

TWO NEW SPECIES OF FALSE SPIDER MITES  
OF THE GENUS *BREVIPALPUS* DONNADIEU (ACARINA-TENUIPALPIDAE)  
FROM PUNJAB - PAKISTAN

BY MANSOOR-UL-HASAN<sup>1</sup>, FAIZA BASHIR<sup>2</sup>, WAQAS WAKIL<sup>1</sup> & MUHAMAD AFZAL<sup>1</sup>

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NEW SPECIES,  
*BREVIPALPUS*,  
PUNJAB

**SUMMARY:** The authors collected and described 2 new species *rapii* and *ehsanii* of the genus *Brevipalpus* Donnadieu from Pakistan. Both belong to the *obovatus* group.

## INTRODUCTION

The mites of the genus *Brevipalpus* belong to the family Tenuipalpidae and are commonly known as false spider mites. They are phytophagous and thus serious pests of crops and ornamentals.

The genus *Brevipalpus* was created by DONNADIEU in 1875 based on *Brevipalpus obovatus* DONNADIEU, however, VITZTHUM (1942) was the first to designate it as the type species of the genus. It has now become a large genus in the family Tenuipalpidae. Previously BAKER (1949), PRITCHARD & BAKER (1951, 1958), DELEON (1961, 1965), RIMANDO (1962), MANSON (1963), BAKER & TUTTLE (1964, 1987), Chaudhri (1972), MEYER (1979), SIDDIQUI *et al.* (1979), AHMAD & AKBAR (1984), Chaudhri & AKBAR (1985), OCHOA & SALAS (1987, 1989), AKBAR & AHEER (1990, 1994), HATZINIKOLIS & EMMANOUEL (1991) and BOZAI & BREAM (1995) have contributed a lot to this genus. In Pakistan work of CHAUDHRI (1972), SIDDIQUI *et al.* (1979), AHMAD & AKBAR (1984), CHAUDHRI & AKBAR (1985) and AKBAR & AHEER (1990, 1994) are worth mentioning. The present authors have described 2 new species of the genus *Brevipalpus* from

Punjab — Pakistan. LINDQUIST's (1985) setal notations are followed.

## GENUS *BREVIPALPUS* Donnadieu

**DIAGNOSIS:** Body flat, oval. Dorsum reticulated or striated. Rostral shield present. Palpus 4 segmented, terminal segment with one eupathidium and 1-2 setae. Prodorsal setae 3 pairs; (*v2, sc1, sc2*), dorsocentral opisthosomal setae 1-3 pairs (*c1, d1, e1*), dorso-lateral setae absent; dorsolateral opisthosomal setae 6-7 pairs (*c3, d3, e3, f1, f2, h2* and *h1*). Ventral, genital and anal shields distinct, may be reticulated, striated or smooth. Legs with a pair of claws, pulvilli and tenant hairs.

### 1. *Brevipalpus rapii* n. sp. (FIGS. 1, A-D)

**FEMALE:** Dorsum: Body 230  $\mu\text{m}$  long (without rostrum), 127  $\mu\text{m}$  wide. Prodorsum with reticulations mediolaterally, fading away medially and laterally. Prodorsal setae 3 pairs, serrate:  $v2 = sc1 = 7 \mu\text{m}$ ,  $sc2 = 9 \mu\text{m}$ . Two pairs of eyes present (FIG. 1. A).

