is closely allied to *A. bakeri* Mabrouk (1988), but differs in having a reticulated dorsal shield bearing 41 pairs of setae, in addition to having one unpaired seta *JX* between *J* series. Genitoventral shield elongate, tongue-shaped, extending posteriorly to the anterior margin of the anal shield. Cheliceral fixed digit with a large basal tooth and a minute distal one, in addition to a strongly well developed pilus dentilis, movable digit bidentate.

FEMALE : Body elongate, tending to be much narrowed anteriorly, brown in colour when alive, measuring 563 long and 372 wide. Dorsal shield with a rather distinct reticulation, bearing 22 pairs of subequal simple setae (26-28) on the podonotum ; setae j_1 and z_1 seems to be shorter than the others, measuring 17 and 12 respectively. Opisthonotum bearing 19 pairs of simple subequal setae (30-33), in addition to one unpaired seta *JX*, of which setae Z_5 is the longest (Fig.1). With 13 pairs of pore-like openings on the shield. Six pairs of simple setae inserted in the lateral soft integument.

Ventrally (Fig. 4), tritosternum well developed, with two long serrate laciniae (Fig. 2), presternal area reticulate, with a pair of small circular pores ; sternal shield wider than long, slightly concaved posteriorly, reticulate anteriorly, bearing 3 pairs of subequal simple setae (32-34), and two pairs of lyriform pores, shield measuring 88 long and 112 wide. Metasternal setae (*ST4*) free in the integument. With a pair of small pores located posterior to the sternal shield ; endopodal plate extending anterolateral to coxae III and IV. Genitoventral shield smooth, elongate tongue-shaped, expanded posteriorly to reach the anterior margin of the anal shield, with a pair of gential setae (*G*). Anal shield reticulated, nearly triangular, measuring 83 long, with a broadest width of 82 and bearing a pair of para-anals and a single postanal. Two pairs of metapodal plates,the posterior being elongate and measuring 37. Five pairs of small platelets and a pair of small circular pores existing laterad to genitoventral shield. Opisthogastric integument with 9 pairs of simple subequal setae (32-34), with setae JV5 the longest (41). Coxae I-IV demar-



Figs. 1-6. *Androlaelaps bayoumi* n. sp., adult female.1 — Dorsal view. 2 — Tritosternum. 3 — Peritreme. 4— Ventral view. 5 — Chelicera. 6 — Femur, genu, tibia of legs I-IV.

cated with faint transverse striae. Anterior peritrematic extremity surpassing the origin of setae s_1. Cheliceral fixed digit with a large basal tooth and a minute distal one and a strongly developed pilus dentilis, an arthrodial brush occurring at the base of the movable digit, which bears two teeth (Fig. 5). Chaetotaxic formula of legs I, II, III, IV, femora (13-11-6-6), genua (13-11-9-10), tibiae (13-10-8-10) respectively (Fig. 6, I-IV).

MALE : Unknown.

HOLOTYPE : A female collected from honeybee workers *Apis mellifera* L. at Kom-Hamada, Behira Governorate, Egypt, at 24 November 1998.

PARATYPES: Four females collected from the abovementioned host and locality.

This species is named in the honour of Professor Dr. BAYOUMI MOHAMED BAYOUMI, late perofessor of Zoology, Faculty of Science, Tanta University, Egypt

Genus: *Blattisocius* Keegan
(Ascidae Voigts & Oudemans)

Key to the Egyptian species
of the genus *Blattisocius* Keegan
(Based on females)

