

femelles : 11 exemplaires de la même localité ; 4 de Nuruwa Eliya, 15 février 1970 ; 2 de Sabaragamuwa, 16 et 20 janvier 1970 ; 1 de Hatton, 9 février 1970 ; 1 de Horton Plains, 15 février 1970. Dépôt des types : cfr DESSART, 1975, p. 151 (Genève et Bruxelles).

Références : ASHMEAD, W., 1893. — (A) Monograph of the North American Proctotrypidae. *Bull. U.S. nat. Mus.*, 45 : 1-472. DESSART, P., 1975. — Contribution à la connaissance des Ceraphronidae de Ceylan (Hymenoptera Ceraphronoidea), *Rev. suisse Zool.*, 82/1 : 101-156.

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

### IV. GENERIC DESCRIPTIONS, KEYS AND CONCLUSIONS

(continued)\*

by Henri M. ANDRE\*\*

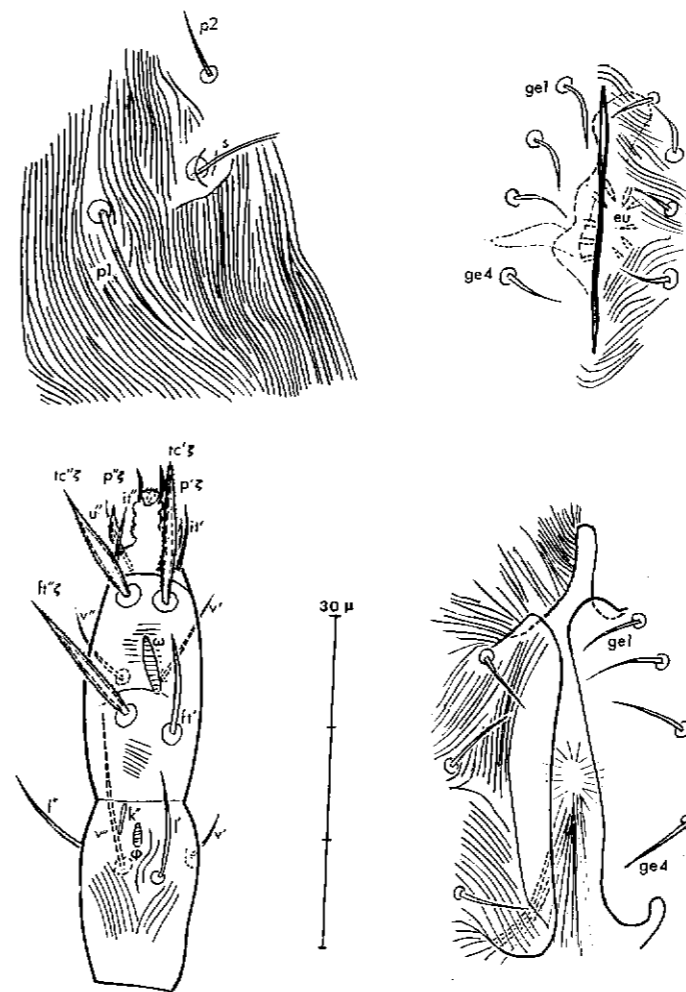


FIG. 11. — *Paratriophtydeus coineau*. Detail of prodorsum (A); tarsus and tibia I in dorsal view (B); genital area of male (C) and female (D).

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**Paratydaeolus** n. gen.

— DESCRIPTION : Wood (1965).

— SYNONYM : *Coccotydeus* (WOOD 1965).

— SPECIES STUDIED : *P. loadmani* (WOOD 1965) : ♀ holotype (Great Britain); *P. lukoschusi* n. sp. : ♀, trito and deutonymphs, larva; *Paratydaeolus* sp. : 7 adults, 2 trito- and 1 protonymphs labelled « Ex Sexsmith, Alberta, Hoyer's 21 - X - 68, Coll. R.N. Sinha ».

