TWO NEW SPECIES OF THE FAMILY PHYTOSEIIDAE FROM EGYPT (ACARI: PHYTOSEIIDAE)

BY Abdel-Aziz E. BASHA[1] and Abdel-Tawab A. YOUSEF[2]

(*Accepté Avril 1999*)

PHYTOSEIIDAE
PROPRIOSEIOPIS SHARKIENSIS N. SP.
PHYTOSEIUS KASSASINI N. SP.
EGYPT

SUMMARY: Two new phytoseiid species, *Proprioseiopsis sharkiensis* n. sp. and *Phytoseius kassasini* n. sp., are described and illustrated. The former species was collected from grapevine leaves, *Vitis vinifera* L., and the latter from apple trees, *Malus pumila* (L.), in Egypt.

PHYTOSEIIDAE
PROPRIOSEIOPIS SHARKIENSIS N. SP.
PHYTOSEIUS KASSASINI N. SP.
EGYPTE

RÉSUMÉ : Deux nouvelles espèces de phytoséiides, *Propriosopis sharkiensis* n. sp. et *Phytoseius kassasini* n. sp., sont décrites et illustrées. Elles sont récoltées respectivement sur feuilles de vigne (*Vitis vinifera* L.) et sur pommier (*Malus pumila* (L.)) en Egypte.

INTRODUCTION

A survey conducted recently in Egypt indicated the presence of two new phytoseiid species: *Proprioseiopsis sharkiensis* n. sp., collected from grapevine leaves, *Vitis vinifera* L.; and *Phytoseius kassasini* n. sp., collected from apple trees, *Malus pumila* (L.).

The two new species were identified according to the publications of CHANT (1959, 1965), SCHUSTER & PRITCHARD (1963), DENMARK (1966), MUMA & DENMARK (1970) and YOSHIDA-SHAUL & CHANT (1995). All measurements are given in micrometres. The setal nomenclature follows that of CHANT & MCMURTRY (1994). The holotype and paratypes of both species are deposited in the collection of the Plant Protection Department, Faculty of Agriculture, Zagazig University, Egypt.