2. Department of Zoology, University of Arid Agriculture, Rawalpindi - Pakistan.

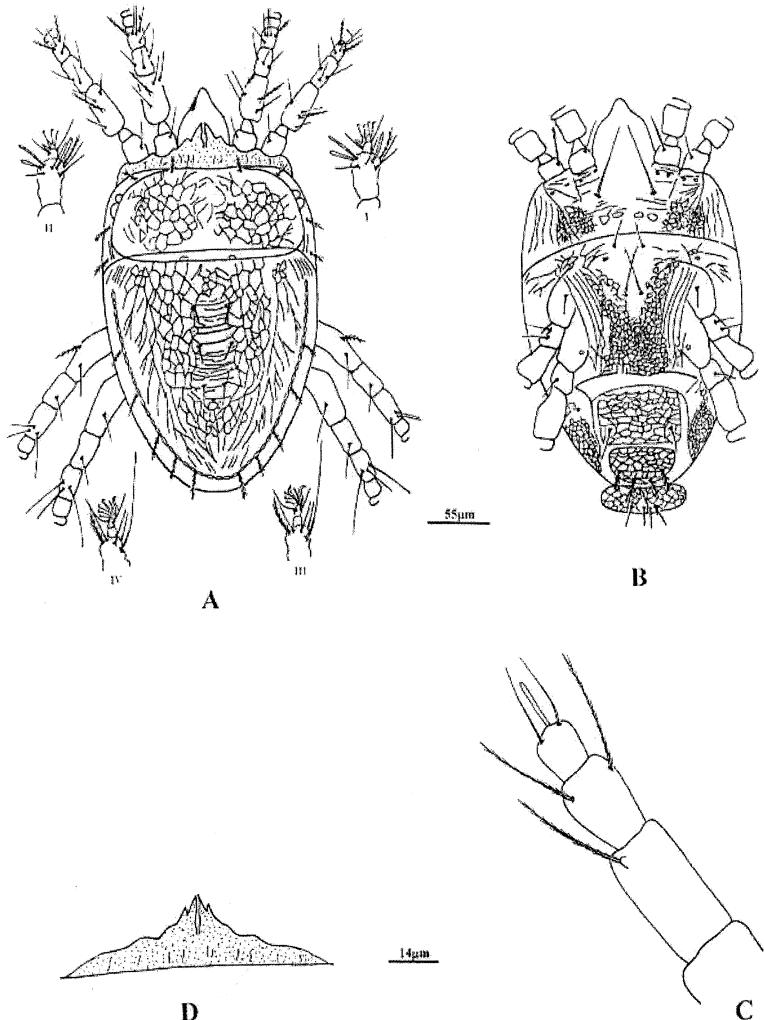


FIG. 1 : *B. rappii* n. sp. A. — dorsal side. B. — ventral side. C. — Palpus. D. — Rostral shield.

Opisthosoma reticulated mediolaterally and behind seta  $e1$ , broken, transverse striations medially from dorsocentral seta  $c1$  setae  $e1$ , diagonal striations marginally (FIG. 1. A). Central setae 3 pairs, simple:  $c1$  9  $\mu\text{m}$ ,  $1d1$  10  $\mu\text{m}$ ,  $e1$  8  $\mu\text{m}$ . Lateral setae 6 pairs, measuring  $c3$  8  $\mu\text{m}$ ,  $d3 = e3 = 6 \mu\text{m}$ ,  $f1 = h2 = 9 \mu\text{m}$ ,  $h1$  6  $\mu\text{m}$  long, lanceolate; serrate, shorter than distances to consecutive setae (FIG. 1. A).

Venter: With a few transverse striations at bases of coxae I and II and a few reticulations at bases of coxae II. Longitudinal lines lateral to coxae III and IV. Metapodosoma with reticulations lateral and posterior a few longitudinal lines in front of coxae III

and IV. Area to setae  $IC4a$  (FIG. 1. B). Intercoxal setae  $IC1a$  one pair, simple, 23  $\mu\text{m}$  long.  $IC3a$  and  $IC4a$ , each with one pair, measuring 6  $\mu\text{m}$  and 15  $\mu\text{m}$ , respectively,  $IC4a$  longer than distance to  $IC3a$ . Ventral shield reticulated, aggenital setae  $ag$  one pair, simple, 9  $\mu\text{m}$  long. Genital shield reticulated, with 2 pairs of setae, serrate,  $g1$  12  $\mu\text{m}$ ,  $g2$  10  $\mu\text{m}$  long. Anal setae 2 pairs,  $ps1$  5  $\mu\text{m}$ ,  $ps2$  6  $\mu\text{m}$  long, both simple (FIG. 1. B).

Gnathosoma: Palp 4-segmented. Fourth segment with one eupathidium and 2 simple setae. Segments II and III with one and 2 barbed setae, respectively (FIG. 1. C). Rostrum reaching up to middle of femur I.

Rostral shield pitted with striations at base, deep cleft medially with one pointed lobe on each side of cleft, rest of shield undulated (FIG. 1. D).

Legs: Legs segments wrinkled. Setae on legs I-IV as follows: Coxae 2-2-1-1, trochanters 1-1-2-1, femora 4-4-2-1, genua 3-3-1-1, tibiae 5-5-3-3, tarsi 8-8-5-5. Dorsal seta on femora I and II slightly lanceolate serrate, less than  $\frac{1}{2}$  the width of respective segments. Tarsi I and II each with one solenidion (FIG. 1. A).

MALE: Unknown.

TYPE: Holotype, female collected 10 km. N. of Faisalabad, 25-xi-1994 (Mansoor) from turnip (*Brassica rapa*), paratypes, 1 female same collection data, all deposited in Acarology Research Laboratory, Department of Agri. Entomology, University of Agriculture, Faisalabad - Pakistan.

