

TYDEINAE (Acari : Tydeidae) FROM BELGIUM

I. THE GENUS *Homeotydeus***

by H.M. ANDRÉ

Introduction

In the frame of my study on corticolous microarthropods (André, 1983), numerous tydeid species were collected. Most of them are new species, among which two have already been described (André, 1980). This series of two papers deals with new species of the subfamily Tydeinae.

The genus *Homeotydeus* ANDRÉ, 1980

The two new species described below meet the following description.

Prodorsum : recurved ; two eyes. Opisthosoma : dorsal chaetotaxy : 10 (12 and *h1* missing) ; poroidotaxy : 3 ; genital organotaxy : Ad(0,4-6-4), T(4-4), D(2-2), P(0-1) ; epimeral formulae : Ad, T & D(3-1-4-2), P(3-1-3-0), L(3-1-2) ; coxal organs. Legs : chaetotaxy : I(8-4-3-3-0) II(6-2-2-3-0) III(5-2-1-1-1) IV(5-2-1-1-0) in the adult, trito- and deutonymphs ; protonymph with no *trI* and with only five tarsal setae on the fourth leg ; larva : I(8-4-3-3-0) II(6-2-2-3-0) III(5-2-1-1-0) ; eupathidia on tarsus I : (*p*) (*tc* N1) and, possibly, *ft''* ; double anabasis with (*tc*) vestigial in the larva (fig. 2C) ; solenidotaxy : 2, femur IV entire. Palp : (6-2-2) + ω with a double eupathidium at the tip of the tarsus.

The above description corresponds to the definition of the genus *Homeotydeus* (ANDRÉ, 1980) except in two points :

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1. There is no seta on trochanter I. This in fact coincides with the state initially described in my MS thesis (André, 1978). The importance of seta *trI*, observed for instance in « *Paralorryia* » *andreae* (UECKERMANN & MEYER, 1979) which has the same chaetotaxy as *Homeotydeus* plus *trI*, remains to be assessed, possibly through cladistic analysis (or another approach) applied to the tydeid mites as a whole.

2. In some species, the fastigial seta *ft''* of tarsus I becomes eupathidial in a nymphal stasis ; in some others, it does not.

Species description

Homeotydeus bipilis n. sp.

The dorsal habitus of *H. bipilis* adult is illustrated in fig. 1A. The dorsal striation pattern is of « Tydeus » type with longitudinal striae on the prodorsum and transverse striae on the opisthosoma. Dorsal body setae are simple and smooth with (*l5*) very long (ca 50 μm)*. Leg chaetotaxy as given in the generic description, with simple and smooth setae (fig. 1B). Seta *ft''* on tarsus I is already eupathidial in the deutonymph. The new species is easily distinguished from other *Homeotydeus* species by the length of setae (*l5*).

Material examined : adults, trito- and deutonymphs collected in Saint-Mard (Belgian Lorraine, sites A and B ; map in André, 1983) on poplar and chestnut, mainly in foliose lichens. Type material deposited in the Institut royal des Sciences naturelles, Bruxelles, Belgium.

Habitat : Most specimens (36 out of 38) were collected in foliose lichens (*Parmelia sulcata*, *Xanthoria parietina*, *Physcia pulverulenta*) on poplar.

Homeotydeus formosa n. sp.

The dorsal habitus of *H. formosa* is given in fig. 1G (adult) and 2A (larva). The dorsal striation pattern is of « Tydeus » type except

* This recalls the habitus of *Ceratoppia bipilis*-nymphs (Oribatida) which also have two long setae at the tip of the opisthosoma. This character is responsible for the name given to the species.

