

## DESCRIPTIONS OF SOME *TYPHLODROMUS* SPECIES FROM TANZANIA (MESOSTIGMATA : PHYTOSEIIDAE)

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TAXONOMY  
PREDATORY MITES  
AFRICA

TAXONOMIE  
ACARIENS PRÉDATEURS  
AFRIQUE

ABSTRACT : Full descriptions of three new typhlodromid mites collected from Tanzania are presented in this work. These are : *Typhlodromus asticus* sp. n., *T. totifolianensis* sp. n. and *T. daresalaami* sp. n.

RÉSUMÉ : Nous présentons les descriptions complètes de trois nouveaux typhlodromides récoltés en Tanzanie. Ce sont : *Typhlodromus asticus* sp. n., *T. totifolianensis* sp. n. et *T. daresalaami* sp. n.

Members of the genus *Typhlodromus* Scheuten, generally, are plant inhabiting predaceous mites preying on either tetranychid or eriophyid mites. Some species are successfully used as biological agents (GRANHAM *et al.* 1984; HEADLY and HOY 1986).

Typhlodromid mites have a world-wide distribution. In Africa, species have been recorded from Algeria, Egypt, Sudan, Zaiher (Congo) and South Africa. This study presents descriptions of three new species mostly from Tanzania. The generic designation follows CHANT (1965), setal nomenclature ROWELL *et al.* (1978), legs' chaetotaxy after EVANS (1963) and ROWELL and CHANT (1979), and organotaxy after ATHIAS-HENRIOT (1975). All measurements are in microns ( $\mu\text{m}$ ). Type specimens are deposited in the Canadian National Collection.

### ***Typhlodromus asticus* sp. n.**

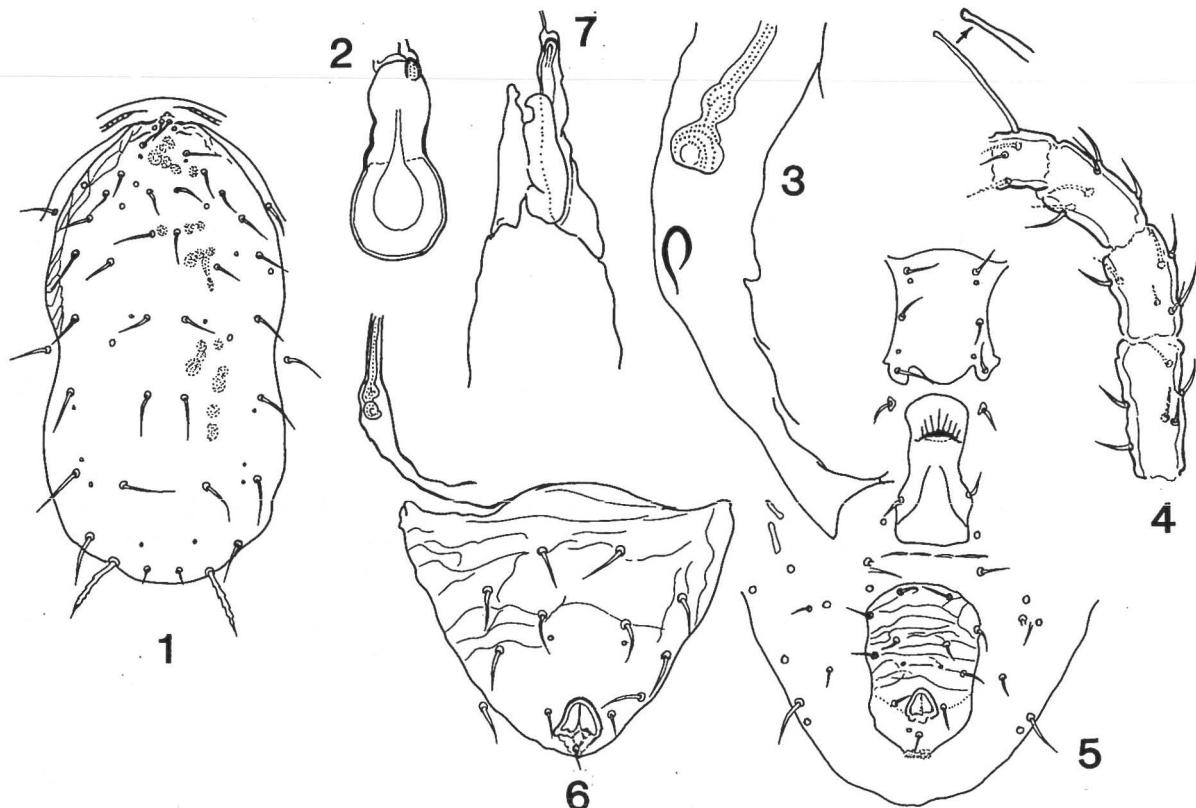
(Figs. 1-7)

