

A GENERIC REVISION OF THE FAMILY TYDEIDAE
(Acari : Actinedida)

IV. GENERIC DESCRIPTIONS, KEYS AND CONCLUSIONS*

by Henri M. ANDRE**

Abstract

Based on the results published in three previous articles, 42 genera of Tydeidae are proposed. *Proctotydaeus* BERLESE 1911 *sensu* FAIN & EVANS 1966 is returned to the Tydeidae. Two genera are defined as new combinations (*Proctotydaeus* and *Tydeus* KOCH 1835) while 22 others are listed as new. The genera are distributed in seven new subfamilies as follows : Australotydeinae (*Australotydeus* SPAIN 1969); Meyerellinae (*Meyerella* BAKER 1968, *Pseudotriophtydeus* n. gen.); Pretydeinae (*Pretydeus* n. gen., *Prelorryia* n. gen.); Pronematinae (*Apopronematus* n. gen., *Homeopronematus* n. gen., *Metapronematus* n. gen., *Naudea* MEYER & RODRIGUES 1965, *Parapronematus* BAKER 1965, *Pausia* KUZNETZOV & LIVSHITS 1972, *Proctotydaeus* n. comb., *Pronecupulatus* BAKER 1965, *Pronematulus* BAKER 1965, *Pronematus* CANESTRINI 1886 *sensu* BAKER 1965); Triophtydeinae (*Apo-triophtydeus* n. gen., *Metatriophtydeus* n. gen., *Pretriophtydeus* n. gen. and *Teletriophtydeus* n. gen.); Tydaeolinae (*Aesthetydeus* n. gen., *Coccotydaeolus* BAKER 1965, *Lasiotydeus* BERLESE 1908 *sensu* BAKER 1965, *Metatydaeolus* n. gen., *Microtydeus* THOR

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1931 *sensu* BAKER 1965, *Paratriophtydeus* BAKER 1966, *Paratydaeolus* n. gen., *Primotydeus* n. gen., *Pseudotydeus* BAKER & DELFINADO 1974, *Tydaeolus* BERLESE 1910 *sensu* BAKER 1965, *Tyndareus* LIVSHITS & KUZNETZOV 1972) and Tydeinae (*Afrotydeus* BAKER 1970, *Apolorryia* n. gen., *Eotydeus* KUZNETZOV 1973, *Homeotydeus* n. gen., *Idiolorryia* n. gen., *Krantzlorryia* n. gen., *Metalorryia* n. gen., *Neolorryia* n. gen., *Oribotydeus* n. gen., *Perafrottydeus* n. gen., *Tydeus* n. comb. and *Tydides* KUZNETZOV 1975).

Nine species are described: *Meyerella marshalli*, *Pseudotriophtydeus vegei*, *Metatriophtydeus lebruni*, *Homeopronematus vidae*, *Apopronematus bakeri*, *Paratydaeolus lukoschusi*, *Metatydaeolus joannis*, *Paratriophtydeus coineaui*, and *Primotydeus strandtmanni*.

The study concludes with a brief discussion of the systematic position of the family.

INTRODUCTION

This publication is the last of a series of four. The first dealt with the methodology used and offered some fundamental paradigms of Grandjean. Definitions of the different subfamilies also were proposed in the first part. The two subsequent publications were devoted to the study of organotaxy: they, respectively, dealt with the opisthosoma and gnathosoma (part II) and with the legs (part III).

Based on the results of these studies, 42 genera of Tydeidae are proposed. They are ranked alphabetically and described below. The descriptions are followed by:

- 1° a key to the stases,
- 2° a key to the subfamilies valid for any stase, and
- 3° a key to the genera only valid for the adults.

Certain conventions have been used in drafting the descriptions. Only generic information is utilized; i.e. characters common to all the Tydeidae (as the supracoxal setae for instance) are not mentioned. Utilization of the terms « procurved » and « recurved » in reference to the prodorsum does not refer to its shape but rather to the shape of the dehiscence line and the location

of the prodorsal setae, as explained in part II. If there are no modifying comments regarding the prodorsum, it should be assumed to be normal, with four pairs of setae present [(p1), (p2), (p3) and (s)]. The number of eyes is noted when it is known.

A variety of information is included under the term « opisthosoma ». The number of pairs of dorsal setae is noted under « dorsal chaetotaxy » and followed by the names of missing setae in parentheses (except for seta *l3*, which is never present in Tydeidae). The number of lyrifissures is listed under « poroidotaxy »; it is not deemed necessary to identify the missing lyrifissure since only (*ip*) is likely to disappear. « Genital organotaxy » is described by a series of formulae preceded by the abbreviation of the stase involved (Ad, T, D, P or L). The adult formula comprises three values separated by hyphens: the number of eugenitals, genitals and aggenitals (*eu - ge - ag*). If a setal number differs between sexes, both values are given and separated by a comma; the first refers to the female [for example: (*eu* ♀, *eu* ♂ - *ge - ag*)]. For the nymphs, only the number of genitals and aggenitals (*ge - ag*) are mentioned; the convention relative to sexual variation, as noted above, is applied where necessary. The number of pairs of genital acetabula in the adult also is noted, but only if other than two. Lastly, the epimeral formula is presented and the presence of coxal organs is mentioned when necessary.

Leg chaetotaxies are indicated by a series of conventional formulae preceded by the abbreviation of the stase. Eupathidia are then listed in ontogenic notation (1) and the number of solenidia is given. The palp is described by the conventional formula and some additional comments. Further information on essential particulars may conclude the description.

Species that should belong to a particular genus according to published accounts but have not been studied here are mentioned under the heading « other species ».

Similarly, species of special but not exceptional morphological interest which are represented by only one or two specimens are described as « generic units » (G.U.), and listed at the end of the generic diagnoses.

(1) This means that the stase at which the seta becomes eupathidial is indicated when necessary.

Lastly, the study concludes with a brief discussion of the systematic position of the family.

1. GENERIC DESCRIPTIONS

Aesthetydeus n. gen.

- DESCRIPTION : Strandtmann (1967).
- SYNONYM : *Tydeus* (*sensu* STRANDTMANN 1967).
- SPECIES STUDIED : *A. setsukoeae* (STRANDTMANN 1967) (monotypic), 1 ♂ paratype (Antarctica), 2 ♀ labelled « N. Victoria Land, Possession Is. 150 m, Antarctica, Nov. 8.1964, Gressitt » and nymphs labelled « Bishop Museum, Antarctica Possession I. D. XI. 64, Single large stone, J.L. Gressitt ».
- DIAGNOSIS : Prodorsum : procurved. Opisthosoma : dorsal chaetotaxy : 10 (*l2* and *b1* missing); poroidotaxy : 4; genital organotaxy : Ad (0,5-6-4), T (4-4), D (2-2); epimeral formula : (3-1-4-3). Legs : chaetotaxy : I (10-5-4-4-1) II (6-2-4-4-1) III (5-2-2-3-1) IV (5-2-1-2-0) in the adults and tritonymphs; eupathidia on tarsus I : (*tc*) and (*p*); solenidiotaxy : 3; femur IV undivided. Palp : 6 (1)-2-2 with *ba* well developed and a terminal eupathidium apparently double.
- TYPE-SPECIES : *Tydeus setsukoeae* STRANDTMANN 1967.

Afrotydeus BAKER 1970

- DESCRIPTION : Baker (1970).
- SYNONYM : *Tydeus* (*Afrotydeus*) BAKER 1970 (in part).
- SPECIES STUDIED : *A. kenyensis* BAKER 1970, 1 ♀ holotype (Kenya); *Afrotydeus* sp. 3 ♀ + 1 deutonymph labelled « on tree, Turrialba, Costa Rica, April 3, 1959, E.W. Baker Coll. » NMNH n° 3189.
- DIAGNOSIS : Prodorsum recurved. Opisthosoma : dorsal chaetotaxy : 10 (*l2* and *b1* missing); poroidotaxy : 3; genital organotaxy : Ad (0-4-4), D (0-2); epimeral formula : (3-1-4-2); coxal organ. Legs : chaetotaxy : I (8-4-3-3-1) II (6-2-2-1-0) III (5-2-1-1-0) IV (5-2-1-0-0) in the deutonymph and adult; eupathidia on tarsus I : (*ft'*), (*tc*), (*p*); solenidiotaxy : 2; femur IV undivided. Palp : (6-2-2) + ω, with a double eupathidium at the tip of the tarsus. Other

features : as in *Perafrotydeus* but unlike the other Tydeinae, the paraproctal suckers are well developed. Seta *l'* on the tibia is slender with a small root.

- OTHER SPECIES : likely some other species belonging to the subgenus *Afrotydeus* as defined by Baker 1970.
- TYPE-SPECIES : *Tydeus* (*Afrotydeus*) *kenyensis* Baker 1970.