REMARKS: This new species resembles *Brevipalpus siphon* Akbar but the following characters separate these two species:

1. Rostrum reaching upto middle of femur I in this new species but 3/4 the length of femur I in *B. siphon*.
2. Dorsocentral opisthosomal setae simple in this new species but serrate in *B. siphon*.
3. Anal setae simple in this new species opposed to serrate in *B. siphon*.

*B. rapii* also closely resembles *B. obovatus* Donnadeieu but can be distinguished from it on the basis of the following characters:

1. Seta *IC4a* much longer, longer than distance to *IC3a* in *obovatus* but reaches the base of this seta in *B. rapii*.
2. Dorsocentral setae minute in *B. obovatus* but much longer, in this new species.
3. Anal shield smooth in *B. obovatus* but reticulated in *B. rapii*.
4. Trochanter III with 1 setae in *obovatus* as against 2 in this new species.

This new species also resembles *B. ornantis* Chaudhri & Akbar on the basis of dorsal body pattern, number of dorsal setae and ventral ornamentation of the ventral shield but characters like 2 setae on palp terminal segment, pitted rostral shield and number of

setae on trochanters III and IV separate this new species from *B. ornantis*.

2. *Brevipalpus ehsanii* n. sp.  
(FIGS. 2. A-D)

FEMALE: Dorsum: Body 357  $\mu\text{m}$  long (without rostrum), 161  $\mu\text{m}$  wide. Prodorsum with reticulations mediolaterally, smooth medially and laterally. Prodorsal setae 3 pairs, serrate,  $v2$  6  $\mu\text{m}$ ,  $sc1$  5  $\mu\text{m}$ ,  $sc2$  6  $\mu\text{m}$  long. Two pairs of eyes present (FIG. 2. A).

Opisthosoma reticulated mediolaterally, medially with diagonal striations from central seta *c1* upto caudal end, and diagonal striations marginally (FIG. 2. A). Central setae 3 pairs, simple:  $c1 = d2 = 7 \mu\text{m}$ ,  $e1$  6  $\mu\text{m}$ . Lateral setae 6 pairs, serrate: measuring  $c3 = d3$  6  $\mu\text{m}$ ,  $e3$  9  $\mu\text{m}$ ,  $f_1 = h2 = 6 \mu\text{m}$ ,  $h1$  9  $\mu\text{m}$ , all shorter than distances to setae next behind (FIG. 2. A).

Venter: Coxae I and II covered with transverse striations. Propodosoma with transverse striations medially behind coxae, few reticulations associated with coxae II. Metapodosoma reticulated antero lateral, directly anterior to and posterior to *Ic4a*. Area between and posterior to setae *Ic3a* smooth (FIG. 2. B). Intercoxal setae, *IC1* 1 pair, simple, 20  $\mu\text{m}$  long, setae *IC3a* and *IC4a*, each one pair, 10  $\mu\text{m}$  and 29  $\mu\text{m}$ , respectively. Setae *IC4a* just reaching the base of *IC3a*. Ventral shield reticulated, aggenital setae *ag* one pair, simple, 5  $\mu\text{m}$  long. Genital shield reticulated, with 2 pairs of setae, simple, *g1* 12  $\mu\text{m}$ , *g2* 9  $\mu\text{m}$ . Anal setae 2 pairs, *ps1* 5  $\mu\text{m}$ , *ps2* 8  $\mu\text{m}$ , simple (FIG. 2. B).

Gnathosoma: Palp terminal segment with 1 eupathidium and 2 simple setae, II and III segments with 1 and 2 serrate setae (FIG. 2. C). Rostrum reaching up to 2/3 of femur I. Rostral shield with a few striations at the base, deeply cleft medially with 2 ancillary lobes on each side (FIG. 2. D).

Legs: Legs segments wrinkled. Setae on legs I-IV segments: Coxae 2-2-1-1, trochanters 1-1-2-1, femora 4-4-2-1, genua 3-3-1-1, tibiae 5-5-3-3. Setae on tarsi difficult to determine. Tarsi I and II each with a solenidion. Dorsal seta on femora II more than 1/2 the width of the segment whereas dorsal seta on femora I is less than 1/2 the width of the segment.

MALE: Unknown.