**Female :** Dorsal shield smooth, constricted near the middle, 268 long and 136 wide. Eleven pairs of

setae on podonotum :  $5j (j1, j3, j4, j5, j6)$ ,  $4z (z2, z3, z4, z5)$ ,  $2s (s2, s4)$ ; 7 pairs on opisthonotum :  $2J (J2, J5)$ ,  $2Z (Z4, Z5)$ ,  $3S (S2, S4, S5)$ ; 2 pairs on lateral integument :  $r3$ ,  $R1$  (Fig. 1).  $Z5$  serrated, remaining setae smooth. Five pairs of solenostomes and 7 pairs of poroids present on dorsal shield; muscle marks as shown in Fig. 1. Measurements of dorsal setae :  $j1$  18,  $j3$  22,  $j4$  and  $j5$  15,  $j6$  22,  $J2$  26,  $J5$  11,  $z2$  and  $z3$  20,  $z4$  24,  $z5$  20,  $Z4$  33,  $Z5$  42,  $s4$  26,  $s6$  24,  $S2$  31,  $S4$  26,  $S5$  29,  $r3$  and  $R1$  24. Sternal shield with 3 pairs of setae and 2 pairs of large solenostomes. Metasternal setae on platelets. Genital shield 51 wide. Ventrianal shield, reticulated, with a pair of small rounded  $gv3$ , 4 pairs of preanal setae, 100 long and 71 wide. 2 pairs of thin elongate sigillar sclerites present between ventrianal and genital shields, 4 pairs of setae, 4-5 pairs of small rounded sclerites and 2 pairs of metapodal platelets surrounding ventrianal shield.  $JV5$  simple and 30 long (Fig. 2). Peritreme extending anteriorly to level of  $j1$ ; peritremal shield as in Fig. 3. Insemination apparatus with short ductus major, short atrium, cup shaped cervix, with walls sclerotized near

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Figs. 1-7. — *Typhlodromus asticus* sp. n.

Female (1-5). 1. — Dorsal shield. 2. — Insemination apparatus. 3. — Peritremal shield. 4. — Leg IV. 5. — Ventrianal shield. Male (6-7). 6. — Ventrianal shield. 7. — Spermatostylus.

sacculus and measuring 15 (Fig. 2). Macrosetae present on tarsus IV (35), with blunt tip (Fig. 4). Chaetotactic formula : genu II (2-2/0, 2/0-1) ; genu III (1-2/1, 2/0-1).

**Male :** Dorsal shield 203 long and 117 wide. Ventrianal shield slightly reticulated, 81 long, 113 wide, with 4 pairs of preanal setae, a pair of small rounded  $gv_3$ , 73 long, 95 wide and fused anteriorly with peritremal shield (Fig. 6). Spermatostylus 22 long, simple (Fig. 7).