Apolorryia n. gen.

- DESCRIPTION : Baker (1968b).
- SYNONYM : *Lorryia* (BAKER 1968b in part).
- SPECIES STUDIED : *A. congoensis* (BAKER 1968) (monotypic), ♀ holotype and paratype (Zaire).
- DIAGNOSIS : Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 9 (*l2*, *hi* and *b2* missing); poroidotaxy : 3; reticulate pattern; genital organotaxy : (0-3-3); epimeral formula : (3-1-4-2); coxal organ. Legs : chaetotaxy : I (7-3-1-2-0) II (6-1-1-2-0) III (5-1-0-1-0) IV (5-1-0-1-0); eupathidia on tarsus I : (*tc*) and (*p*); solenidiotaxy : 2; femur IV undivided. Palp : (5?-1-2) + ω with a double eupathidium at the tip of the tarsus.
- TYPE-SPECIES : *Lorryia congoensis* BAKER 1968.

Apopronematus n. gen.

- DESCRIPTION : *A. bakeri* n. sp. (monotypic), 3 ♀ + 1 tritonymph.
- DIAGNOSIS : Prodorsum : procurved. Opisthosoma : dorsal chaetotaxy : 11 (*l2* missing); poroidotaxy : 4; genital organotaxy : Ad (0-0-3), T (0-3), no genital acetabula; epimeral formula : (3-1-4-2). Legs : no apotele I; chaetotaxy : I (8-4-2-3-1) II (6-2-2-3-1) III (5-2-1-2-1) IV (5-2-1-1-0); eupathidia on tarsus I : (*p*) and (*tc*); solenidiotaxy : 3; femur IV seemingly divided. Palp : (5-1-2) + ω with a double eupathidium at the tip of the tarsus.
- DESCRIPTION of *A. bakeri* (2) : the species is described by figures 1 and 2. Material 3 ♀ labelled « Paicines, Calif. —

(2) This species is named for Dr. E. W. Baker who has worked extensively on Tydeidae and who has very kindly sent me a great number of type specimens for study.

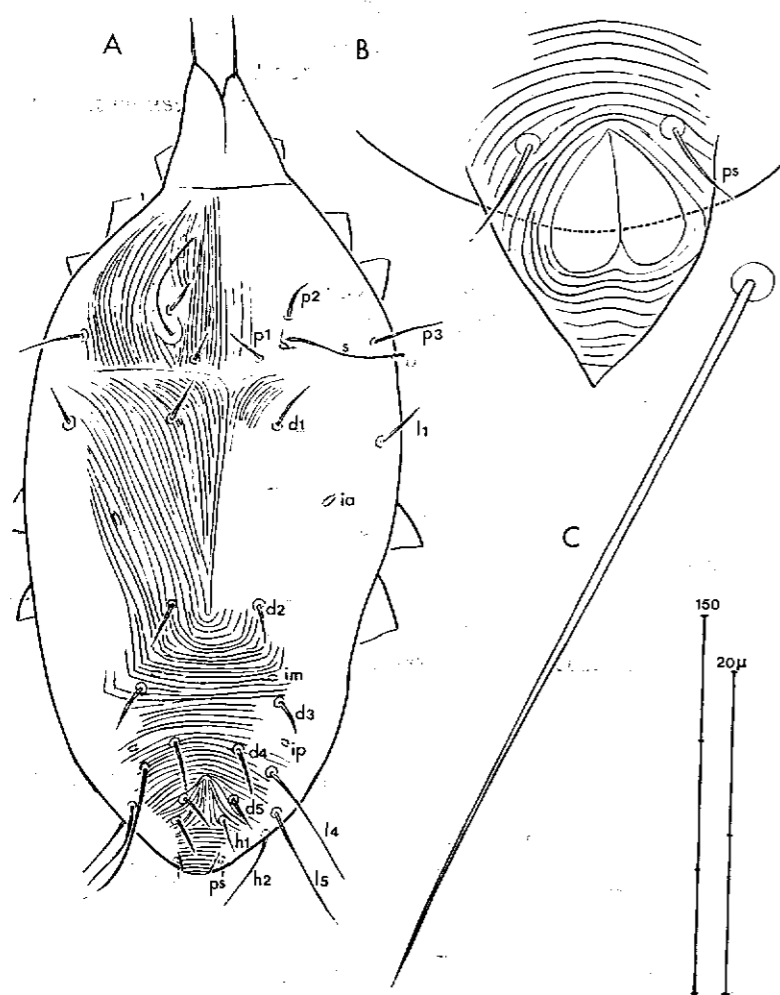


FIG. 1. — *Apopronematus bakeri*. Dorsal habitus (A); « tail » and anal-area of tritonymph (B); seta *l5* (C).

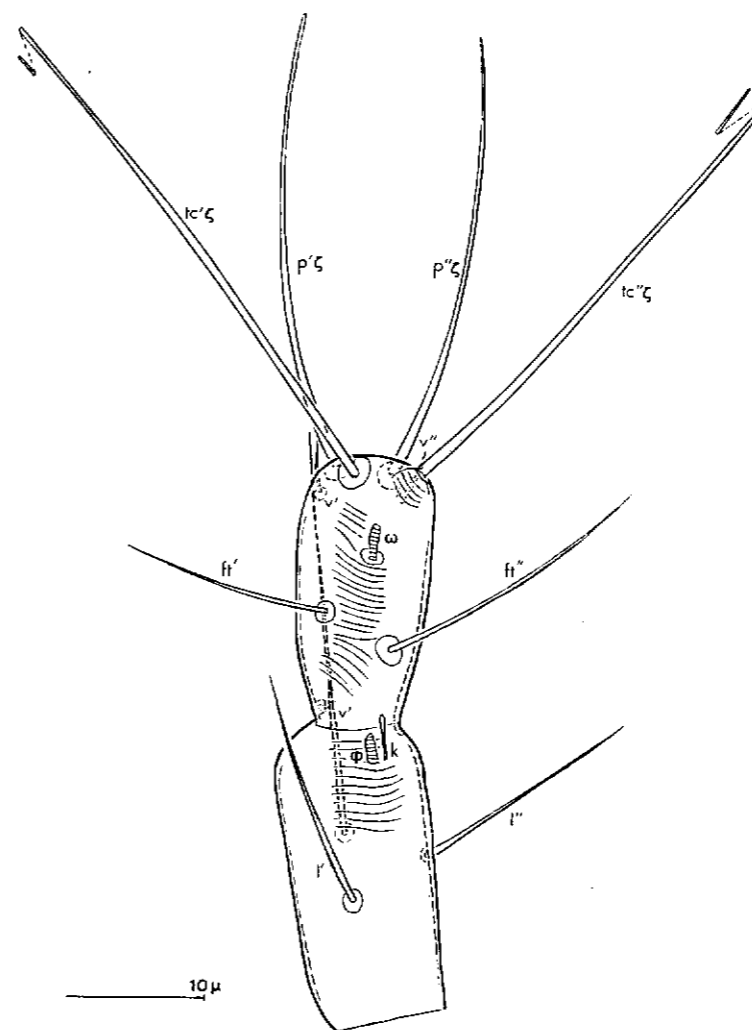


FIG. 2. — *Apopronematus bakeri*. Tarsus and tibia I.

Hilltop Plot, Ex Pinot noir Bark, IV-24-1969, coll. D. Kinn », 1 tritonymph labelled « Napa Valley, winery, St Helena, Calif. 1-26-'70 — Ex. Grape Bark, var. : Sauvignon vert Coll. O. Kinn ».

— TYPE-SPECIES : *A. bakeri* n. sp.

Apotriophydeus n. gen.

— DESCRIPTION : Strandtmann (1967).

— SYNONYMS : *Tydeus* (sensu STRANDTMANN 1967), *Triophydeus* (BAKER 1970).

— SPECIES STUDIED : *A. erebus* (STRANDTMANN 1967) : 1 tritonymph paratype (Antarctica), 1 ♂ labelled « Moss and lichen — Tottan Mts — Z92H — T.J. Tilbrook — 1965 » ; *A. wilkesi* (STRANDTMANN 1967) : 1 tritonymph paratype (Antarctica), 2 ♂ labelled « Bishop Museum — Dufek Rge — Pensacolas Flotation — Loc. 67 — 82° 37S 52° 56W — II — XII — 1965 — O.R. Wilkes » and « Bishop Museum — Antarctic, Loc. 108, 1830 m — Summit Dufek range — 82°38S 52°20W — Flotation — 26 Dec. 1965 — O.R. Wilkes » ; *A. alaskensis* (BAKER 1965) ♀ and ♂ types (Alaska).

