

MORFOMETRIC & INTRASPECIFIC VARIATIONS
BETWEEN SPECIMENS OF *TYCHEROBIUS STRAMENTICOLA*
AND *TYCHEROBIUS POLONICUS* (ACARI: CAMEROBIIDAE)
FROM TURKEY

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T. STRAMENTICOLA
T. POLONICUS
CAMEROBIIDAE
INTRASPECIFIC VARIATIONS
SETAL LENGTH
TURKEY

SUMMARY: This study reports on variations between specimens of *T. stramenticola* Bolland, 1986 and *T. polonicus* Bolland, 1986. Significant differences were observed in setal lengths and abnormal variations of specimens of both species. However, the setal variations observed raised the following questions: (i) what is the validity of other closely related species whose setal lengths differ only slightly from those of *T. stramenticola* and *T. polonicus*? (ii) are setal lengths useful characters to distinguish between closely related species in the genus *Tycherobius*?

INTRODUCTION

T. stramenticola and *T. polonicus*, were described by BOLLAND, 1986. These species are known from Israel, Poland and Turkey (BOLLAND, 1986, BOLLAND & KOÇ, 2001, KOÇ, 1998, KOÇ 2005). *T. stramenticola* closely resembles *T. polonicus*. It differs from the latter by having two short anterior setae on femur III, which are further apart than those of the latter species. Seta *sci* is as long as *vi* in *T. polonicus* opposed to much shorter than *vi* in *T. stramenticola*. The palptarsus of *T. polonicus* has two setae instead of one as in *T. stramenticola*.

In this paper, we report on morfometric and intraspecific variations between specimens both normal and abnormal of *T. stramenticola* and *T. polonicus*.

MATERIALS AND METHODS

T. stramenticola specimens were collected from soil and litter under *Euphorbia* sp., *T. polonicus* specimens

were collected from soil and litter under *Pinus nigra* and *Quercus* sp. in the province of Afyon. We obtain 2 normal and 3 abnormal specimens of *T. stramenticola* and 2 abnormal and 2 normal specimens of *T. polonicus*. Body, leg and dorsal setal lengths were measured for each specimens. Dorsal and leg setal designations follow KETHLEY (1990) and GRANDJEAN (1944), respectively. All measurements are given in micrometers.

RESULTS

T. stramenticola: Three abnormal females were obtained.

Abnormal-1:

- left member of seta e_2 is smooth, whereas the other member is serrated (FIG. 1 C),
- left tarsus I with 2 midventral setae, opposed to one seta on right tarsus (FIG. 1 B),
- right femur III with 2 setae instead of one on left femur (Fig. 1 A)