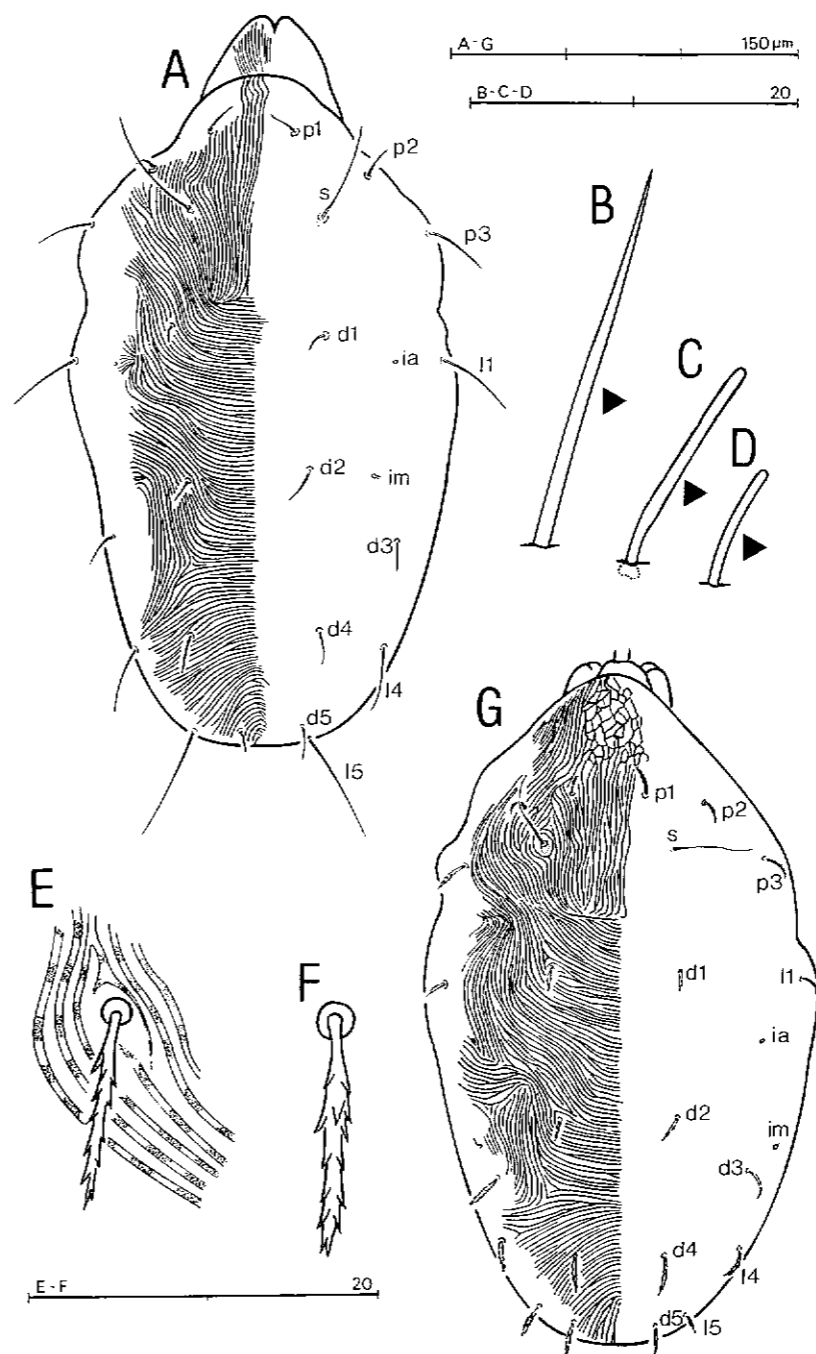


FIG. 1. — *Homeotydeus bipilis* n. sp. Dorsal view of adult (A) and dorsal seta of femur I (B). *Homeotydeus formosa* n. sp. Dorsal setae of femur I (C) and genu I (D), setae *d1* (E) and *d3* (F), dorsal view of adult (G). Triangles in B, C, D indicate the forward side of setae.

on the anterior part of the prodorsum where striae form a reticulate pattern. This reticulation, however, does not exist in the larva (fig. 2A, B) but appears only in the protonymph just before the dehiscence line, δ (fig. 2D). Dorsal opisthosomatic setae are serrate (fig. 1E, F). Leg chaetotaxy as given in the above generic description. Dorsal setae on genu I and femur I are smooth and

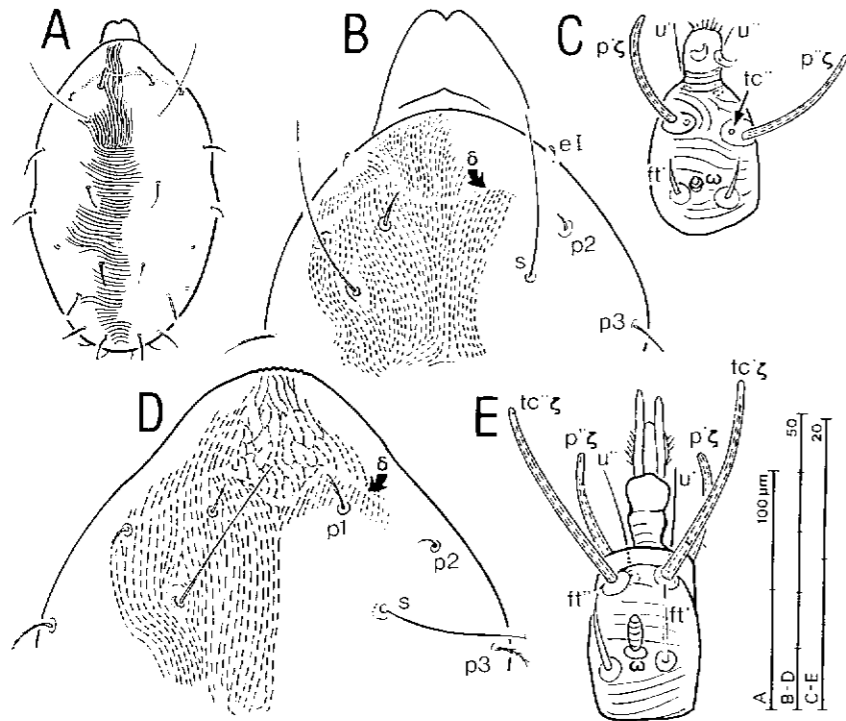


FIG. 2. — *Homeotydeus formosa* n. sp. Dorsal view (A), prodorsum (B) and tarsus I (C) of larva; prodorsum of protonymph (D) and tarsus I of adult (E).