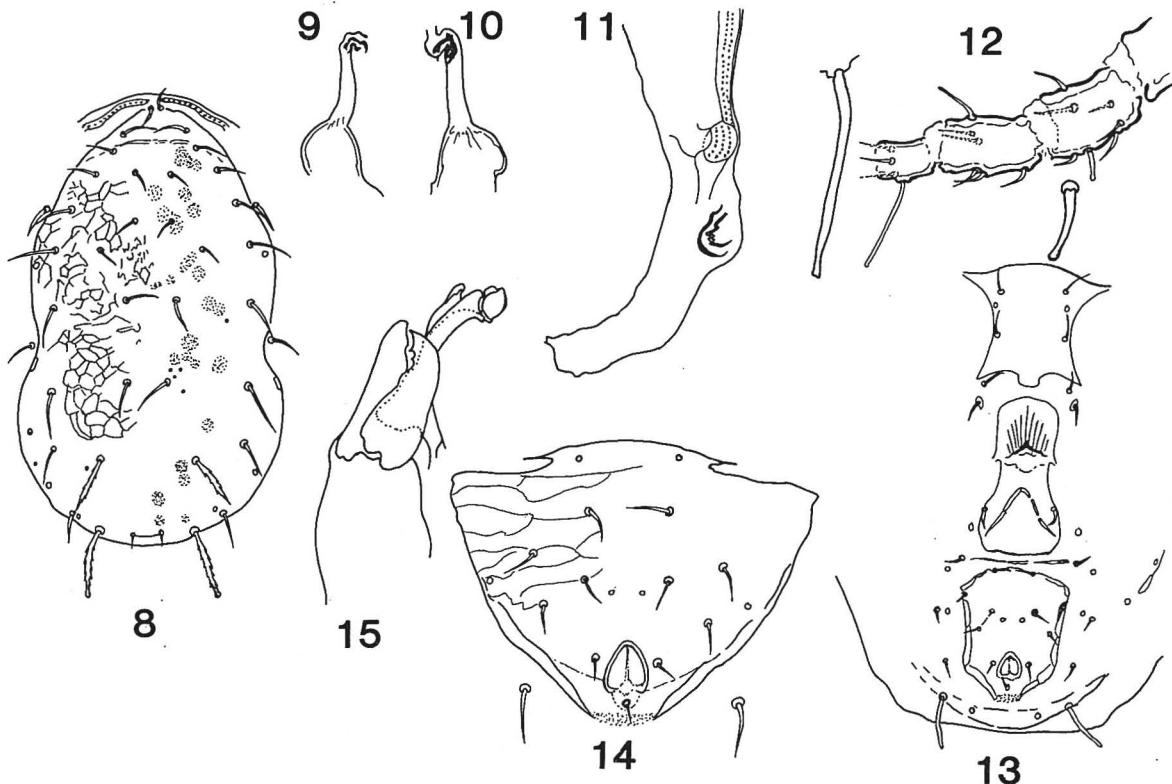
*T. asticus* is similar to *T. gouaniae* Schicha (SCHICHA, 1983) in the dorsal chaetotaxy, the blunt macrosetae on tarsus IV, insemination apparatus and ventrianal shield. The shape of  $Z_5$ , relative length of dorsal setae and number of preanal setae in male distinguish it from the latter.

Holotype, allotype and 1 female were collected from Arousha, Tanzania, March 24, 1987.

#### *Typhlodromus totifolianensis* sp. n.

(Figs. 8-15)

**Female :** Dorsal shield reticulated, constricted near the middle, 275 long and 158 wide. Eleven pairs of setae on podonotum :  $5j$  ( $j_1, j_3, j_4, j_5, j_6$ ) 4 $z$  ( $z_2, z_3, z_4, z_5$ ), 2 $s$  ( $s_4, s_6$ ) ; 7 pairs on opisthonotum : 2 $J$  ( $J_2, J_5$ ), 2 $Z$  ( $Z_4, Z_5$ ), 3 $S$  ( $S_2, S_4, S_5$ ) ; 2 pairs on lateral integument :  $r_3$ ,  $R_1$ .  $Z_1, Z_5$  serrated and slightly knobbed, remaining setae smooth. Measurements of dorsal setae :  $j_1$  18,  $j_3$  23,  $j_4$  and  $j_5$  15,  $j_6$  24,  $J_2$  28,  $J_5$  11,  $z_2$  22,  $z_3$  29,  $z_4$  31,  $z_5$  22,  $Z_4$  42,  $Z_5$  53,  $s_4$  33,  $s_6$  31,  $S_2$  35,  $S_4$  31,  $S_5$  22,  $r_3$  22,  $R_1$  24 (Fig. 8). Four pairs of solenostomes and 4 pairs of poroides present on dorsal shield ; muscle marks as shown in Fig. 8. Sternal shield with 2 pairs of setae and a pair of large solenostomes. Sternal setae



Figs. 8-15. — *Typhlodromus totifolianensis* sp. n.

Female (8-13). 8. — Dorsal shield. 9-10. — Insemination apparatus. 11. — Peritremal shield. 12. — Leg IV. 13. — Ventral shields. Male (14-15). 14. — Ventrianal shield. 15. — Spermatostylus.