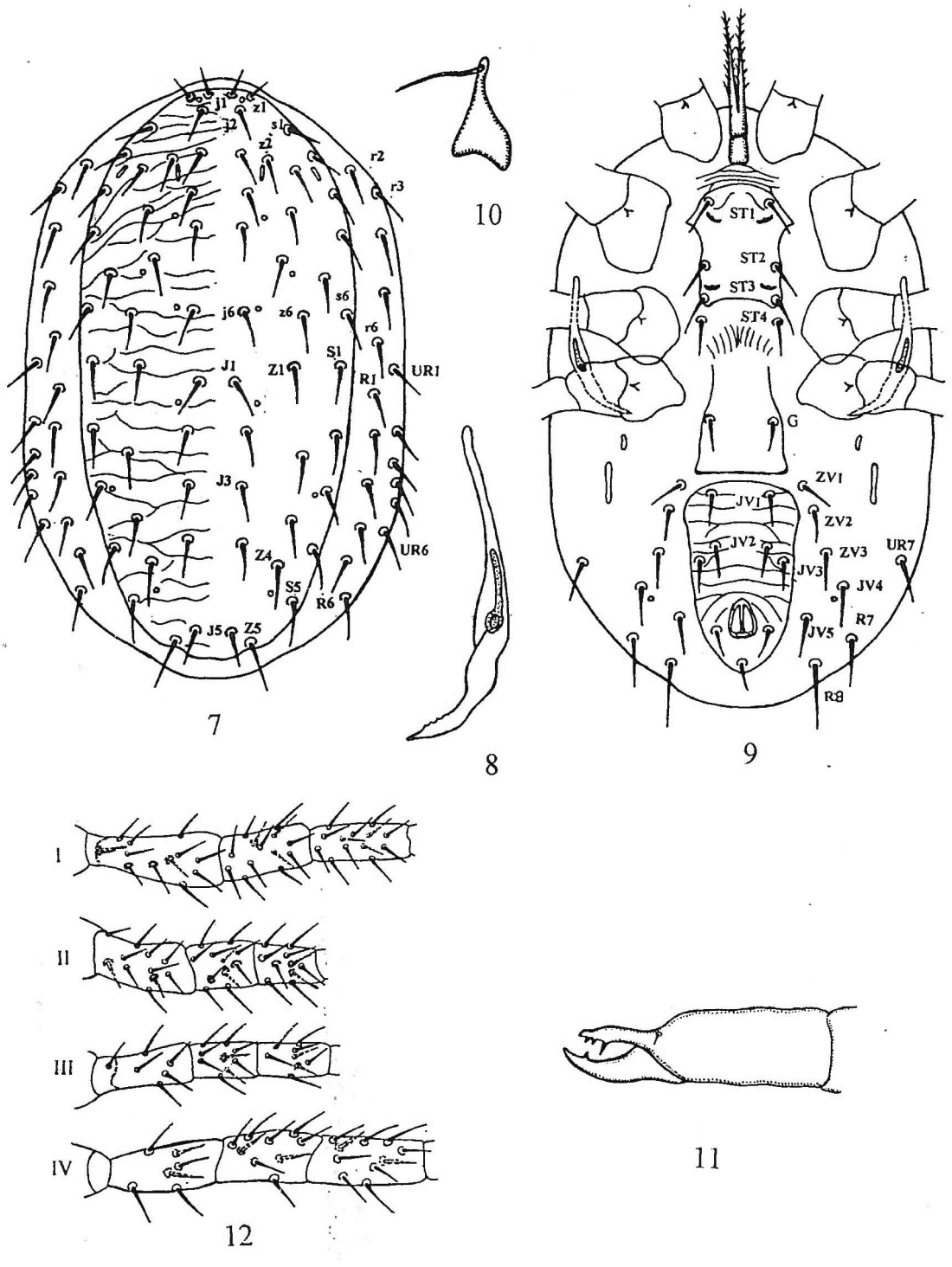
1. Dorsal shield setae simple, subequal, shorter than distances between their bases, sternal shield rectangular ..... 2.
– Dorsal shield setae longer than distances between their bases ..... 4.
2. Interscutal integument ornamented with longitudinal striae ; dorsal shield smooth, except a faint transverse striae located on the lateral margins of the opisthosoma ; cheliceral fixed digit slender, subequal to the movable digit and bearing two teeth and a short pilus dentilis ..... *B. capsicum* n. sp.
– Interscutal membrane smooth. Cheliceral fixed digit shorter than the movable digit, movable digit unidentate ..... 3.
3. Dorsal shield covered with a distinct network of striae ; ventrianal shield nearly rectangular, covered with transverse striae, with three pairs of setae ; fixed cheliceral digit unidentate..... *B. keegani* Fox.
– Dorsal shield covered with a faint transverse striae, ventrianal shield nearly triangular, cheliceral fixed digit bidentate, with a short pilus dentilis .... *B. apis* n. sp.
4. Dorsal shield covered with a wide network of striae and scattered ones on the posterior part of the proscutum, dorsal setae simple, stout, setae Z_5 slightly pilose ; metasternal shield incorporated with the posterolateral parts of the quadrate sternal shield ; ventrianal shield nearly triangular, covered with a network of striae and bearing 4 pairs of preanals, cheliceral fixed digit subequal to the movable digit, multidentate, with a short pilus dentilis ..... *B. dentriticus* Berlese.
– Dorsal shield covered with a heavy network of striae, dorsal setae slightly pilose, metasternal setae free in the integument ; ventrianal shield elongate pentagonal with transverse striae and 3 pairs of preanals; cheliceral fixed digit distinctly shorter than the movable digit, edentate, with a long pilus dentilis, movable digit tridentate ..... *B. tarsalis* Berlese.