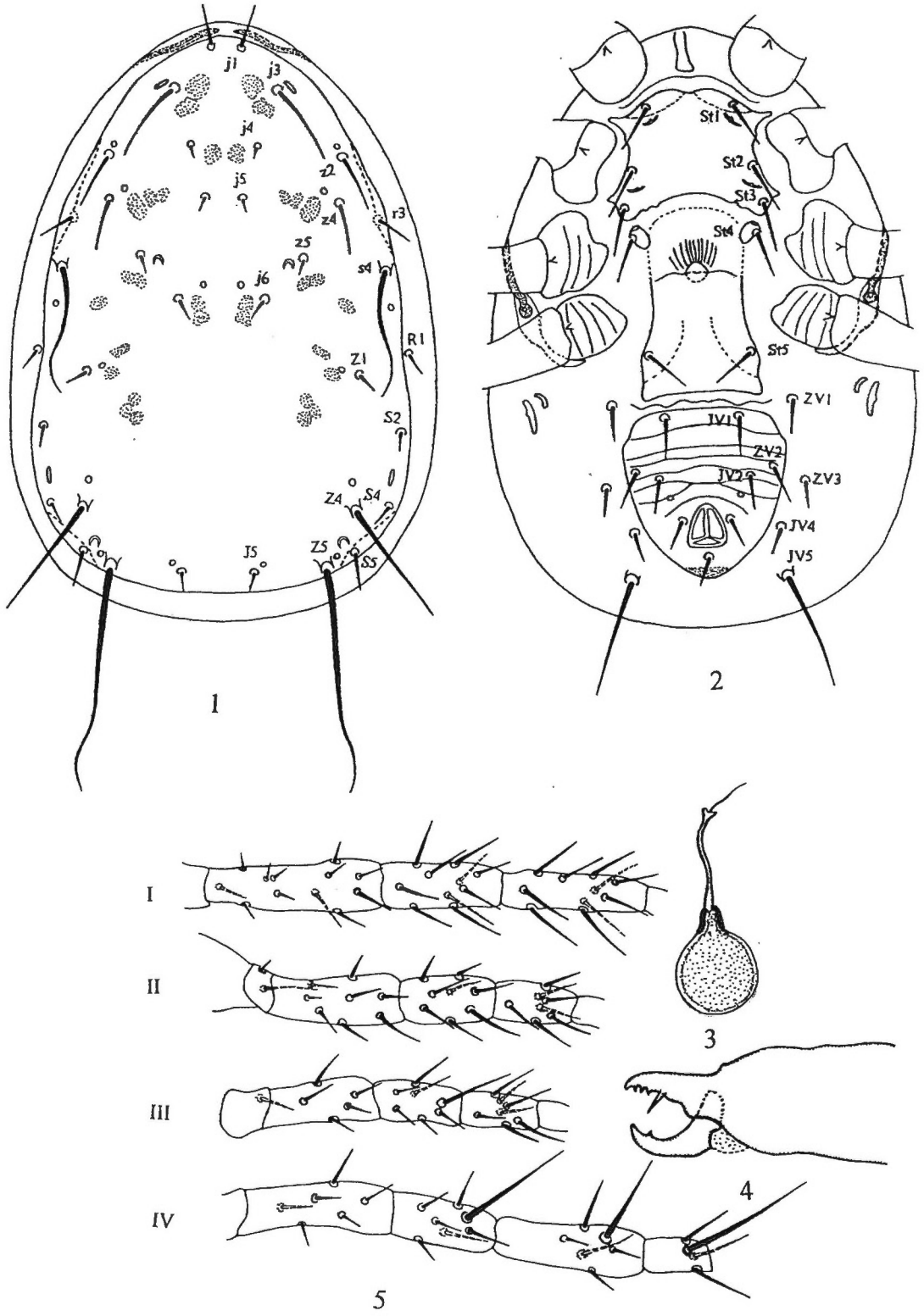
Proprioseiopsis sharkiensis n. sp.

(Figs. 1–5)

DIAGNOSIS: This species is close to *P. messor* Wainstein (SCHICHA 1983) and *P. cabonus* Schicha & Elshafie (1980) in having dorsal shield with 16 pairs of setae, the metasternal shield with a pore on its anterior end and leg IV with three macrosetae, but differs in having setae r_3 arising on the ventral bent area of the shield, setae s_4, Z_4 and Z_5 smooth and arising on distinct tubercles, and the spermathecal cervix narrow and long, with a small funnel-shape proximal end.

FEMALE: Body oval, with a much narrower anterior end, well sclerotized, colour in life reddish-yellow. Dorsal shield smooth, except for faint scattered patches of various shapes and sizes, 374 long and 254 wide; with 12 pairs of pores, of which 8 pairs are

1. Plant Protection Department, Faculty of Agriculture, Zagazig University, Egypt.
2. Agriculture Zoology Department, Faculty of Agriculture, Mansoura University, Egypt.



FIGS. 1–5: *Proprioseiopsis sharkiensis* n. sp., adult female.

1 — Dorsal view. 2 —Ventral view. 3 — Spermatheca. 4 — Chelicera. 5 — Femur, genu, tibia of legs I–IV and basitarsus IV.