— DIAGNOSIS : Prodorsum : procurved; no eyes; the sensilla clublike. Opisthosoma : dorsal chaetotaxy : 11 (12 missing); poroidotaxy : 4; genital organotaxy : (0,?-3-4), T(1-4), D(0-2), P(0-1); epimeral formula : Ad & T(3-1-4-3) or (3-1-4-2), D(3-1-4-2), P(3-1-3-0) L(3-1-2). Legs : I(12-5-4-6-1) II(8-2-4-3-1) III(7-2-1-3-1) IV(7-2-1-2-0) in adults and tritonymphs; tarsus I with only 10 setae and tarsus IV with 5 in deutonymphs; protonymph : I(10-5-4-6-0) II(6-2-4-3-0) III(5-2-1-3-1) IV(5-0-0-0-0); larva : I(8?-5-4-6-0) II(6-2-4-3-0) III(5-2-1-3-1) with double anabasis; eupathidia on tarsus I : *ft''* N2, (*tc* N1), (*p*); solenidiotaxy : 3; femur IV entire. Palp : (5-2-2) + ω with a triple eupathidium at the tip of the palp.

— DESCRIPTION of *P. lukoschusi* (9). Organotaxy is defined in the generic description. Figures 1B (in part II) & 12 describe the species. Material : 5 ♀, 2 tritonymphs, 5 deutonymphs and 1 larva labelled : « Host *Parus caeruleus*; Loc. Nijmegen; Date 7 - VI - 73; Lukoschus Leg. »

— OTHER SPECIES : *P. expressus* (KUZNETZOV 1973) and *P. lanceoclaviger* (LIVSHITZ 1973) (they differ from *P. lukoschusi* by the length and the shape of setae and the shape of sensillum).

— TYPE-SPECIES : *P. lukoschusi* n. sp.

**Pausia** KUZNETZOV and LIVSHITZ 1972

— DESCRIPTION : Kuznetzov und Livshitz (1972).

— SPECIES STUDIED : *P. magdaleneae* (BAKER and DELFINADO 1976) : 1 ♀ holotype (Greece/Boston).

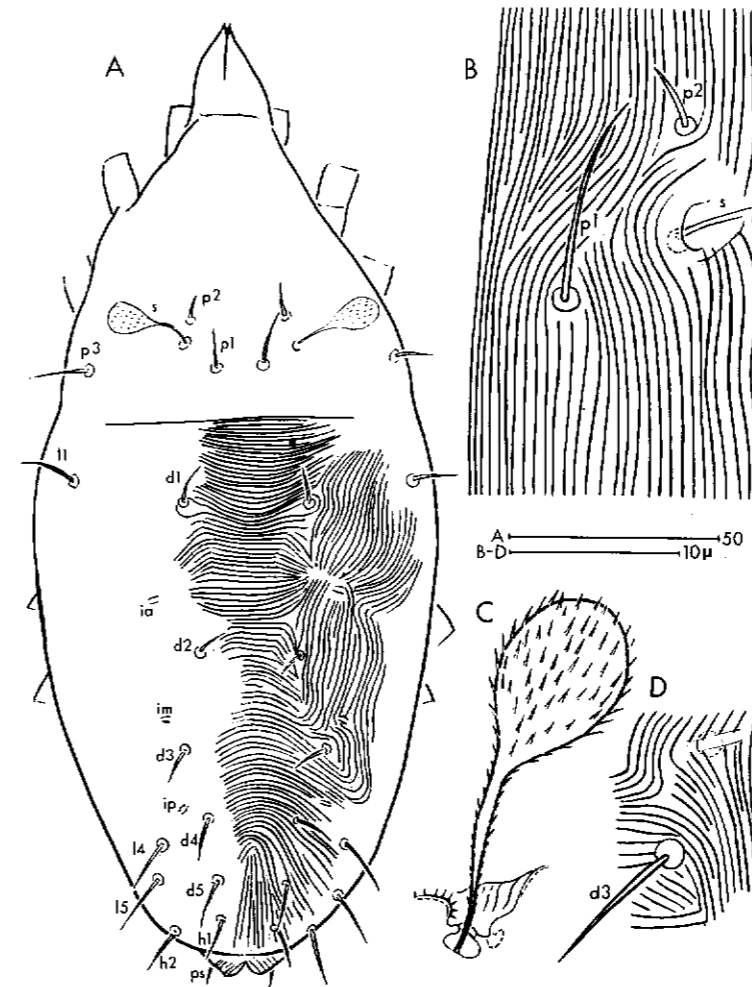


FIG. 12. — *Paratydaeolus lukoschusi*. Dorsal habitus (A); detail of prodorsum (B); sensillum and bothridia (C); detail of opisthosoma (D).