***Blattisocius apis* n. sp.**
(Figs. 7-12)

DIAGNOSIS : This species is closely allied to *B. keegani* FOX. (MCGRAW AND FARRIER 1969), but differs in having the dorsal shield covered with faint transverse striae, ventrianal shield nearly triangular ; cheliceral fixed digit slender, slightly shorter than the movable digit, bearing two teeth and a short pilus dentilis.

FEMALE : Body oval in shape, brown in colour when alive, measuring 462 long, 295 wide. Dorsal shield covered with faint transverse striae, with 33 pairs of simple setae, almost subequal (30-33), shorter than distances between their bases. Setae Z_4 and S_5 of the same length (38), slightly longer than the others ; setae j_1 (20) and setae z_1 (16) seems to be the shortest, while setae Z_5 is the longest (43) (Fig. 7), with at least 18 of pore-like openings on the dorsal shield. Interscutal membrane bearing 17 pairs of simple subequal setae (33-34).

Ventrally, tritosternum well developed, with a short base and two finely serrate laciniae (Fig. 9). Presternal area covered with transverse striae ; sternal shield smooth, longer than wide, measuring 109 long and 74 wide, with 3 pairs of simple setae (*ST1-ST3*) and 2 pairs of lyriform pores. Metasternal setae (*ST4*) free in the integument ; with a pair of pores



Figs. 7-12. *Blattisocius apis* n. sp., adult female. 7— Dorsal view. 8— Peritreme. 9— Ventral view. 10— Spermatheca. 11— Chlelicera. 12— Femur, genu, tibia of legs I — IV.

located just behind the sternal shield. Epigynial shield truncate posteriorly and with a pair of epigynial setae (*G*). Ventrianal shield nearly triangular, covered with transverse striae measuring 162 long, with broadest width of 95 and having 3 pairs of preanal setae (*JV1*, *JV2*, *JV3*). Area surrounding ventrianal shield with 8 pairs of simple setae and a pair of small circular pores posteromediad from setae *JV4* (Fig. 9). Two pairs of metapodal plates, of which the anterior pair is 10 long and the posterior pair 32. Peritreme short (Fig. 8) ; cheliceral fixed digit slightly shorter than movable digit, bearing 2 teeth and a short pilus dentilis ; movable digit unidentate (Fig. 11). Spermatheca bell-shapd, with short cervix and a rather narrow major duct (Fig. 10). Chaetotaxic formulae of legs I, II, III, IV respectively as follows : femora (12-11-6-6); genua (13-11-9-9) ; tibiae (13-10-8-10) (Fig. 12, I-IV).

MALE : Unknown.