— DIAGNOSIS : Prodorsum : recurved ; three eyes. Opisthosoma : dorsal chaetotaxy : 11 (*l2* missing) ; poroidotaxy : 4 ; genital organotaxy : Ad (2,6-6-5), T (4-4) ; epimeral formula : (3-1-3-3). Legs : chaetotaxy : I (11-5-3-5-1) II (6-3-2-4-1) III (5-2-2-3-1) IV (5-2-2-(1-2)-0) ; eupathidia variable (see below) ; solenidiotaxy : 2 ; femur IV divided. Palp : (6-2-2) + ω with a triple eupathidium at the tip of the tarsus.

— FURTHER COMMENTS : The species are easily distinguished on the basis of eupathidia. *A. alaskensis* has the maximum eupathidial number ; i. e. eight on tarsus I [(*ft*), (*tc*), (*it*) and (*p*)], two on tarsus II (*ft''* and *p''*) and one on tarsi III and IV, *ft*. *A. erebus* has the same condition minus *ft''*II, *ft* III and *ft* IV. *A. wilkesi* has only five eupathidia [(*tc* I), (*p* I) and *p''* II]. *A. wilkesi* and *A. erebus* are thus two species contrarily to the opinion of Rounsevell (1977). Lastly, Strandtmann (1967) described a typical form of « *Tydeus tilbrookii* » and a variety. The typical form belongs to the new genus *Pretriophydeus* while the variety has the chaetotaxy described above. The eupathidia of this variety

are (*tc* I), (*p* I), *ft''* II, *p''* II, *ft* III and *ft* IV. Only one specimen was available for this study but a redescription should be undertaken since the variety is « variable » according to Strandtmann (1967).

— OTHER SPECIES : none.

— TYPE-SPECIES : *Tydeus wilkesi* STRANDTMANN 1967.

Australotydeus SPAIN 1969 (Figure 3)

— DESCRIPTION : Spain (1969).

— SPECIES STUDIED : *Australotydeus kirstenae* SPAIN 1969 (monotypic) : 1 ♂ paratype, 1 tritonymph paratype (New Zealand).

— DIAGNOSIS : Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 11 setae (*h1* missing) ; poroidotaxy : 4 ; genital organotaxy : Ad (0,3-4-6), T (4-4) ; epimeral formula : (2-1-4-3) ; coxal organ present. Legs : chaetotaxy : I (10-5-3-5-1) II (6-2-3-3-1) III (5-2-1-1-1) IV (5-2-0-2-0) ; eupathidia on tarsus I : *ft''*, (*tc*) and (*p*) ; solenidiotaxy : 2 ; femur IV entire. Palp : (6-2-2) + ω, with *d* bifurcate and with large double terminal eupathidium. Other features : two large paraproctal suckers, progenital depression in the tritonymph, dorsal setae of idiosoma hollowed [except (*ps*)].

— TYPE-SPECIES : *Australotydeus kirstenae* SPAIN 1969.

Coccotydaeolus BAKER 1965

— DESCRIPTION : Baker (1965).

— SPECIES STUDIED : *C. krantzi* BAKER 1965 : 1 ♀ holotype (California) ; *C. bakeri* WOOD 1965 : 1 ♀ holotype (Yorkshire, Great-Britain) ; *Coccotydaeolus* sp. : 1 ♀ labelled « 20-6-60, Ex Acer Mull, Morgan Arboretum, P.Q. Canada, Hoger's 17-7-63, Gurr's 24-7-63, coll. V. Marshall ».

— DIAGNOSIS : Prodorsum : procurved ; no eyes ; the species studied have clublike sensilla. Opisthosoma : dorsal chaetotaxy : 11 (*l2* missing) ; poroidotaxy : 4 ; genital organotaxy : (0,?-3-4) ; epimeral formula : (3-1-4-2). Legs : chaetotaxy : I (12-5-4-4-1) II (8-2-2-3-1) III (7-2-1-2-1) IV (7-2-0-2-0) ; eupathidia on tarsus I : (*tc*), (*p*) and sometimes *ft''* ; solenidiotaxy : 3 ; femur IV undivided. Palp : (5-2-2) or

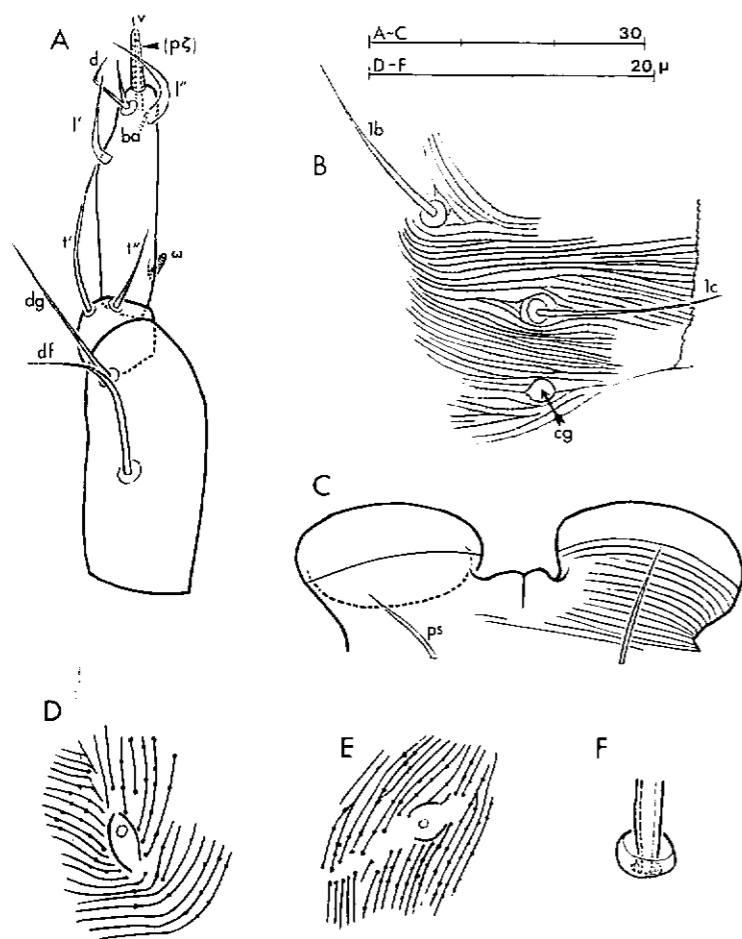


FIG. 3. — *Australotydeus kirstenae*. Palp (A); coxal organ (B); paraproctal suckers (C); lyrifissures *ip* (D) and *ib* (E); insertion of seta *l2* (F).

(5-2-1) + ω with a triple eupathidium at the tip of the tarsus.

— OTHER SPECIES : none.

— TYPE-SPECIES : *C. krantzi* BAKER 1965.

Eotydeus KUZNETZOV 1973

— DESCRIPTION : Kuznetzov (1973).

— SYNONYM : *Tydeus* (*Eotydeus*) (KUZNETZOV 1973).

— SPECIES STUDIED : *Eotydeus* sp. : 1 ♀ labelled « 29 - IV - 62 ex. Balsam fir duff, Maynooth, Ont. Coll. J.H. Martin, Canada Dpt. Forestry & Rural Development ».

— DIAGNOSIS : Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 10 (*l2* and *h1* missing); poroidotaxy : 3; genital organotaxy : (0-2-3); epimeral formula : (3-1-4-2); coxal organ. Legs : chaetotaxy : I (8-4-3-3-1) II (6-2-2-3-0) III (5-2-1-2-1) IV (5-2-1-1-0); eupathidia on tarsus I : *ft''*, (*tc*), (*p*); solenidotaxy : 2; femur IV entire. Palp : (6-2-2) + ω with a double eupathidium at the end of the tarsus.

— OTHER SPECIES : *Eotydeus mirabilis* KUZNETZOV 1973.

— TYPE-SPECIES : *Tydeus* (*Eotydeus*) *mirabilis* KUZNETZOV 1973.

Homepronematus n. gen.

— DESCRIPTION : Schruft (1972).

— SYNONYM : *Pronematus* (SCHRUFT 1972).

— SPECIES STUDIED : *H. staercki* (SCHRUFT 1972) : several individuals without specific label (from the Schruft's collection); *H. vidae* n. sp.

— DIAGNOSIS : Prodorsum : procurved; no eyes.