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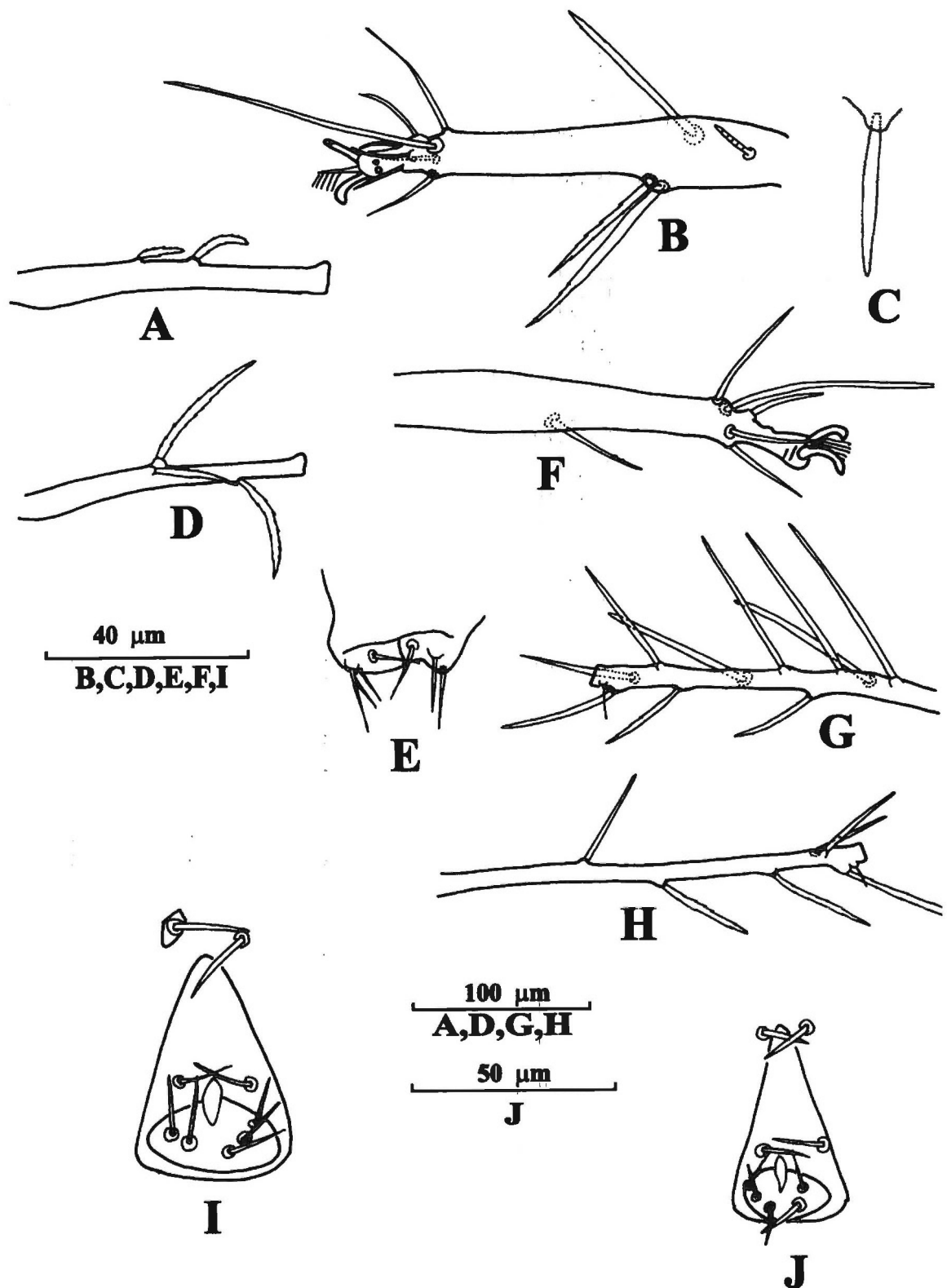


FIG. 1.

Characters	Normal-1	Normal-2	Abnormal-1	Abnormal-2	Abnormal-3
Body length (incl. Gnath.)	320	362	346	330	373
Gnathosoma	53	59	59	59	59
Body width	186	261	229	229	240
Leg I	538	544	576	600	576
Leg II	442	437	458	458	464
Leg III	596	501	517	522	527
Leg IV	565	570	586	576	613
c ₁	160	160	170	160	186
d ₁	128	138	160	144	160
e ₁	75	69	75	80	80
f ₁	69	69	69	64	75
h ₁	43	32	37	37	43
vi	59	64	64	69	80
ve	43	37	48	48	48
sci	69	59	64	69	69
sce	32	32	32	37	37
c ₂	48	48	59	53	53
d ₂	43	37	43	43	48
e ₂	43	37	48	43	48
f ₂	37	32	43	37	43
h ₂	37	32	37	32	32

TABLE 1. The measurements of normal and abnormal specimens of *T. stramenticola*

Abnormal-2:

- right femur IV with 3 setae and left femur IV with or two (Fig. 1 D).

Abnormal-3:

- 4 setae on left genital cover but 3 on right cover (FIG. 1 E),
- Right tarsus I with 6 setae and on left tarsus I (FIG. 1 F),
- Left tibia I with 10 setae (FIG. 1 G).