minute circular, 2 crescentic and elongate pairs. Sixteen pairs of simple setae occurring on the dorsal shield: 8 lateral pairs, 3 medio-lateral and 5 dorso-central, including j_1 and J_5. Two pairs of sublateral setae, setae r_3 occurring on the latero-ventral part of the shield, whereas setae r_1 located on the interscutal membrane. Setae s_4, Z_4 and Z_5 each arising on distinct tubercles, that of the latter being the longest. Setal measurements: $j_1 = 24$; $j_3 = 55$; $j_4 = 6$; $j_5 = 8$; $j_6 = 11$; $z_2 = 36$; $z_4 = 32$; $z_5 = 9$; $Z_1 = 10$; $Z_4 = 73$; $Z_5 = 136$; $s_4 = 82$; $j_5 = 11$; $S_5 = 19$; $r_3 = 19$; $R_1 = 12$ µm. The anterior peritremal end surpassing the origin of setae j_1, reaching mid-way between them. Sternal shield smooth, wider than long (Fig. 2), measuring 64 long and 93 wide, convex anteriorly, having rather broad lateral edges and a concave posterior margin, bearing 3 pairs of simple setae and 2 pairs of lyriform pores. Metasternal setae arising on nearly elliptical platelets. Epigynial shield slightly concave posteriorly and bearing a pair of simple setae. Ventrianal shield nearly pentagonal, covered with nearly transverse striae, 118 long and 62 wide; bearing 3 pairs of simple preanal setae and a pair of minute circular pores. Setae JV_5 arising on distinct tubercles, appearing to be much longer than setae on integument surrounding ventrianal shield, measuring 66. Two pairs of metapodal plates, the posterior appearing lyriform, much larger than the anterior one. Coxae I–IV with distinct spur, coxae III and IV ornamented with transverse striae. Spermatheca with a well sclerotized anterior wall, cervix narrow and long, with a small funnel-shaped proximal end (Fig. 3). Cheliceral fixed digit with 3 teeth and a pilus dentilis, while the movable one has a single minute tooth at the basal portion of its distal third (Fig. 4). Legs with chaetotaxic formulae of femora, genua and tibiae as follows (Fig. 5, I–IV): 12-10-6-6, 10-8-7-6 + one macroseta of 69 µm, 10-7-7-5 + one macroseta of 42 µm, in addition to another macroseta on basitarsus IV of 76 µm.

MALE: Not captured.

HOLOTYPE: Female collected from grapevine leaves, *Vitis vinifera* L., at Zagazig district, Sharkia Governorate, Egypt, 2 June 1997. PARATYPES: Four females collected from same host and locality.