Opisthosoma : dorsal chaetotaxy : 11 (*l2* missing); poroidotaxy : 4; genital organotaxy : Ad & T (0-0-4,1), D (0-2, ?), P (0-0); one pair of genital acetabula; epimeral formula : Ad, T & D (3-1-4-2) P (3-1-4-0), L (3-1-2). Legs : no apotele I but the larva which has an apotele I with vestigial claws; chaetotaxy : I (8-4-3-3-1) II (6-2-3-3-1) III (6-2-2-2-1) IV (6-2-1-2-0) in the adults and tritonymphs; deutonymph with one seta less on tarsi III and IV (*tc''*) and with no *tr* I, *tr* II; the protonymph as the deutonymph except IV (5-0-0-0-0); larval chaetotaxy : I (6-4-3-3-0) II (6-2-3-3-0) III (5-2-

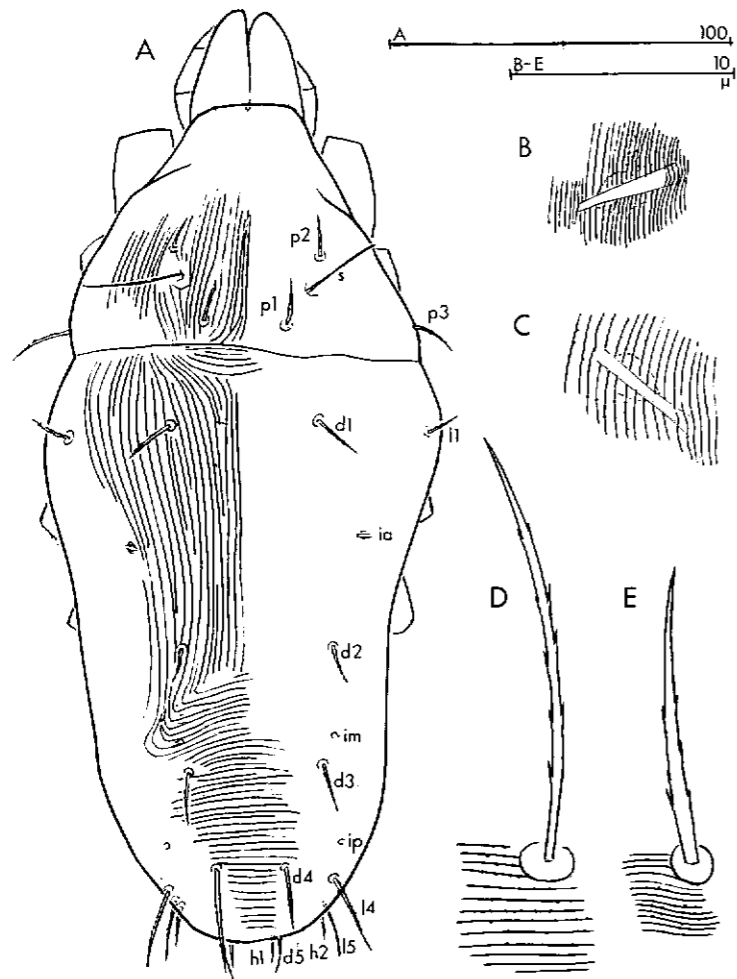


FIG. 4. — *Homeopronematus vidae*. Dorsal habitus (A); lyrifissure *ia* (left) (C) and seta *l1* (D). *Homeopronematus staercki*: lyrifissure *ia* (right) (B) and seta *l1* (E).

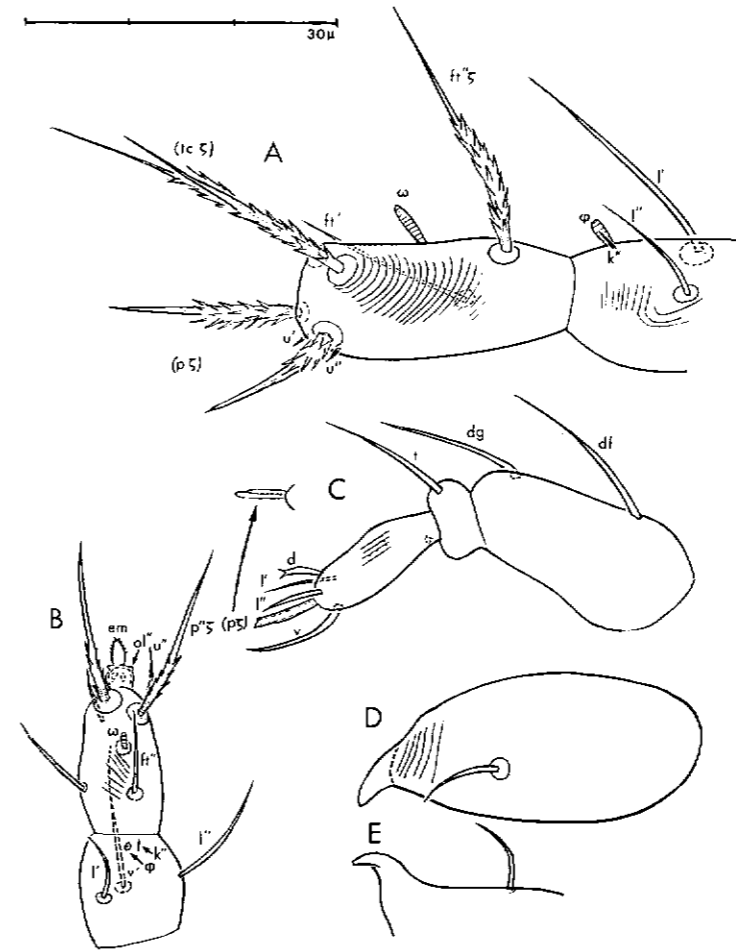


FIG. 5. — *Homeopronematus vidae*. Tarsus and tibia I of adult (A) and larva (B); palp in antiaxial view (C); femur IV of male in dorsal (D) and antiaxial (E) views.

2-2-0); eupathidia on tarsus I: *ft''*, (*tc*), (*p*); double anabasis in the larva; sclenidotaxy: 3; femur IV entire. Palp: (5-1-2) + ω with a double eupathidium at the tip of the tarsus.

— DESCRIPTION of *H. vidae* n. sp. (3) (figures 4 and 5). *H. vidae* is distinguished from *H. staercki* by the density of striation; the shape and length of the idiosomal setae. *Material*: ♂, ♀, and nymphs in a vial labelled « Tydeidae ex lab culture, Univ. Calif. Berkeley, 24-III-78, M.A. Hoy »; 1 ♀ labelled « Christian Brothers, Napa Co, Calif., IV-3-'69, ex cut canes of Zinfandel grape, coll. R.L. Doult, D.N. Kinn ».

— OTHER SPECIES: none.

— TYPE-SPECIES: *H. vidae* n. sp.

Homeotydeus n. gen.

— DESCRIPTION: Baker (1970).

— SYNONYMS: *Lorryia* (BAKER 1944b); *Paralorryia* (BAKER 1965, 1968 d in part); *Tydeus* (BAKER 1970 in part).

— SPECIES STUDIED: *H. cumbrensis* (BAKER 1944), ♀ type; *H. shawi* (BAKER 1943), ♀ paratype of *Melanotydeus brachipalpus* synonymized with *Tydeus shawi* by BAKER (1970); *H. arthurbakeri* (BAKER 1944), ♀ paratype; two other species (not yet described) collected in Belgium on bark of different tree species, all the stases.

— DIAGNOSIS: Prodorsum: recurved; two eyes. Opisthosoma: dorsal chaetotaxy: 10 (*l2* 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 organ. Legs: chaetotaxy: I (8-4-3-3-0 or 1) 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 *tr* I 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: (*tc* N1) and (*p*); double anabasis with (*tc*) vestigial in the larva; solenidotaxy: 2; femur IV entire.

(3) The species is named for Mrs V. Krantz whose hospitality during my sojourn at Oregon State University was greatly appreciated.

Palp: (6-2-2) + ω with a double eupathidium at the tip of the tarsus.

— OTHER SPECIES: *H. andreae* (UECKERMANN and MEYER 1979b).

Idiolorryia n. gen.

— DESCRIPTION: Baker (1968).

— SYNONYM: *Lorryia* (BAKER 1968 in part).

— SPECIES STUDIED: *I. macquillani* (BAKER 1968): ♂ holotype (Ireland) + tritonymph (same data); *Idiolorryia* sp.: ♀, trito- and protonymphs, larva from bark, Ruelle and St-Mard (Belgium).

— DIAGNOSIS: Prodorsum: recurved. Opisthosoma: dorsal chaetotaxy: 9 (*l2*, *h1* and *h2* missing); poroidotaxy: 3; genital organotaxy: Ad (0,2-6-4), T (2-4), P (0-1); epimeral formulae: Ad & T (3-1-4-2), P (3-1-3-0), L (3-1-2); coxal organ. Legs: chaetotaxy: I (8-4-2-3-0) II (6-1 or 2-1-3-0) III (5-1-1-2-1) IV (5-1-1-1-0) in the adult and tritonymph; protonymph with only five tarsal setae on the fourth leg; larva with no *tr* I and no leg IV; eupathidia on tarsus I: *ft''*, (*tc*), (*p*); double anabasis; solenidotaxy: 1; femur IV entire. Palp: (6-1-2) + ω with a double eupathidium at the end of the tarsus. Other feature: gnathosoma elongate with movable chelae very long and straight; palpal tarsus long and slender, as are the setae it bears. Reticulate striation.