III off shield, metasternal setae on platelets. Genital shield 51 wide. Ventrianal shield with a pair of rounded gv3, 4 pairs of preanal setae, 90 long and 72 wide. 2 pairs of thin elongate sigillar sclerites present between ventrianal and genital shields and 4 pairs of setae, 5 pairs of small rounded sclerites and 2 pairs of metapodal platelets surrounding ventrianal shield. JV5, knobbed and 38 long (Fig. 13). Insemination apparatus with long ductus major, short and thick atrium, long cervix (20), with sclerotized walls narrowed anteriorly and wider posteriorly (Figs. 9, 10). Peritreme extending anteriorly to level of j1, peritremal shield as in Fig. 11 simple. Macrosetae present on genu IV (11), tibia IV (20), and tarsus IV (35), knobbed (Fig. 12). Chaetotactic formula : genu II (2-2/0, 2/0-1 ; genu III (1-2/1, 2/0-1).

**Male :** Dorsal shield 200 long, 104 wide. Ventrianal shield reticulated, 77 long, 82 wide with 4 pairs

of preanal setae, rounded gv3, and 2 large solenostomes (Fig. 14). Spermatostylus 22 long, simple (Fig. 15).

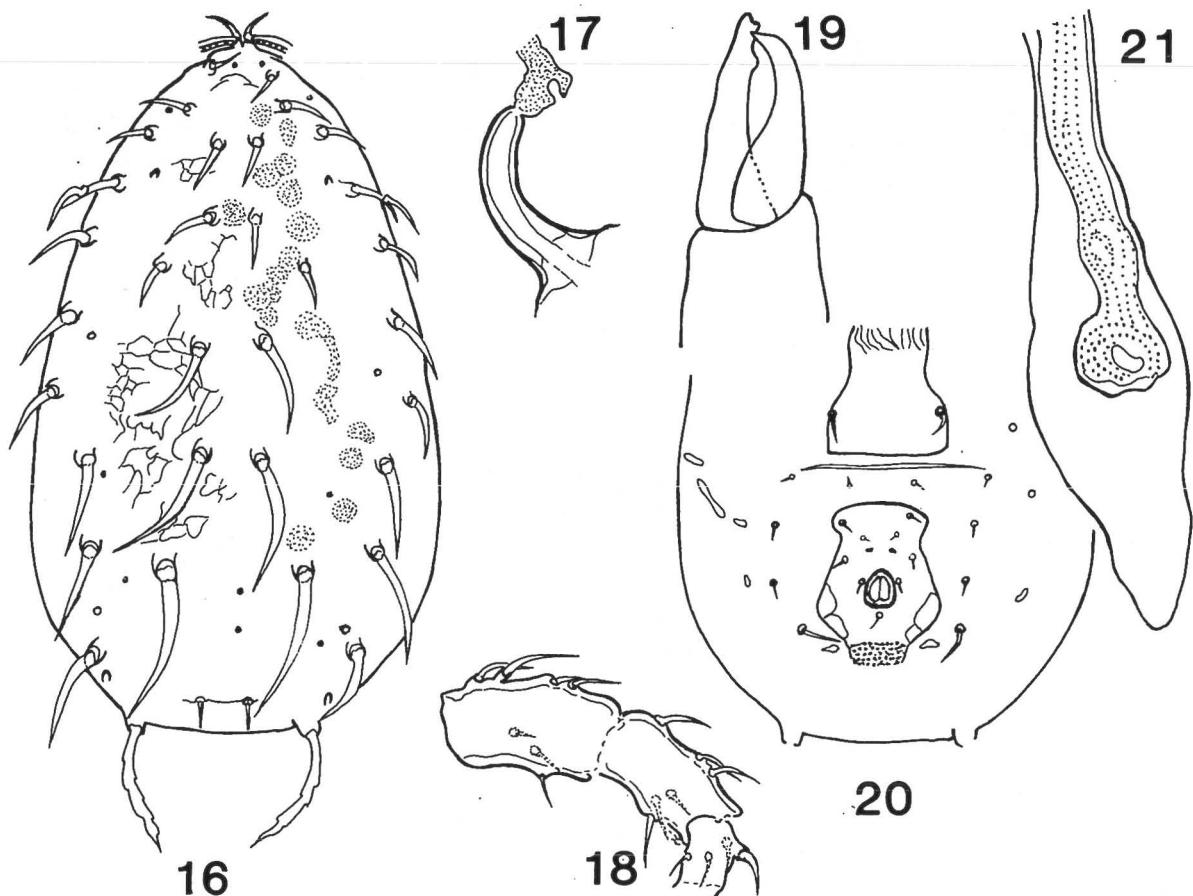
*T. totifolianensis* is similar to *T. paganus* VAN DER MERWE, 1968 and *T. commenticus* LIVSHITZ and KUZNETSOV, 1972. It is different from the former in the insemination apparatus, length of Z4, Z5 and relative length of lateral setae. *T. commenticus* has a different insemination apparatus, spermatostylus and Z5, JV5 serrated with sharp tip.