HOLOTYPE : A female collected from the honey bee *Apis mellifera* L. at Moshtohor district, Qualubia Governorate, Egypt, at 9 July 1998.

PARATYPES : Two females collected from the previous habitat.

Blattisocius capsicum **n.sp.**

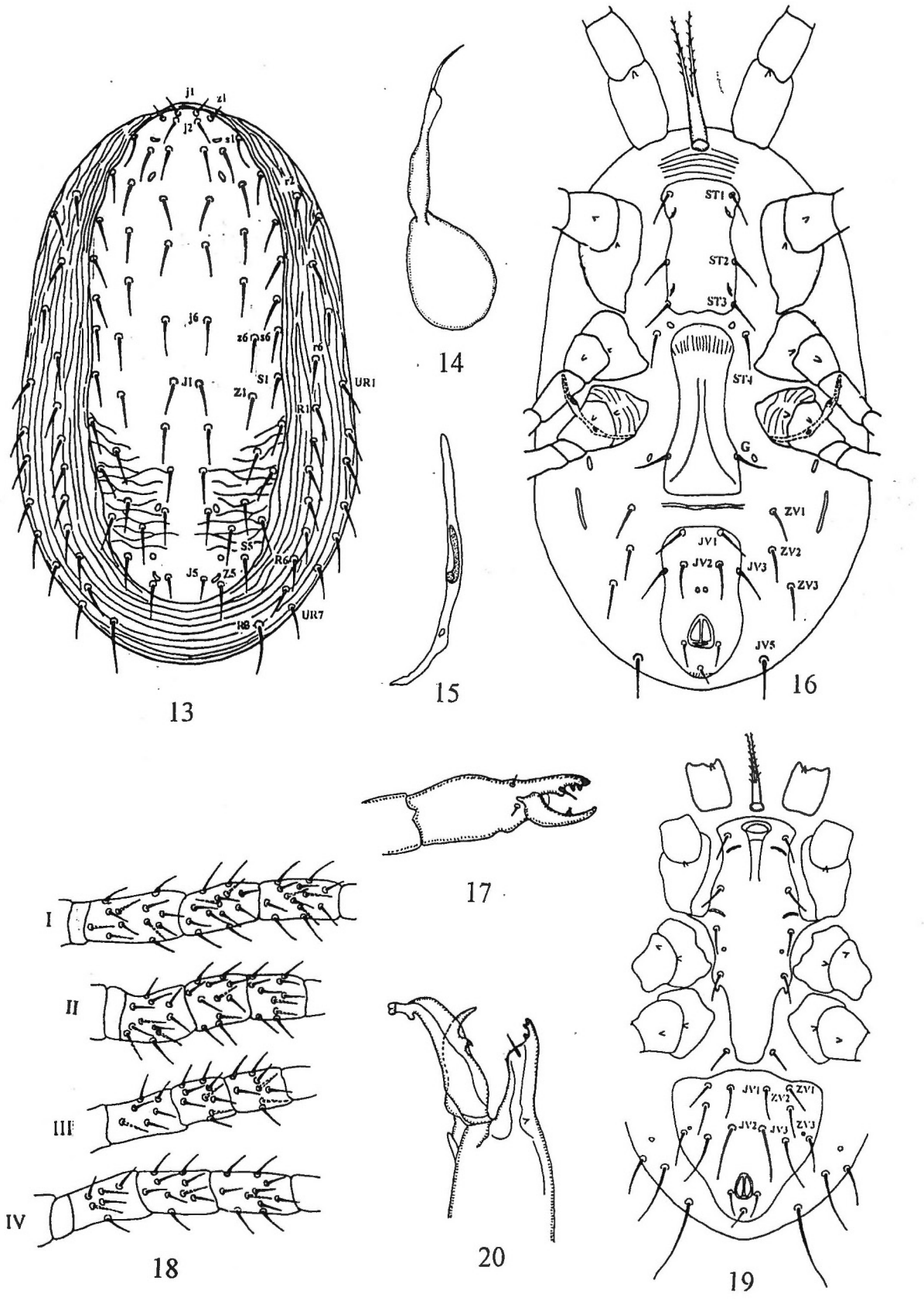
(Figs. 13-20)

DIAGNOSIS : This species is closely related to *B. keegani* Fox. (McGraw and Farrier 1969), but differs in having a smooth dorsal shield, except for network of striae on the lateral margin of the opisthosoma ; interscutal membrane ornamented with longitudinal striae ; sternal shield smooth, much longer than wide, cheliceral fixed digit slender, subequal to the movable digit and bearing 2 teeth and a short pilus dentilis.