— TYPE-SPECIES: *Lorryia macquillani* BAKER 1968.

Krantzlorryia n. gen. (4)

— DESCRIPTION: Baker (1968b).

— SYNONYM: *Lorryia* (BAKER 1968b in part).

— SPECIES STUDIED: *K. grewia* (BAKER 1968) (monotypic): 1 ♀ holotype (Zaire).

— DIAGNOSIS: Prodorsum: recurved. Opisthosoma: dorsal chaetotaxy: 10 (*l2* and *h1* missing); reticulate striation; poroidotaxy: 3; genital chaetotaxy: (0-6-4); epimeral

(4) This genus is named for Dr. G.W. Krantz, under whom this work was achieved.

formula (3-1-4-3); coxal organ. Legs : I (8-3-2-2-0) II (6-2-1-2-0) III (5-2-0-1-1) IV (5-2-0-1-0); eupathidia on tarsus I : (*tc*), (*p*); solenidiotaxy : 2; femur IV undivided. Palp : (6-1-2) + ω with a double eupathidium at the end of the tarsus.

— TYPE-SPECIES : *Lorryia grewia* BAKER 1968.

Lasiotydeus BERLESE 1908 *sensu* BAKER 1965

— DESCRIPTION : Baker (1965).

— SPECIES STUDIED : *L. krantzi* BAKER 1965 : ♀ holotype (California); *L. krantzi* ♀ and ♂ labelled « 77 - IX - 20, ex K - 76 - C 3A, coll. V.G. Marshall, Canadian forestry service » from Kamloops, B.C., Canada.

— DIAGNOSIS : Prodorsum : recurved or slightly procurved, two eyes. Opisthosoma : dorsal chaetotaxy : 11 (*l2* missing); poroidotaxy : 4; genital organotaxy : (0,4-6-4); epimeral formula : (3-1-4-3). Legs : chaetotaxy : I (12-5-4-6-1) II (8-2-4-4-1) III (7-2-3-3-1) IV (7-2-1-2-0); eupathidia on tarsus I : (*tc*) and (*p*); solenidiotaxy : 3; femur IV entire. Palp : (6-2-2) with *ba* vestigial and a terminal eupathidium apparently double. Other feature : a well developed empodial claw.

— REMARKS : This genus is closely related to *Primotydeus*. Its habitus recalls a Tydeinae as does its empodial claws, palp eupathidium, and the prodorsal chaetotactic pattern.

— OTHER SPECIES : *L. volaticus* LIVSHITZ 1973.

— TYPE-SPECIES : *L. krantzi* BAKER 1965.

Metalorryia n. gen.

— DESCRIPTION : Baker (1968b).

— SYNONYM : *Lorryia* (BAKER 1968b in part).

— SPECIES STUDIED : *M. armaghensis* (BAKER 1968) : tritonymph, holotype (Ireland); specimens (adult, nymphs and larva) from Belgium.

— DIAGNOSIS : Prodorsum : recurved; two eyes. Opisthosoma : dorsal chaetotaxy : 10 (*l2* 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 organ. Legs : chaetotaxy : I (8-3-2-3-0) II (6-2-1-2-0) III (5-2-1-1-1) IV (5-2-1-1-0) in the

adult, trito- and deutonymphs; protonymph with no *tr* I and with only five tarsal setae on the fourth leg; larva : I (8-3-2-3-0) II (6-2-1-2-0) III (5-2-1-1-0); eupathidia on tarsus I : *ft''* N2, (*tc* N1), (*p*); double anabasis with (*tc*) vestigial in the larva; solenidiotaxy : 2; femur IV entire. Palp : (6-1-2) + ω with a double eupathidium at the end of the palp.

— OTHER SPECIES : likely *M. magdalenae* (GERSON 1968).

— TYPE-SPECIES : *Lorryia armaghensis* BAKER 1968.

Metapronematus n. gen.

— DESCRIPTION : Treat (1970).

— SYNONYM : *Pronematus* (TREAT 1970).

— SPECIES STUDIED : *M. leucobippeus* (TREAT 1970) (monotypic) : 2 ♀ paratype, one tritonymph paratype (Massachusetts). A larva was described by Treat but, unfortunately, was lost.

— DIAGNOSIS : Prodorsum : procurved. Opisthosoma : dorsal chaetotaxy : 10 (*l2* and *h1* missing); poroidotaxy : 4; genital organotaxy : Ad & T (0-0-3); one pair of genital acetabula; epimeral formula : Ad & T (3-1-4-2), L (3-1-1). Legs : apotele I with no, or at least reduced, claws in the larva; apotele I absent in the tritonymph and adult; chaetotaxy : I (8-4-3-3-1) II (6-2-3-3-1) III (6-2-2-2-1) IV (5-2-1-1-0) in the tritonymph and adult; in the larva : I (6-4-3-3-0) II (6-2-3-3-0) III (5-2-2-2-0); eupathidia on tarsus I : *ft''*, (*tc*) and (*p*); larva with double anabasis; solenidiotaxy : 3; femur IV undivided. Palp : (5-1-2) with a double eupathidium at the tip of the tarsus.

— TYPE-SPECIES : *Pronematus leucobippeus* TREAT 1970.

Metatriophtydeus n. gen.

— DESCRIPTION : Wood (1965).

— SYNONYM : *Triophtydeus* (WOOD 1965).

— SPECIES STUDIED : *M. lebruni* n. sp. (all stases); *M. craveni* (WOOD 1965) : ♀ holotype and paratype; *Metatriophtydeus* sp. : 2 ♀ labelled « L. Martini winery, St. Helena, Napa Co., Calif., I - 15 - 70, Ex. Budscale : var. Sauvignon Vert. Coll. : D. Kinn » and « Martini vineyards, St Helena, Calif. VII - 10 - 69, Ex Sauvignon vert, coll. D. Kinn » and 1 larva labelled « Christian Brothers, Napa Co.,

Calif., IV - 3 - 69, Ex cutcanes of Zinfandel grape, coll. R.L. Douth, D.W. Kinn ».

— DIAGNOSIS : Prodorsum : recurved ; three eyes.

Opisthosoma : dorsal chaetotaxy : 11 setae (12 missing) ; poroidotaxy : 4 ; genital organotaxy : Ad (2,6-6-5 or 4), T (4-4), D (2-2), P (0-1) ; epimeral formulae : Ad & T (3-1-3-3), D (3-1-3-2), P (3-1-2-0), L (3-1-2). Legs : chaetotaxy : I (10-5-3-5-1) II (6-2-2-4-1) III (5-1-2-1-1) IV (5-2-2-(1-2)-0) in adult and tritonymph, deutonymph : idem but I (10-4-3-4-0) II (6-2-2-4-0), protonymph : I (8-4-3-4-0) II (6-2-2-4-0) III (5-1-2-1-1) IV (5-0-0-0-0), larva : same chaetotaxy as the protonymph but without leg IV ; eupathidia on tarsus I : (ft N2), (ic N1), (it N3), (p), on tarsus II : ft'' N3, p'', on tarsus III : ft Ad, and IV : ft N3 ; larva with simple anabasis ; solenidiotaxy : 2 ; femur IV undivided. Palp : (6-2-2) + ω with a triple eupathidium on the tarsus.

— DESCRIPTION of *Metatriophtydeus lebruni* n. sp. (5) (figures 6, 15D). Organotaxy defined in the generic description ; five pairs of aggenitals in the adult (instead of four pairs in *M. craveni*). The presence of (ps) is vertitional. Material : all the stases collected in Belgium (Ruelle and St Mard) on bark of different tree species (the ecology of *M. lebruni* is defined by André in 1975 (under the old name « *Triophtydeus* ») and 1979.

— OTHER SPECIES : *M. flatus* (LIVSHITZ 1973).

— TYPE-SPECIES : *M. lebruni* n. sp.

Metatydaeolus n. gen.

— SPECIES STUDIED : *Metatydaeolus* sp. A : 2 ♀ labelled « Ex Aspen Mull, Morgan Arboretum, P.Q. Canada, 15 - VI - 65, Coll. J.R. Hill » ; *Metatydaeolus* sp. B : 1 ♀ labelled « 20 - 6 - 60 H-A, Tsuga Mor, Morgan Arboretum, P.Q., Canada, Coll. V. Marshall » ; *Metatydaeolus joannis* n. sp..

— DIAGNOSIS : Prodorsum : procurved ; clublike sensillum. Opisthosoma : dorsal chaetotaxy : 11 (12 missing) ; poroidotaxy : 4 ; genital organotaxy : (0-4-3) ; epimeral formula : (3-1-4-3). Legs : chaetotaxy : I (12-5-4-4-1) II (8-2-4-

(5) This species is called for Dr. Ph. Lebrun, who introduced me to mites and their ecology.