(9) This species is named for Dr. F. Lukoschus who kindly sent me his collection of Tydeidae.

— DIAGNOSIS : Prodorsum : procurved. Opisthosoma : dorsal chaetotaxy : 11 (*l2* missing); poroidotaxy : 4; genital organotaxy : (0,?-0-4); epimeral formula : (3-1-4-2). Legs : no apotele I; chaetotaxy : I (8-4-3-3-1) II (6-2-3-3-1) III (6-2-2-2-1) IV (5-2-1-(1-1)-0); eupathidia on tarsus I : *ft''*, (*tc*), (*p*); solenidiotaxy : 3; femur IV divided. Palp : (5-1-2) +  $\omega$  with a double eupathidium at the end of the tarsus (figure 3 F in part II).

— OTHER SPECIES : *Pausia taurica* KUZNETZOV 1972.

— TYPE-SPECIES : *P. taurica* KUZNETZOV 1972.

#### **Perafrotydeus** n. gen.

— SYNONYM : *Tydeus* (*Afrotydeus*) BAKER (1970 in part).

— SPECIES STUDIED : *P. meyerae* BAKER 1970 (monotypic) : 1 tritonymph in pupation, holotype (Kenya).

— DIAGNOSIS : Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 10 (*l2* and *h1* missing); poroidotaxy : 3; genital organotaxy : Ad (0-4-4), T (2-4); 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 adult; tritonymph similar but with no *tr I* and with nude femur III; eupathidia on tarsus I : (*tc*) and (*p*); solenidiotaxy : 1; femur IV undivided. Palp : (6-2-2) +  $\omega$  with a double eupathidium at the tip of the tarsus. Other features : as in *Afrotydeus*, paraproctal suckers well developed and *l'* on tibia I slender and with a small root.

— TYPE-SPECIES : *Tydeus meyerae* BAKER 1970.

#### **Prelorryia** n. gen.

— DESCRIPTION : Baker (1968 b).

— SYNONYM : *Lorryia* (BAKER 1968 b).

— SPECIES STUDIED : *P. indionensis* (BAKER 1968) (monotypic) : 1 ♀ holotype (Java).

— DIAGNOSIS : Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 9 (*l2*, *h1* and *h2* missing); poroidotaxy : 3; genital organotaxy (0-?,6-4); epimeral formula : Ad (3-1-4-3); coxal organ. Legs : chaetotaxy : I (8-4-2-3-1) II (6-2-0-3-1) III (5-2-0-1-1) IV (5-2-0-0-0) in the adult; larva : I (8-

4-2-3-0) II (6-2-0-3-0) III (5-2-0-1-0); eupathidia on tarsus I : *ft''*, (*tc*), (*p*) in the adult; double anabasis with (*tc*) vestigial in the larva; solenidiotaxy : 2; femur IV entire. Palp : (6-2-2) +  $\omega$ , with a triple eupathidium at the end of the tarsus.

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

#### **Pretriophydeus** n. gen.

— DESCRIPTION : Strandtmann (1967, 1970).

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

— SPECIES STUDIED : *P. tilbrooki* (STRANDTMANN 1967) (typical form) : 1 tritonymph paratype (Antarctica), 1 tritonymph labelled « Bishop Museum, Antarctica, Norsel pt. — Anvers I — ex Alaskozetes — exoskeleton cender rock — 9-I-1966 — J. Strong », 1 ♀ labelled « Bishop Museum — Antarctica — Norsel Pt. — Anvers I — lichen incrued Moss — 3-XI-65 — J. Strong ».

— DIAGNOSIS : Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 11 setae (*l2* missing); poroidotaxy : 4; genital organotaxy : Ad (2,6-6-4), T (4-4); epimeral formula : (3-1-3-3). Legs : chaetotaxy : I (12-5-3-5-1) II (6-3-2-4-1) III (5-2-2-3-1) IV (5-2-2-(1-2)-0); eupathidia on tarsus I : (*ft*), (*tc*), (*it*), (*p*), on tarsus II : *ft''* and *p''*, and on tarsi III and IV : *ft*; solenidiotaxy : 2; femur IV divided. Palp : (6-2-2) +  $\omega$  with a triple eupathidium on the tarsus.