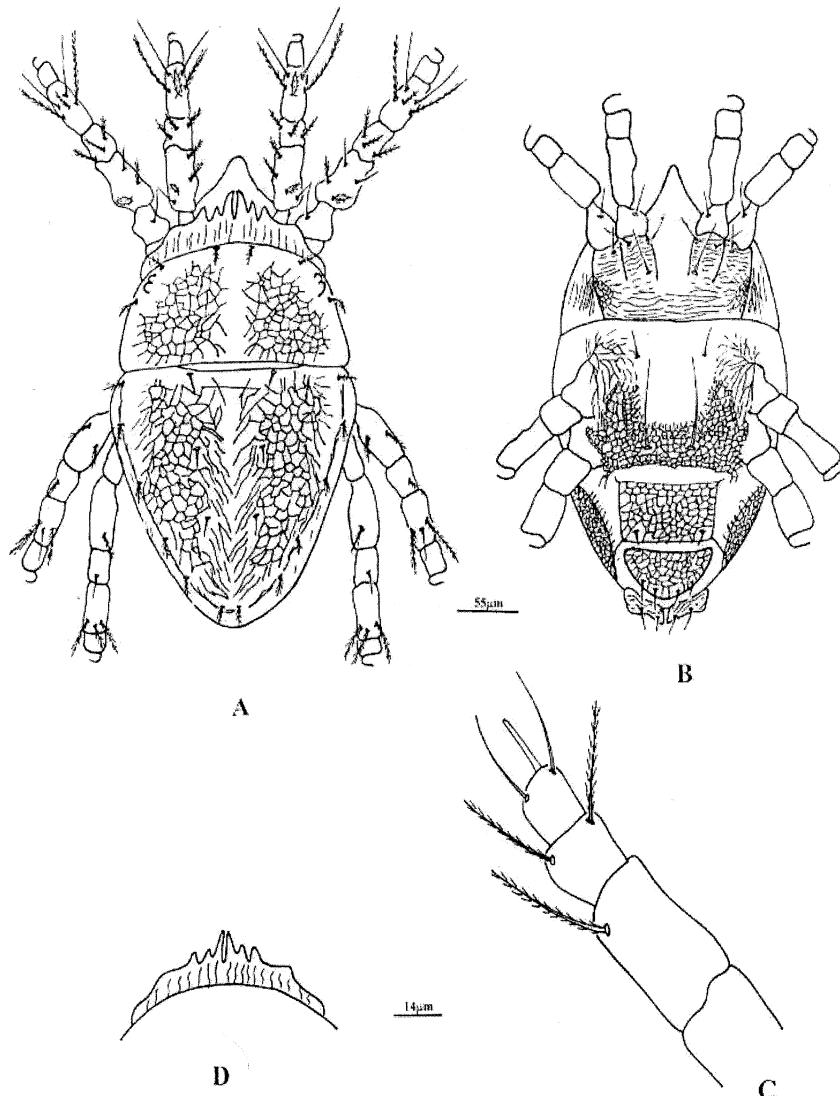


FIG. 2 : *B. ehsani* n. sp. A. — dorsal side. B. — Ventral side. C. — Palpus. D. — Rostral shield.

TYPE: Holotype female collected 1 km. W. of Narwala Bangla (Faisalabad), 21-xi-1994 from *Solanum tuberosum* (Mansoor), paratype, one female same collection data, all deposited in Acarology Research Laboratory, Department of Agri. Entomology, University of Agriculture, Faisalabad Pakistan.

REMARKS: On the basis of dorsal body pattern and number and shape of dorsal body setae, this new species close resembles *B. origanum* Baker *et al.*, however it differs from the latter as follows:

1. Rostral shield simple with 3 ancillary lobes on each side of medial cleft in *B. origanum* instead of striated with 2 ancillary lobes on each side in this new species.
2. Opisthosoma reticulated medially between setae *c1* and *d1* in *B. origanum* but striated in this new species.
3. Ventral and genital shields with transverse areo-*lae* in *B. origanum* but squarish reticulations in this new species.

This new species also resembles *Brevipalpus rapii*, n. sp. but the following characters separate the two species:

1. Rostral shield with one medial cleft and 2 ancillary lobes on each side in this new species against one ancillary lobes in *B. rapii* n. sp.
2. Genital shield setae simple in this new species whereas slightly serrate in *B. rapii* n. sp.
3. The length of dorsal seta on femora II is more than 1/2 the width of the segment in this new species whereas it is less than 1/2 the width in *B. rapii* n. sp.

This new species can also be separated from *Brevipalpus siphon* Akbar and Aheer by the following characters:

1. Dorsocentral opisthosomal setae simple in this new species but serrate in *B. siphon*.
2. Rostrum reaching upto 2/3 of femora I in this new species whereas is 3/4 the length of femora I in *B. siphon*.
3. Rostral shield with two ancillary lobes on each side of median cleft in this new species opposed to one ancillary lobes in *B. siphon*.
4. Anal setae simple in this new species whereas serrate in *B. siphon*.

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