Holotype, allotype female and 1 male were collected from Arusha, Tanzania, March 24, 1987.

***Typhlodromus daresalaami* sp. n.**

(Figs. 16-21)

**Female :** Dorsal shield reticulated, 286 long, 170 wide. Eleven pairs of setae on podonotum : 5j (j1,



FIGS. 16-21 : *Typhlodromus daresalaami* sp. n., female.

16. — Dorsal shield. 17. — Insemination apparatus. 18. — Leg IV. 19. — Chelicera. 20. — Ventral shields. 21. — Peritremal shield.

$j_3, j_4, j_5, j_6, 4z (z_2, z_3, z_4, z_5)$ ,  $2s (s_4, s_6)$ ; 8 pairs on opisthonotum :  $2J (J_2, J_5), 2Z (Z_4, Z_5), 3S (S_2, S_4, S_5)$ ;  $r_3 R_1$ ; on lateral integument. Dorsal setae except  $J_5$  long, stout and  $Z_5$  serrated. Measurements of dorsal setae :  $j_1 23, j_3 18, j_4 23, j_5 26, j_6 46, J_2 57, J_5 9, z_2 20, z_3 24, z_4 29, z_5, 26, Z_4 70, Z_5 53, s_4 29, s_6 42, S_2 42, S_4 47, S_5 37, r_3 26, R_1 29$ . Four pairs of solenestomes and 5 pairs of poroids present on dorsal shield; muscle marks as shown in Fig. 16. Sternal shield undiscernible. Genital shield 72 wide. Ventrianal shield not well developed, with a pair of crescentic  $gv_3$ , 3 pairs of preanal setae ( $JV_2, JV_4, ZV_2$ ),  $JV_1$  free on integument; 85 long and 53 wide. A thin elongate sigillar sclerite present between ventrianal and genital shield and 4 pairs of setae, 4 pairs of rounded or elongate sclerite and 2 pairs of

metapodal platelets surrounding ventrianal shield.  $JV_5$  simple and 22 long (Fig. 20). Insemination apparatus with broad atrium (4), elongate, sclerotized cervix and measured 22 long (Fig. 17). Peritreme stippled throughout and extending anteriorly to level of  $j_1$ ; peritremal shield simple as in Fig. 21. Chelicera with 2 teeth on fixed digit and without tooth on the movable (Fig. 19). Macrosetae present on genu IV (23), tibia and tarsus IV (14) with sharp tip (Fig. 18). Chaetotactic formula : genu II (2-2/1, 2/0-1); genu III (1-2/1, 2/0-1).

**Male :** Unknown.

*T. daresalaami* is similar to species in *simplex* and *ecclesiasticus*-group as defined by CHANT and YOSHIDA, 1983 and 1986 respectively. In *simplex*-group

the adult female is characterized by having most of the dorsal setae thickened, long and inserted on tubercles; presence of *J2*, *J5*, *Z1*, *Z4*, *S2*, *S4*, *S5*, and *R1* on opisthonotum and absence of preanal pores. *T. daresalaami* in contrast lacks *Z1* while preanal pores present. On the other hand, in *ecclesiastus*-group *z6* present on podonotum, *S2*, *S4* and *S5* on opisthonotum and setae *JV1*, *JV2*, *JV3* always on the ventrianal shield. In the present species, however, *z6* is absent, *JV1* free on integument and *JV2*, *JV4*, *ZV2* present on ventrianal shield.

Holotype was collected from Dar es salaam, Tanzania, March 24, 1987.

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