— OTHER SPECIES : (The varietal form of « *Tydeus tilbrooki* » should belong to the genus *Apotriophydeus*).

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

#### **Pretydeus** n. gen.

— DESCRIPTION : Baker (1968b, d), Marshall (1970).

— SYNONYMS : *Retetydeus* (BAKER 1944c, 1947); *Lorryia* (BAKER 1944b, 1947, 1965, 1968b, 1970 in part); *Paralorryia* (BAKER 1968d in part).

— SPECIES STUDIED : *P. hondurensis* (BAKER 1968) : ♀ holotype (Honduras); *P. doddsi* (BAKER 1944) : ♀ holotype, ♂ and tritonymph paratypes (Mexico); *P. lwiroensis* (BAKER 1965) : 1 ♀ holotype and 2 tritonymphs (Zaire); *P. kevani*

(MARSHALL 1970): 1 ♀ holotype and paratypes (deutonymph, tritonymph, larva and prelarva) (Man. Canada); *P. curiosa* (UECKERMANN and MEYER 1979): 3 ♀ paratypes (South Africa).

— DIAGNOSIS: Prodorsum: recurved. Opisthosoma: dorsal chaetotaxy: 10 (*l2* and *b1* missing); poroidotaxy: 3; genital organotaxy: Ad (0,4-6-4), T (4-4), D (2-4); epimeral formula: Ad & T (3-1-4-3), D (3-1-4-2), L (3-1-2); coxal organ. Legs: chaetotaxy: I (8-4-2-3-1) II (6-2-0-3-1) III (5-2-0-1-1) IV (5-2-0-0-0) in the adult and tritonymph; deutonymph similar but without *trI* and *trII*; larva: I (8-4-?-?-?) II (6-2-0-?-?) III (5-2-?-?-?); eupathidia on tarsus I: *ft''* (not always), (*tc*), (*p*); simple anabasis in the larval stage with (*tc*) vestigials; solenidiotaxy: 3 (♀ I partly recessed); femur IV entire. Palp: (6-2-2) + ω with a triple eupathidium at the tip of the tarsus. Other feature: empodial claws well developed.

— REMARK: The genital chaetotaxy of *P. lwioensis* is variable in tritonymphs; four different formulae were observed on two specimens: (3-4) (2-4?) (4-4) and (4-3).

— OTHER SPECIES: Maybe *P. panitae* (BAKER 1968), *P. marcandrei* (BAKER 1968)... [i.e. the group «*lwioensis*» of Baker (1968b)].

— TYPE-SPECIES: *Lorryia kevani* MARSHALL 1970.

#### *Primotydeus* n. gen.

— SPECIES STUDIED: *Primotydeus strandtmanni* n. sp. (monotypic) ♀ and ♂, tritonymph and deutonymph.

— DIAGNOSIS: Prodorsum: procurved. Opisthosoma: dorsal chaetotaxy: 11 (*l2* missing); poroidotaxy: 4; genital organotaxy: Ad (0,5-2,6-4), T (2-4), D (1-2); 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 (7-2-3-3-1) IV (7-2-1-2-0) in the adult and tritonymph; deutonymph similar but with two setae less on each tarsus [(*it*) on tarsus I and (*tc*) on the other] and with no *tr II*; eupathidia on tarsus I: *ft''*, (*tc*), (*p*); solenidiotaxy: 3; femur IV entire. Palp: (6-2-2) + ω with *ba* vestigial and a triple eupathidium at the tip of the tarsus.