rounded terminally (fig. 1C, D). Fastigials of tarsi I do not become eupathidial, even in the adult (fig. 1E).

Two other tydeid species also exhibit a reticulate pattern limited to the prodorsum: « *Paralorryia formosa* LIVSHITZ, 1972 and *Homeotydeus cumbrensis* (BAKER, 1944). The new species should be different as the striation pattern of the species described by Baker (1944) and by Livshitz *et al.* (1972) is of « *Paralorryia* »

type. In addition, the description given by Livshitz *et al.* (1972) suggests that the leg chaetotaxy of *P. formosa* corresponds with that of the genus *Tydeus*. Unfortunately, it was impossible to borrow a specimen of *P. formosa* or to get any further information from the authors.

An interesting anomaly was observed in a larva of *H. formosa* in which a prodorsal seta *p1* was merely missing (fig. 2B). This recalls the bisynthesis of (*p1*) already noticed in a *Proctotydaeus schistocercae* nymph (André, 1981) and again observed in another *Proctotydaeus* female collected in Ethiopia.

Material examined: Adults, trito- deuto- and protonymphs, larvae collected in Ruelle and Saint-Mard (Belgian Lorraine). The type material is deposited in the Institut royal des Sciences naturelles, Bruxelles, Belgium.

H. formosa, mentioned but not described in André (1980), is designated as type-species since it is the only *Homeotydeus* whose ontogeny is completely known.

Habitat: *H. formosa* is the most abundant and the most frequent in foliose lichens; it is not uncommon in crustose epiphytes but is rare in fruticose lichens (for further information, see André, 1985).

Key to the species of *Homeotydeus*

The five known species of *Homeotydeus* have been examined. Adults, and likely nymphs, should be easily distinguished by the following characters:

- (1) — reticulate pattern on prodorsum 2.
- no reticulate pattern on prodorsum 4.
- (2) — reticulate pattern on prodorsum only 3.
- reticulate pattern on prodorsum and opisthosoma *arthurbakeri* (BAKER, 1944)
- (3) — striae longitudinal between opisthosomatic setae (*d2*) *cumbrensis* (BAKER, 1944)
- striae transverse between opisthosomatic setae (*d2*) *formosa* n. sp.
- (4) — opisthosomatic setae (*l5*) much longer than (*d4*), (*d5*) and (*l4*) *bipilis* n. sp.
- opisthosomatic setae (*d4*), (*d5*), (*l4*) and (*l5*) subequal *shawii* (BAKER, 1943).

The fastigial seta *ft*' of tarsus I is eupathidial in the adults of *H. arthurbakeri*, *H. shawi* and *H. bipilis*; it is not in the adults of *H. cumbrensis* and *H. formosa*.

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Summary

Two new tydeid mites collected on bark in Belgium are described: *Homeotydeus bipilis* and *H. formosa*. A key to the species of *Homeotydeus* is presented.

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ON THE PHENOLOGY OF SOME PIPUNCULIDAE (DIPTERA) IN BELGIUM*

by M. DE MEYER* and L. DE BRUYN**

Introduction

Pipunculidae are a group of small flies, closely related to the hoverflies (Syrphidae). They are parasites of Homoptera during their larval stage and the adults are inconspicuous insects, found hovering among low vegetation or foliage of shrubs and trees (COE, 1966).

Because of their specific life history, the phenology of these insects is closely related to the phenology of their hosts. During the last years, some articles were published in Great Britain on this subject (ROTHSCHILD, 1964; WALOFF, 1975; WHITTAKER, 1969).

Within the scope of a M. Sc. degree, the authors made a preliminary study of the Belgian Pipunculidae (DE MEYER, 1983; DE MEYER & DE BRUYN, in prep.). A part of that study concerns the phenology of some common species.

Material and methods

Most of the material was collected with three Malaise and six emergence traps at three different sites on a study area at Turnhout (UTM-grid FS.38) during 1982 (leg. L. De Bruyn & M. De Meyer). In addition, material collected with a Malaise trap in a garden at Ottignies (UTM-grid FS.01) during 1981 and 1982 (leg. P. Des-

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