Measurements of normal and abnormal specimens of *T. stramenticola* are given in Table 1.

T. polonicus: Two abnormal females were obtained.

Abnormal-1:

- Left genital cover with 2 setae (Fig. 1 I).

Abnormal-2:

- Right genital cover with 2 setae (Fig. 1 J)
- Right tibia IV with 6 setae (Fig. 1 H).

Material examined: Five females of *T. stramenticola*: 2 normal, 3 abnormal, from soil and litter under *Euphorbia* sp., B. Karabağ, Bolvadin, 1350 m, 18.12. 2004. Four females of *T. polonicus*: 1 normal and

1 abnormal female, from soil and litter under *Pinus nigra*; 1 normal and 1 abnormal female, from soil and litter under *Quercus* sp. Koroğlubeli, Country forest, 1300 m, 27.01.2005 Afyon, Turkey.

DISCUSSION

Species of *Tycherobius* usually have pilose or serrated dorsal setae, tibia I with 9 setae, tarsi IV with 7 setae, tarsi I with one midventral setae, femur III with 3 setae, femur IV with 2 setae and each genital cover with 3 setae (BOLLAND, 1986). During the present study a series of *T. stramenticola* females were obtained from soil and litter *Euphorbia* sp., which show some variations in these characters. These specimens conform in other respects to the concept of *T. stramenticola* (BOLLAND, 1986). In this present study one specimen (abnormal-1) left e_2 seta smooth, left tarsus I with 2 midventral setae, right femora III with 2 setae; one specimen (abnormal-2) right femora IV with 3 setae; one specimen (abnormal-3) left tibia I with 10 setae, right tarsus IV with 6 setae and left genital cover with 4 setae.

Characters	Normal-1	Normal-2	Abnormal-1	Abnormal-2
Body length (incl. gnath)	378	346	362	346
Gnathosoma	64	64	64	64
Body width	245	229	240	224
Leg I	640	624	634	613
Leg II	586	506	522	496
Leg III	608	586	586	586
Leg IV	682	645	677	629
c ₁	240	224	229	213
d ₁	229	197	202	202
e ₁	85	80	96	80
f ₁	91	75	85	80
h ₁	48	43	43	43
vi	80	80	85	80
ve	59	59	64	53
sci	85	69	85	69
sce	37	32	37	32
c ₂	69	64	80	59
d ₂	59	53	64	53
e ₂	59	48	53	48
f ₂	43	43	43	43
h ₂	37	32	37	37

TABLE 2. The measurements of normal and abnormal specimens of *T. polonicus*

Normal-2 conforms to the type specimen by lengths of dorsocentral setae. In normal-1, abnormal-1, abnormal-2 and abnormal-3 are e_1 longer than f_1 . In the type specimen, the row of dorsocentral setae as follow: $vi > sci = c_2 > d_2 = e_2 > f_2 = h_2 > ve > sce$. BOLLAND (1986) was given $vi > sci$ in the key of *Tycherobius* species, only abnormal-3 and normal-2 in the Turkish specimens are similar to the type specimen. It is $sci > vi$ in normal-1 and is $vi = sci$ in abnormal-1 and abnormal-2 (TABLE 1).

Two abnormal females of *T. polonicus* were obtained. Abnormal-1 has two setae on the left side of genital cover, Abnormal-2 has two setae on the right side of genital cover and right tibia IV with 6 setae.

In the type specimen of *T. polonicus*, seta e_1 shorter than d_1 (BOLLAND, 1986). This character is similar both normal and abnormal of Turkish specimens. We observed variations the length of setae e_1 and f_1 (TABLE 2). In the type specimen, setae is $vi = sci$. In the Turkish specimens, except abnormal-1, in others these setae lengths are different (TABLE 2).

As a result, morfometric variations of dorsocentral setae are very small. Greatest variations were observed in the number of setae in genital and legs. We consider these only as intraspecific variations.

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