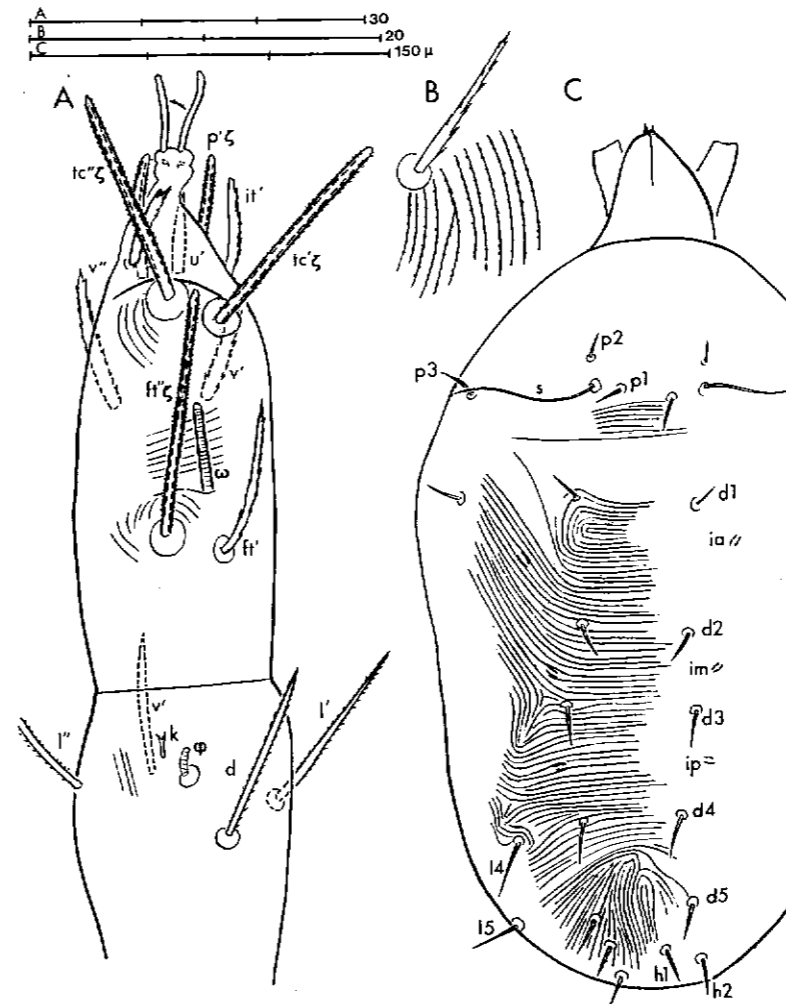


FIG. 13. — *Primotydeus strandtmanni*. Tarsus and tibia I in dorsal view (A); seta *p2* (B); dorsal habitus (C).

— DESCRIPTION of *Primotydeus strandtmanni* n. sp. (10) (figure 13). Organotaxy as described above. Material: 4 ♀, 3 ♂, 1 deuto- and 1 tritonymph labelled « Nuwak, Alaska, Snow Bunting Nest, 12-VII-67 R.W.S. ».

— TYPE-SPECIES: *P. strandtmanni* n. sp.

#### **Proctotydaeus** BERLESE 1911 *sensu* FAIN and EVANS 1966

— DESCRIPTION: Fain and Evans (1966).

— SYNONYM: *Pronematus* (BAKER and WHARTON 1952; TREAT 1961); *Pronematulus* (TREAT 1967, 1970); *Oriola* (BAKER 1968); *Oriolella* (BAKER 1969); *Neotydeolus* (FLECHTMANN and CAMARGO 1979).

— SPECIES STUDIED: *Proctotydaeus schistocercae* FAIN and EVANS 1966: ♀, ♂, trito- and deutonymphs, larva (all paratypes); *P. pyrohippeus* (TREAT 1961): two adults labelled « Ex right tympanic recess of *Acronycta dactylina* Grote ♂, at light, Tyringham, Mass., 19 July 1963, A.E. Treat leg. » and « in left tympanic recess of *Acronycta morula* G & R, 70-32 ♀, Tyringham Mass, 27 July 1970 » and a larva labelled « reared from egg found on 71-6 ♂, *Acronycta dactylina* (Grote), Tyringham Mass., 29 June to 10 July 1971 »: *P. farbae* (Baker 1968): 1 ♂ holotype; *P. therapeutikos* (FLECHTMANN and CAMARGO 1979), (figures 3C in part II and 1A, B & C in part III).

— DIAGNOSIS: Prodorsum: procurved. Opisthosoma: dorsal chaetotaxy: 11 (*l2* missing); poroidotaxy: 4; genital organotaxy: Ad (0-0-4), T (0-4), D (0-2); only one pair of genital acetabula; epimeral formula: Ad, T, D (3-1-4-2), L (3-1-2). Legs: no apotele I; 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) in the adults and tritonymphs; deutonymph similar minus *tr* I and *tr* II, *tc''* II, (*tc*) III and (*tc*) IV; larva: I (6-4-3-3-0) II (6-2-3-3-0) III (5-2-2-2-0); eupathidia on tarsus I: *ft''* N2, (*tc*), (*p*); anabasis in the larva; solenidiotaxy: 3. Palp: (4 or 5-1-2) with a double eupathidium at the tip of the tarsus. Other feature: femur IV divided or not; paraproctal suckers more

(10) This species is named for Dr. R. W. Strandtmann who kindly sent me a collection of Tydeidae for this study.

or less developed; sensilla clublike in the species described by Flechtmann and Camargo (1979).