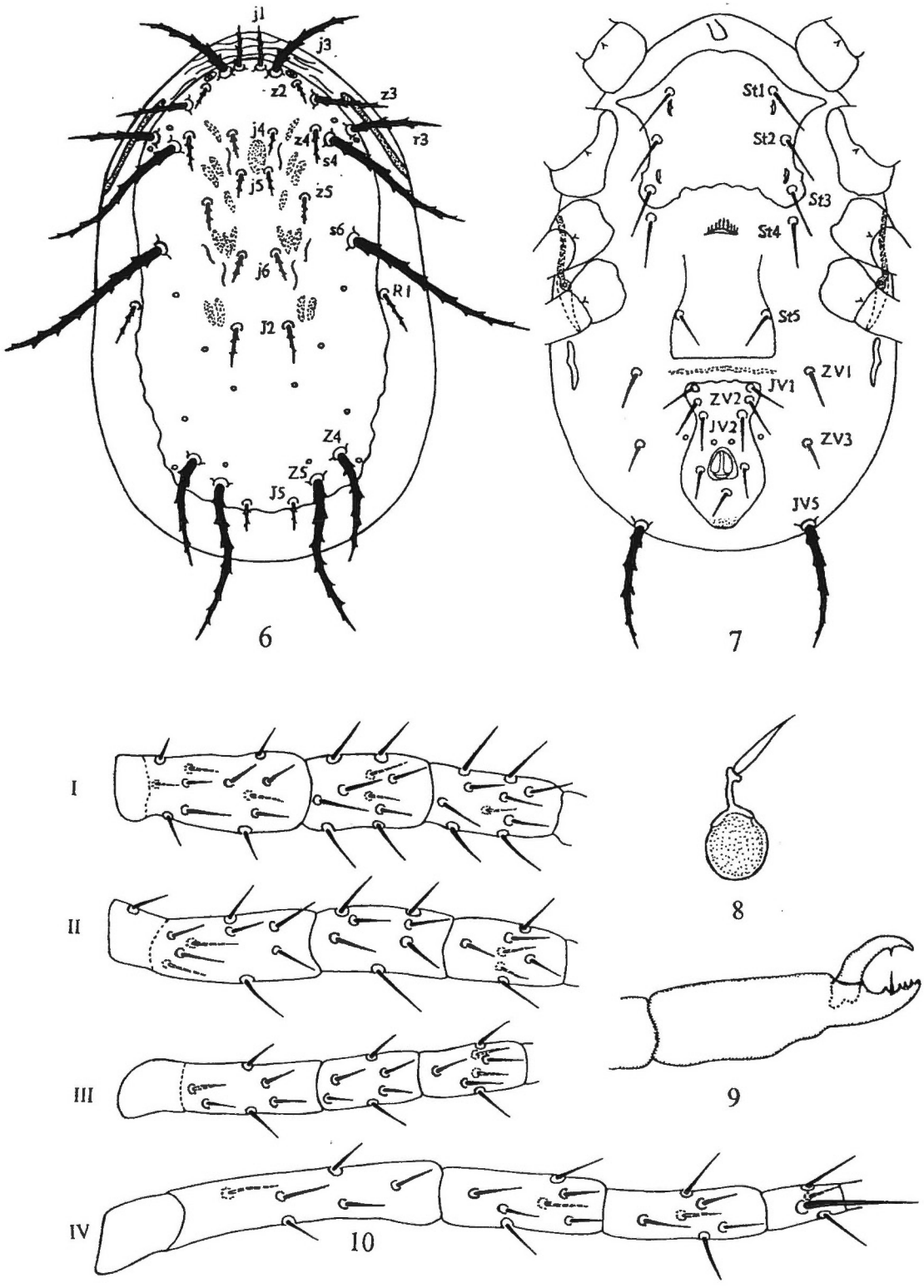
Phytoseius kassasini n. sp.

(Figs. 6–10)

DIAGNOSIS: This species is closely allied to *P. finitimus* Ribaga and *P. balcanicus* Wainstein (WAINSTEIN, 1964; DENMARK, 1966) in having dorsal shield with sixteen pairs of setae, of which setae s_4, s_6, Z_4 and Z_5 arise on distinct tubercles, but differs in having the dorsal shield bearing faint elongate and oval patches between setae z_4 and J_2 and eight pairs of minute circular pores, in addition to an oval pair. Anterior end of peritremal shield approaching the level of setae z_3. Macroseta on basitarsus IV setiform.

FEMALE: Body elongate oval (Fig. 6), colour whitish-yellow when alive. Dorsal shield elongate, undulating posteriorly, 256 long and 124 wide, some scattered elongate and oval faint patches occurring between setae z_4 and J_2. Sixteen pairs of finely serrate setae, including anterior sublateral setae r_3, occurring on the dorsal shield: 7 lateral, 2 medio-lateral and 6 dorso-central pairs. Posterior sublateral setae R_1 on interscutal membrane. Eight pairs of minute circular pores, in addition to an oval pair, the latter usually found on the dorsal shield, between setae j_3 and z_2. Setae j_1, j_3, z_3, r_3, s_4, s_6, Z_4 and Z_5 arising on distinct tubercles. Setal measurements: $j_1 = 20$; $j_3 = 49$; $j_4 = 16$; $j_5 = 17$; $j_6 = 16$; $J_2 = 22$; $J_5 = 10$; $z_2 = 12$; $z_3 = 38$; $z_4 = 21$; $z_5 = 16$; $Z_4 = 58$; $Z_5 = 82$; $s_4 = 77$; $s_6 = 99$; $r_3 = 35$; $R_1 = 22$. Anterior end of peritremal shield approaching the level of setae z_3.