FEMALE : Body oval, light brown in colour when alive, measuring 430 long and 288 at broadest width. Dorsal shield smooth except for the lateral margin of the opisthosoma which bear a network of striae, with 33 pairs of simple subequal setae of 24-26, setae *z1*, *j1*, *j5* appearing to be shorter than the others, measuring 12, 14, 21 respectively (Fig. 13). With 5 pairs of pore-like opening on the dorsal shield. Interscutal membrane ornamented with longitudinal striae parallel to shield border.

Ventrally, (Fig. 16), tritosternum with a short base and a pair of short feathered laciniae ; presternal area ornamented with transverse striae. Sternal shield smooth much longer than wide, with posterior edge undulate, with 3 pairs of short simple setae and 2 pairs of lyriform pores, measuring 120 long and 64 wide. Metasternal setae (*ST4*) free in the integument. A pair of small pores locating posterior to sternal shield. Epigynial shield truncate posteriorly, with a pair of epigynial setae (*G*). Ventrianal shield nearly pentagonal, slightly concave laterally, measuring 110 long with a broadest width of 73 bearing 3 pairs of preanals and a pair of small circular pores posteromediad from setae *JV2* with a pair of small circular pores laterad from the epigynial shield ; four pairs of simple setae on the membrane surrounding the ventrianal shield. Two pairs of elongate metapodal plates, of which the posterior pair is longer than the anterior one, measuring 33 and 9 respectively. Coxae IV ornamented with faint transverse striae. Cheliceral fixed digit slender, nearly subequal to the movable digit bearing 2 teeth and a short *pilus dentilis*, movable digit unidentate (Fig. 17). Spermatheca with an elongate cervix (28) and a distinct major duct (Fig. 14). Legs with chaetotaxic formulae of femora, genua and tibiae as follows 12-11-6-6, 13-11-9-9, 13-10-8-10 (Fig. 18, I — IV).

MALE : (Figs. 19 & 20) Smaller than female, with dorsal shield of 324 long and 218 wide. Sternogenital shield smooth of 185 long and 73 wide, bearing 5 pairs of simple setae and 2 pairs of lyriform pores, in addition to a pair of small circular one. Ventrianal shield nearly an equilateral triangle, of 116 long and 136 wide, with 6 pairs of short simple setae, of which setae *JV3* and *JV2* are much longer than others, measuring 34 and 36 respectively, with a pair of small circular pores anteromediad from setae *ZV3* (Fig. 19). Spermatodactyl shank elongate and distended, tending to be slightly narrow anteriorly where it bends ventrad to form a short narrow pistol-shaped tip. Cheliceral fixed digit with 2 teeth and a short pilus dentilis, movable digit unidentate (Fig. 20).



FIGS. 13-20. *Blattisocius capsicum* n. sp. Female: 13— Dorsal view. 14— Spermatheca 15— Peritreme. 16— Ventral view. 17— Chelicera. 18— Femur, genu, tibia of legs I—IV. Male: 19— Ventral view. 20— Spermatodactyle.

HOLOTYPE : A female found in association with immature stages of a pscopterous insect inhabiting the stored hot pepper *Capsicum annuum* L. in the Zagazig district, Sharkia Governorate, Egypt at 5 September 1998.

ALLOTYPE : A single specimen collected from the abovementioned habitat and locality.

PARATYPES : Five females and 3 males collected at the same habitat and locality.

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