— OTHER SPECIES: *P. rusticus* (MEYER and RODRIGUES 1965), *P. oblongus* (KUZNETZOV 1973), *P. galapagosensis* FAIN and EVANS 1965.

— REMARKS: Most of the known species of *Proctotydaeus* have been found associated with insects (gallery of bark beetle, bee-hive, phoretic on Lepidoptera or Orthoptera). *P. rusticus* (found on *Gossypium*) and *P. oblongus* (found on a Greek nut tree) are exceptions. These species are involved in special adaptations to their environment. This genus is a good example of the variations played by the evolutionary process on a chaetotactic theme.

— TYPE-SPECIES: *P. schistocercae* FAIN & EVANS 1966.

#### **Pronecupulatus** BAKER 1944

— DESCRIPTION: Baker (1944a, 1965).

— SPECIES STUDIED: *P. anabuacensis* BAKER 1944 (monotypic): 1 ♀ holotype and 1 protonymph found on the same tree but later by Baker.

— DIAGNOSIS: Prodorsum: procurved. Opisthosoma: dorsal chaetotaxy: 11 (*l2* missing); poroidotaxy: 4?; genital organotaxy: Ad (?), P (1-3-3-0). Legs: no apotele I; chaetotaxy: I (8-4-3-3-1) II (6-2-1-3-1) III (5-2-1-2-1) IV (5-2-1-2-0) in the adult; I (8-4-3-3-1) II (6-2-1-3-0) III (5-2-1-2-0) IV (5-0-0-0-0) in the protonymph; eupathidia on tarsus I: *ft'* (not in the protonymph), (*tc*), (*p*); solenidiotaxy: 3; femur IV entire. Palp: ? (in too bad a state).

— TYPE-SPECIES: *P. anabuacensis* BAKER 1944.

#### **Pronematulus** BAKER 1965

— DESCRIPTION: Baker (1965).

— SPECIES STUDIED: *P. vandus* BAKER 1965 (monotypic): ♀ holotype (Florida).

— DIAGNOSIS: Prodorsum: recurved. Opisthosoma: dorsal chaetotaxy: 11 (*l2* missing); poroidotaxy: 4; genital organotaxy: (0-0-4); epimeral formula: (3-1-4-2). Legs:

no apotele I; chaetotaxy: I (8-4-3-3-1) II (7-2-2-3-1) III (6-2-2-2-1) IV (6-2-1-2-0); eupathidia on tarsus I: *ft''*, (*tc*), (*p*); solenidiotaxy: 3; femur IV seemingly divided. Palp: (5-2-2) with a double eupathidium at the tip of the tarsus.

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

**Pronematus** CANESTRINI 1886 *sensu* BAKER 1965

— DESCRIPTION: Baker (1965), Baker (1968).

— SPECIES STUDIED: *P. ubiquitous* (McGREGOR 1932): 2 specimens from the collection of Dr. M.K.P. Meyer (South Africa, found on plants) (slides AcY 76/351 and AcY 77/473) and *P. rykei* MEYER and RODRIGUES 1965: three specimens sent by Dr. Meyer from South Africa (slides AcY 74/456, AcY 74/260 and AcY 74/224).

— DIAGNOSIS: Prodorsum: procurved. Opisthosoma: dorsal chaetotaxy: 10 (*l2* and *h1* missing); poroidotaxy: 4; genital organotaxy: (0-0-4); epimeral formula: (3-1-4-2). Legs: no apotele I; chaetotaxy: I (8-4-3-3-0) II (6-2-3-3-0) III (5-2-2-2-1) IV (5-2-1-2-0); eupathidia on tarsus I: *ft''*, (*tc*), (*p*); solenidiotaxy: 3; femur IV undivided. Palp: (5-1-2).