Ventrally, sternal shield nearly quadrate, with convex anterior edge, slightly undulating and concave posteriorly, measuring 65 long and 74 wide; bearing 3 pairs of sternal setae and 2 pairs of minute lyriform pores (Fig. 7). The fourth sternal setae free on the integument. Epigynial shield truncate posteriorly, slightly wider than the anterior region of the ventrianal shield, having a pair of simple epigynial setae. Ventrianal shield nearly vase shaped, with undulating anterior edge, measuring 94 long and 53 wide just anterior to the postanal setae; bearing 3 pairs of preanal setae, which appear slightly longer than any of the para- and postanal setae, and a pair of minute circular pores. Setae JV5 thick, finely serrate, on distinct tubercles and measuring 65 µm. A pair of slender metapodal plates 26 µm long. Spermatheca with a short narrow cervix, ending in a funnel-shaped



FIGS. 6–10: *Phytoseius kassasini* n. sp., adult female.

6 — Dorsal view. 7 — Ventral view. 8 — Spermatheca. 9 — Chelicera. 10 — Femur, genu, tibia of legs I–IV and basitarsus IV.

structure (Fig. 8). Cheliceral fixed digit with four teeth and a pilus dentilis; movable digit with a fine tooth at the base of its terminal third (Fig. 9). Legs with chaetotaxic formulae of femora, genua and tibiae as follows (Fig. 10; I–IV): 12-10-6-6, 10-7-6-7, 10-7-7-6. A moderately long (33 µm) macroseta on basitarsus of leg IV.

MALE: Not captured.

HOLOTYPE: Female found in association with the tenuipalpid mite *Brevipalpus pulcher* (Canestrini & Fanzago), infesting apple trees, *Malus pumila* (L.), at Kassasin Horticultural Station, Kassasin district, Ismaelia Governorate, Egypt, 23 June 1997. PARATYPES: Five females collected from the same host and locality.

REFERENCES

CHANT (D. A.), 1959. — Phytoseiid mites (Acarina: Phytoseiidae) Part II: A taxonomic review of the family Phytoseiidae, with description of 38 new species. — Can. Entomol., **91**: 45-166.

CHANT (D. A.), 1965. — Generic concepts in the family Phytoseiidae (Acarina: Mesostigmata). — Can. Entomol., **97**: 351-374.

CHANT (D. A.) & MCMURTRY (J. A.), 1994. — A review of the subfamilies Phytoseiinae and Typhlodrominae (Acari: Phytoseiidae). — Int. J. Acarol., **20** (4): 223-310.

DENMARK (H. A.), 1966. — Revision of the genus *Phytoseius* Ribaga 1904 (Acarina: Phytoseiidae). — Fla. Dept. Agr. Cons. Serv., Plant Ind. Bull., **6**: 105 pp.

MUMA (M. H.) & DENMARK (H. A.), 1970. — Phytoseiidae of Florida. Arthropods of Florida and neighbouring land areas, 6. — Fla. Dept. Agr. Cons. Serv., Div. Plant Ind., Gainsville: 150 pp.

SCHICHA (E.), 1983. — New species, new records and redescription of phytoseiid mites from Australia, Tahiti and the African region (Acari: Phytoseiidae). — Int. J. Entomol., **25** (2-3): 103-126.

SCHICHA (E.) & ELSHAFIE (M.), 1980. — Four new species of phytoseiid mites from Australia and three species from America redescribed (Acari: Phytoseiidae). — J. Aust. ent. Soc., **19**: 27-36.

SCHUSTER (R. O.) & PRITCHARD (A. E.), 1963. — Phytoseiid mites of California. — Hilgardia, **34** (7): 191-285.

WAINSTEIN (B. A.), 1964. — Two new species of *Phytoseius* (Parasitiformes, Phytoseiidae). — Zool. Zh., **48**: 1741-1743.

YOSHIDA-SHAUL (E.) & CHANT (D. A.), 1995. — A review of the species of Phytoseiidae (Acari: Gamasina) described by A. C. Oudemans. — Acarologia, **36** (1): 3-19.