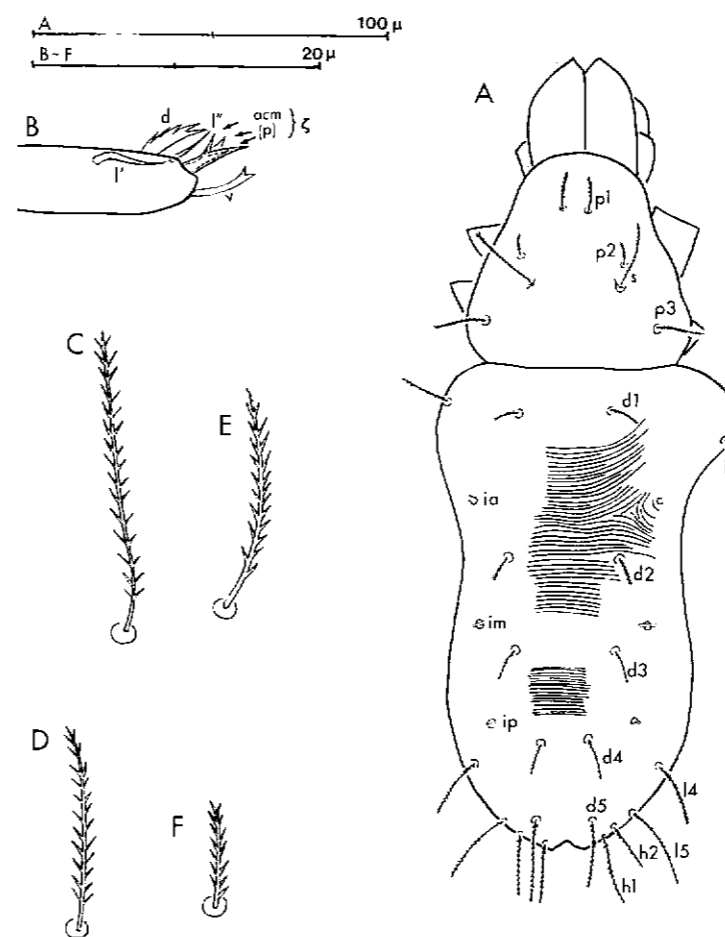


FIG. 6. — *Metatriophtydeus lebruni*. Dorsal habitus (A) ; tip of the palptarsus (B) ; setae l4 (C) and p3 (D). *Metatriophtydeus craveni* : setae l4 (E) and p3 (F).

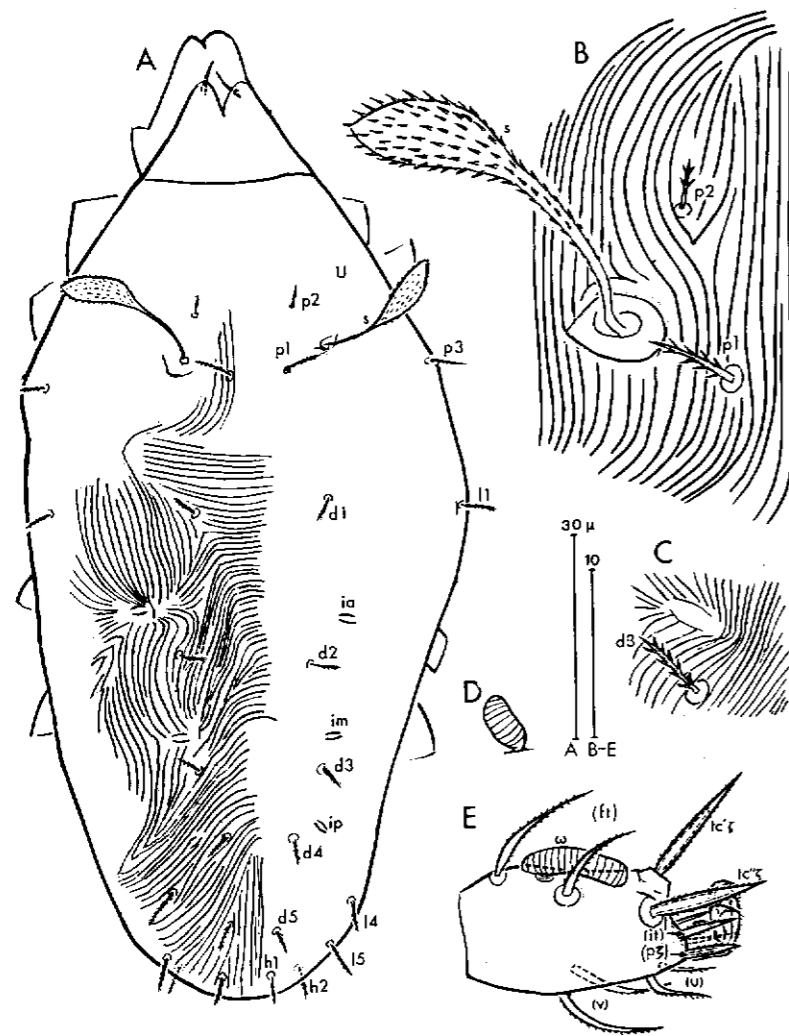


FIG. 7. — *Metatydaeolus joannis*. Dorsal habitus (A); detail of prodorsum (B) and of opisthosoma (C); solenidion ω II (D) and tarsus I in antiaxial view (E).

4-1) III (7-2-2-3-1) IV (7-2-1-2-0); eupathidia on tarsus I: ft'' , (tc) , (p) ; solenidiotaxy: 3; femur IV undivided. Palp: (5-2-2) + ω with a triple eupathidium.

— DESCRIPTION of *Metatydaeolus joannis* (6) (figure 7). Organotaxy as described above. Material: 3 ♂ (one in bad state) labelled « 22 - 8 - 60 L + F, Ex *Fagus mor*, Morgan Arboretum, P.Q. Canada, Coll. V. Marshall ».

— OTHER SPECIES: none.

— TYPE-SPECIES: *M. joannis* n. sp.

Meyerella BAKER 1968

— DESCRIPTION: Baker (1944), Baker (1968).

— SYNONYM: *Tydeus* (BAKER 1944b).

— SPECIMENS STUDIED: *M. bifurcatus* (BAKER 1944): 1 ♀ holotype (Mexico); *M. marshalli* n. sp. (♂ and the three nymphs).

— DIAGNOSIS: Prodorsum: recurved. Opisthosoma: dorsal chaetotaxy: 11 setae ($l2$ missing); poroidotaxy: 4; genital organotaxy: Ad (4-6-5), T (4-4), D (2-2), P (0-1); epimeral formulae: Ad & T (3-1-3-3), D (3-1-3-2), P (3-1-2-0). Legs: chaetotaxy: I (12-6-4-5-1) II (7-3-3-4-1) III (7 or 5-2-2-3-1) IV (7 or 5-2-3-(1-2)-1) in the adult, in the tritonymph: idem but tarsi III and IV always with only five setae, in deutonymph: tarsus II with only six setae and no tr IV, in the protonymph: I (12-5-4-5-0) II (6-2-2-4-0) III (5-2-2-3-1) IV (5-0-0-0-0), eupathidia on tarsus I: $(ft$ N2), (tc) , $it''N2$, $it''N3$, (p) and on tarsus II: p'' ; solenidiotaxy: 4; femur IV divided. Palp: (8-2-2) + ω with four tarsal eupathidia.

— DESCRIPTION of *Meyerella marshalli* n. sp. (7). Organotaxy is defined in the generic description. Tarsus III and IV with five setae in the adults. Figures 8, 9 illustrate the new species. It differs from *M. bifurcatus* in the following characters: $d4$ bifurcate rather than simple, the shape of the palp eupathidia are different (compare with figure 5C in part II), shape of the opisthosomal setae (compare figures 9 H

(6) This species is named for my father, Jean André.

(7) This species is named for Dr. V.G. Marshall whose help during this study was greatly appreciated.