— OTHER SPECIES: undetermined.

**Pseudotriophyteus** n. gen.

— SPECIES STUDIED: *Pseudotriophyteus vegei* n. sp. (monotypic) ♂ and ♀, nymphs and larva.

— DIAGNOSIS: Prodorsum: recurved; three eyes; no bothridia. Opisthosoma: dorsal chaetotaxy: 11 setae (*l2* missing); poroidotaxy: 4; genital organotaxy: Ad (2,6-6-5), 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), L (3-1-2). Legs: chaetotaxy: I (10-6-4-5-1) II (6-3-2-4-1) III (5-2-2-2-1) IV (5-2-3-(1-1)-0) in adult, trito- & deutonymphs; protonymph: I (10-5-4-4-0) II (6-2-2-4-0) III (5-2-2-2-1) IV (5-0-0-0-0); larva: I (10-5-4-4-0) II (6-2-2-4-0) III (5-2-2-2-0); eupathidia on tarsus I: (*tc*) N1 and (*p*), on tarsus II: *p''*; double anabasis; solenidiotaxy: 4; femur IV divided. Palp: (6-2-2) +  $\omega$ , with a triple eupathidium on the tarsus.

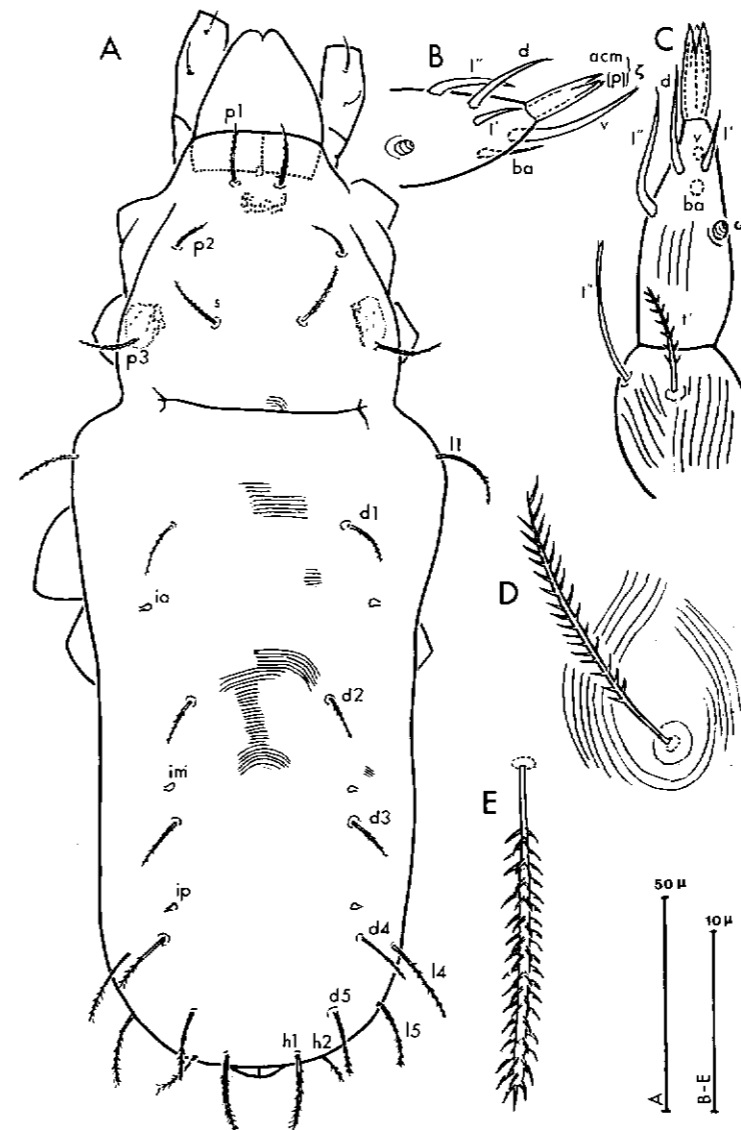


FIG. 14. — *Pseudotriophyteus vegei*. Dorsal habitus (A); tip of the palptarsus in dorso-paraxial view (B); palp in dorsal view (C); sensillum (D); seta *h1* (E).