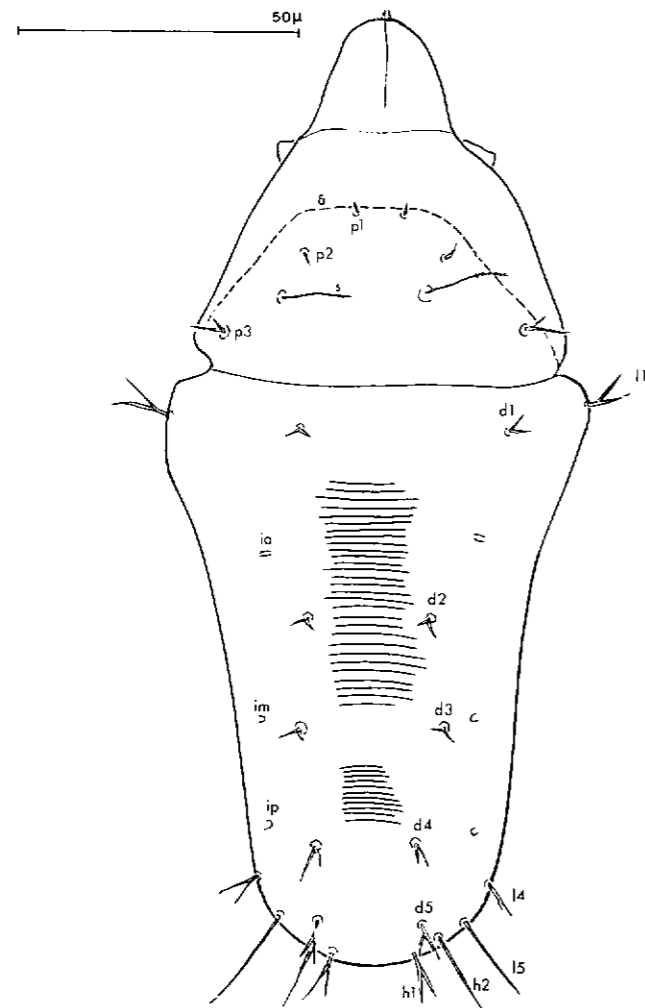


FIG. 8. — *Meyerella marshalli*. Dorsal habitus of a deutonymph.

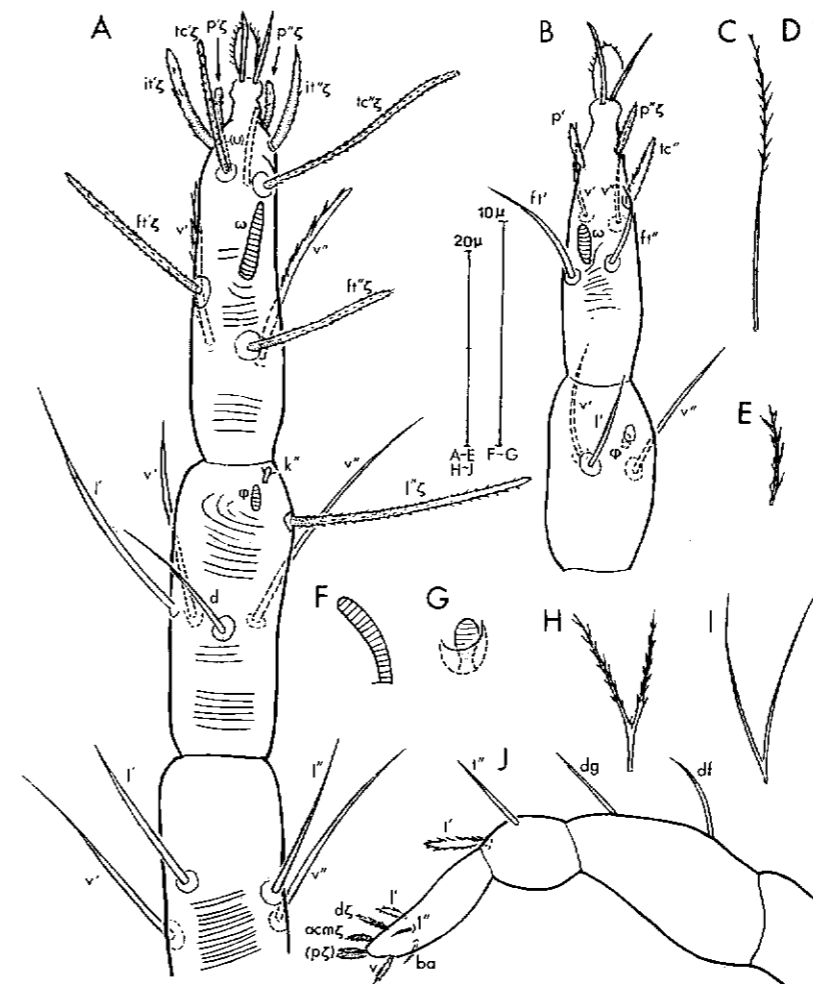


FIG. 9. — *Meyerella marshalli*. Tarsus, tibia and genu I in dorsal view (A); tarsus and tibia II in dorsal view (B); sensillum (C); seta 1a (E), solenidia φ I (F) and φ II (G), seta h1 (H) and palp in antiaxial view (J). *Meyerella bifurcatus*: sensillum (D) and seta h1 (I).

and I), *la* serrate rather than smooth, with five setae on tarsi III and IV in adult rather than seven. The description is based on the three nymphs and a ♀ found in the Dr Marshall's collection. The labels give as information the date (16-V-76) or (77-9-20) and a code number (K-D-75-# 1A, K-D-75-# 2A, K-76-D : 2A, K-76-D : 5A, K-76-D : 6A or K-76-C : 5A). All the slides bear the following : « Coll. V.G. Marshall. Canadian Forestry Service ». The mites were collected in Kamloops, B.C., Canada.

— OTHER SPECIES : *M. petua* LIVSHITZ 1972 (which has also *l4* simple).

— TYPE-SPECIES : *Tydeus bifurcatus* BAKER 1944.

Microtydeus THOR 1931 *sensu* BAKER 1965

— DESCRIPTION : Baker (1965).

— SPECIES STUDIED : *Microtydeus beltrani* BAKER 1944 : ♀ paratype (Mexico); *Microtydeus subterraneus* WOOD 1965 : ♀ holotype + paratype (Yorkshire, Great Britain); *Microtydeus* sp. : 1 ♀ labelled « Host *Parus caeruleus*, Loc. Nijmegen, Date 7-VI-73, Lukoschus coll »; *Microtydeus* sp. : ♀ (in *Evernia prunastri* on *Populus*, St. Mard, Belgium, Sept. 1974); *Microtydeus* spp. : ♀, deutonymph and tritonymph, larva (ex. litter, mull... Morgan Arboretum, P.Q., Canada, Coll. V.G. Marshall).

— DIAGNOSIS : Prodorsum : procurved. Opisthosoma : dorsal chaetotaxy : 11 (*l2* missing); poroidotaxy : 4; genital organotaxy : Ad (0,?-2-3), D (0-2), P (0-0); epimeral formula : Ad (3-1-4-3), D (3-1-4-2), P (3-1-3-0), L (3-1-2). Legs : chaetotaxy : I (11-5-4-6-1) II (8-2-4-4-1) III (7-2-1-3-1) IV (7-2-1-2-0) in the adults; deutonymph as the adults but with two setae less on tarsi [*it* on tarsus I and (*tc*) on the other]; protonymph : I (9-5-4-6-0) II (6-2-4-4-0) III (5-2-1-3-1) IV (5-0-0-0-0); larva as the protonymph but minus leg IV and with double anabasis and (*tc*) vestigials on tarsus I; eupathidia on tarsus I : *ft''* N2, (*tc* N1), (*p*); solenidiotaxy : 3; femur IV undivided. Palp : 6 (1)-2-2 with *ba* vestigial and a triple terminal eupathidium.

— OTHER SPECIES : *Microtydeus bellus* LIVSHITZ and KUZNETZOV 1973.

Naudea MEYER and RODRIGUES 1965

— DESCRIPTION : Meyer and Rodrigues (1965).

— SPECIES STUDIED : none.

— DIAGNOSIS : (according to Meyer & Rodrigues 1965 as well as Baker & Delfinado 1976) : Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 10 (*l2* and *b1* missing); poroidotaxy : ?; genital organotaxy : (0-0-4)?; epimeral formula : (3-1-4-2). Legs : chaetotaxy : I (8-4-3-3-1) II (7-2-3-3-1) III (7-2-2-2-1) IV (7-2-1-(1-1)-0); solenidiotaxy : 3; femur IV divided. Palp : (5-1-2). Other features : claws vestigials or absent on apotele I.

— REMARK : The only one species : *Naudea richinda* Meyer and Rodrigues 1965 was not available for this study.

— TYPE-SPECIES : *Naudea richinda* MEYER & RODRIGUES 1965.

Neolorryia n. gen.

— DESCRIPTION : Baker (1968 b).

— SYNONYM : *Lorryia* (BAKER 1968 b in part).

— SPECIES STUDIED : *N. boycei* (BAKER 1968) : 1 ♀ holotype with a trito- and a deutonymph (Mexico); *N. pandana* (BAKER 1968) : 1 ♀ holotype (Hawaii).

— DIAGNOSIS : Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 9 (*l2*, *b1* and *b2* missing); poroidotaxy : 3; reticulate pattern; genital organotaxy : Ad (0,?-4 or 5-4), T (3-4), D (1-2); epimeral formula : (3-1-4-2); coxal organ. Legs : I (8-3-2-2-0) II (6-1-1-2-0) III (5-1-0-1-1) IV (5-1-0-1-0) in the adult, trito- and deutonymphs; eupathidia on tarsus I : *ft''*, (*tc*), (*p*); solenidiotaxy : 2; femur IV entire. Palp : (6?-1-2) + ω, with a double eupathidium at the tip of the tarsus.

— OTHER SPECIES : none.

— TYPE-SPECIES : *Lorryia boycei* BAKER 1968.

Orthotydeus n. gen.

— DESCRIPTION : Marshall (1970), Schruft (1972).

— SYNONYM : *Lorryia* (MARSHALL 1970), *Tydeus* (SCHRUFT 1972).

— SPECIES STUDIED : *O. lindquisti* (MARSHALL 1970) : 1 ♂ from Chalk River Ontario, Pine litter, coll. V. G. Marshall ; *O. goetzi* (SCHRUFT 1972) : several individuals (larva, nymphs, adults) without specific label (from the Schruft's collection) ; prelarva, larva, nymphs and adults from grape, Tessino, Switzerland, coll. M. Bailod ; *O. munsteri* (MEYER & RYKE 1959), adults from St. Lucia (South Africa), coll. M. K. P. Meyer.

— DIAGNOSIS : Prodorsum : recurved ; two eyes. Opisthosoma : dorsal chaetotaxy : 10 (*l2* and *h1* missing) ; poroidotaxy : 3 ; genital organotaxy : Ad (0,4-6-4), T (4-4), D (2-2) or (1-2), P (0-1) or (0-0) ; epimeral formulae : Ad, T & D (3-1-4-2), P (3-1-2-0), L (3-1-2) ; coxal organ. Legs : chaetotaxy : I (8-4-3-3-1) II (6-2-2-2-0) III (5-2-1-1-1) IV (5-2-1-1-0) in the adult, trito- and deutonymphs ; protonymph with no *tr* I and with only five tarsal setae on the fourth leg ; larva : I (8-4-3-3-0) II (6-2-2-2-0) III (5-2-1-1-0) ; eupathidia on tarsus I : *ft''* N2, (*tc*) N1, (*p*) ; simple anabasis with (*tc*) vestigial in the larva (fig. 3B in part III) ; solenidotaxy : 2 ; femur IV undivided. Palp : (6-2-2) + ω , with a double eupathidium at the end of the tarsus.

— OTHER SPECIES : none.

— TYPE-SPECIES : *Tydeus goetzi* SCHRUFT 1972.

Parapronematus BAKER 1965

— DESCRIPTION : Baker (1965).

— SPECIES STUDIED : *P. acaciae* BAKER 1965 : 1 ♀ holotype (Zaire) ; *P. geminus* MEYER and RODRIGUES 1966 : 2 specimens from South-Africa sent by Meyer (slide n° AcY 70/533 and AcY 467/273).

— DIAGNOSIS : Prodorsum : procurved ; (*p2*) undersized or missing. Opisthosoma : dorsal chaetotaxy : 9 (*l2*, *h1*, *ps* missing) ; poroidotaxy : 4? ; genital organotaxy : (0-0-3) ; only one pair of genital acetabula ; epimeral formula : (3-1-4-2). Legs : no apotele I ; chaetotaxy : I (8-3-2-3-1) II (6-2-2-3-0) III (5 or 6-2-2-2-1) IV (5 or 6-2-1-1-0) ; eupathidia on tarsus I : *ft'*, (*tc*), (*p*) and on tarsus II : *p'* ; solenidotaxy : 3 ; femur IV entire. Palp : (5-1-2) with a double eupathidium at the tip of the tarsus.

— OTHER SPECIES : *P. citri* SALVIEJO 1969.

— TYPE-SPECIES : *P. acaciae* BAKER 1965.

Paratriophtydeus BAKER 1965

— DESCRIPTION : Baker (1965).

— SYNONYM : *Tydeus* (BAKER 1943).

— SPECIES STUDIED : *P. protydeus* : ♀ holotype (Mexico) ; *P. plummeri* : ♂ holotype (Mexico) ; *Paratriophtydeus* sp. : ♀ and ♂ labelled « Anaktaouk Pass, Alaska VI - 12 - 68, ex clump of *Claytonia* » ; *Paratriophtydeus* sp. : 5 ♀ labelled « 14 - X - 68 Ex pine duff, Maynooth Ont. Hoyer's 1 - XI - 68 Coll J. Martin » ; *Paratriophtydeus coineaui* n. sp. : ♀, ♂, trito- and deutonymphs.

— DIAGNOSIS : Prodorsum : procurved. Opisthosoma : dorsal chaetotaxy : 11 (*l2* missing) ; poroidotaxy : 4 ; genital organotaxy : Ad (0,4 or 5-3,4-4), T (1-4), D (0-2) ; epimeral formula : Ad & T (3-1-4-3), D (3-1-4-2). Legs : chaetotaxy : I (12-5-4-6-1) II (8-2-4-4-1) III (7-2-2-3-1) IV (7-2-1-2-0) in the adults and tritonymphs ; deutonymph similar to the adults but with two setae less on each tarsus [(*it*) on tarsus I and (*tc*) on the other] ; eupathidia on tarsus I : *ft''*, (*tc*), (*p*) ; solenidotaxy : 3 ; femur IV entire. Palp : (5 or 6-2-2) + ω with a triple eupathidium at the tip of the tarsus. Other features : sensilla simple or clublike.

— DESCRIPTION of *Paratriophtydeus coineaui* n. sp. (figures 10, 11) (8). Organotaxy as described above ; 5 pairs of eugenitals in males ; vertition of genitals in female : with 4 genitals on a genital lip (frequency = 0,175) ; males with four pairs of genitals. Seta *ba* is vestigial. Material : 20 ♀, 7 ♂, 2 tritonymphs, 1 deutonymph labelled « Winnipeg, Man. Ex Wheat. Coll. R.N. Sinha Oct. 20 1969 », some slides are dated « Nov. 13 1968 ».

— OTHER SPECIES : none.

— TYPE-SPECIES : *Tydeus protydeus* BAKER 1943.

(8) The species is named for Dr. Y. Coineau who welcomed me into his laboratory at Banyuls-sur-Mer (France).

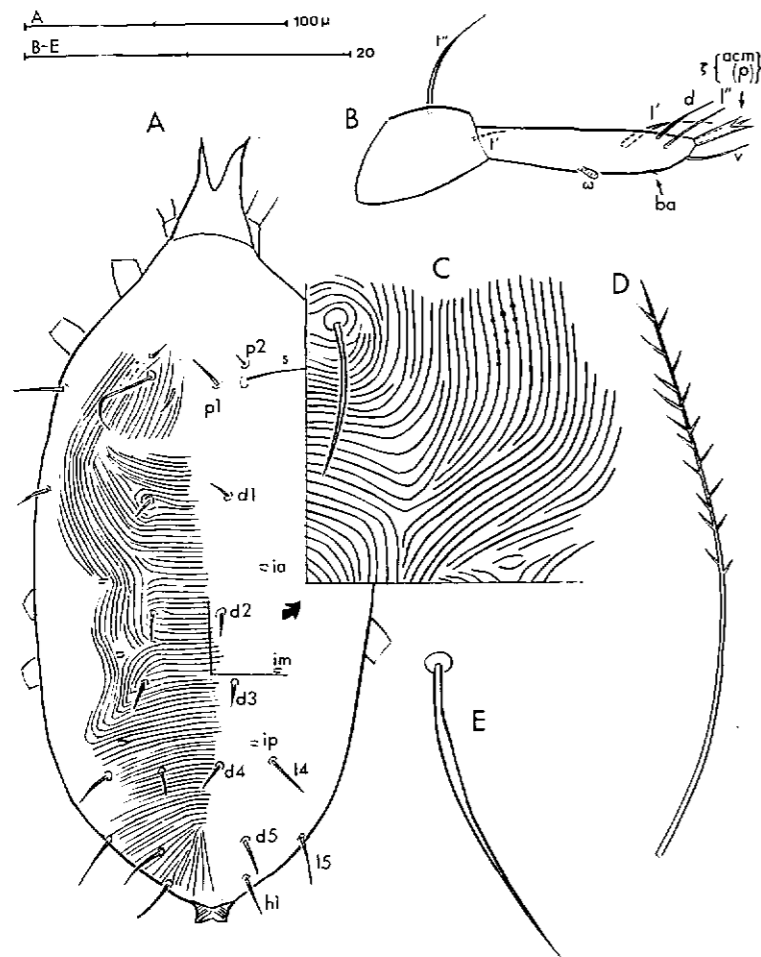


FIG. 10. — *Paratriophtydeus coineau*. Dorsal habitus (A);
palp in antiaxial view (B); detail of opisthosoma (C);
sensillum (D); seta 15 (E).

(à suivre)