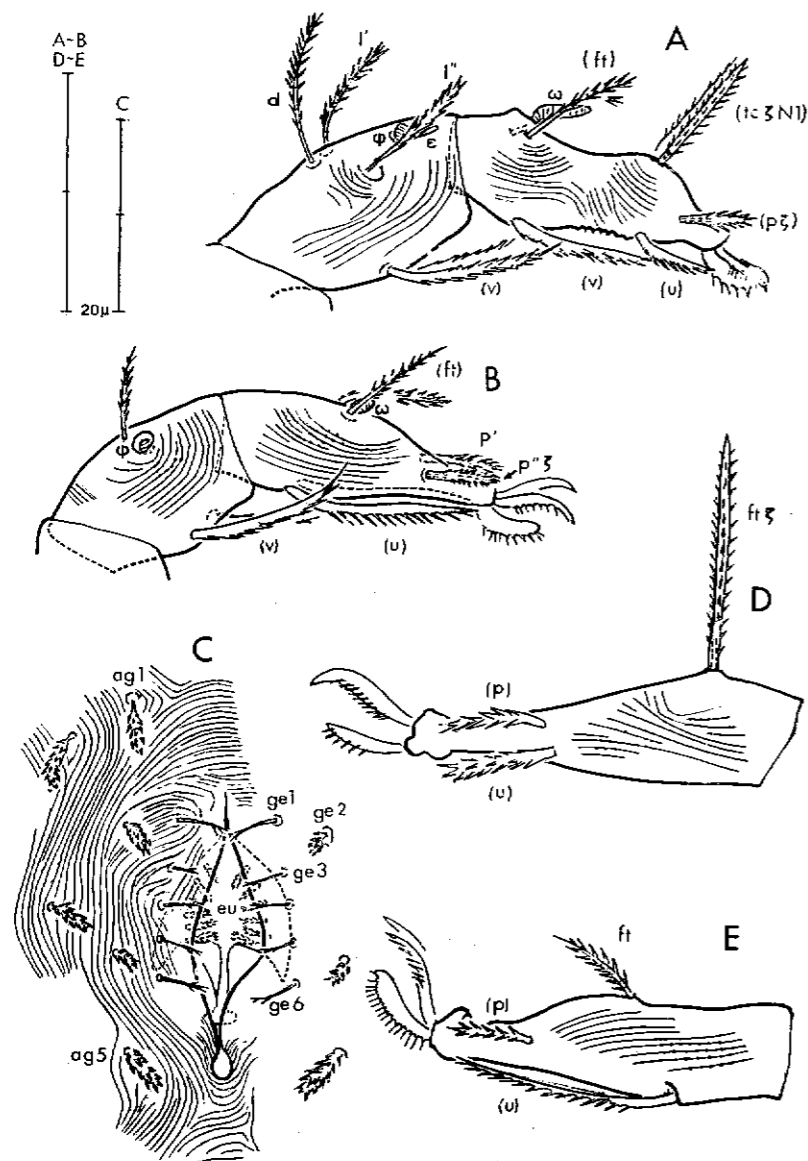


FIG. 15. — *Pseudotriophtydeus vegei*. Tarsi I (A) and II (B) in antiaxial view; genital area of male (C); tarsus IV in antiaxial view (E).  
*Metatriophtydeus lebruni*: tarsus IV in antiaxial view (D).

— DESCRIPTION of *P. vegei* n. sp (11). Organotaxy is defined in the generic description. Figures 14 and 15 describe the species. Material: several adults and tritonymphs, 1 deutonymph, 1 protonymph and 1 larva collected in Belgium (Ruelle and St Mard) on bark of different tree species.

— REMARK: *P. vegei* was collected together with *Metatriophtydeus lebruni* and both species were initially confused. The habitus of tarsi III and IV permit to distinguish them (compare figures 15 D and E) even at low magnification.

— TYPE-SPECIES: *P. vegei* n. sp.

#### *Pseudotydeus* BAKER and DELFINADO 1974

— DESCRIPTION: Baker and Delfinado (1974).

— SPECIES STUDIED: *P. perplexus* BAKER and DELFINADO 1974 (monotypic): 1 tritonymph paratype (Ohio).

— DIAGNOSIS: Prodorsum: recurved. Opisthosoma: dorsal chaetotaxy: 11 (12 missing); poroidotaxy: 4; genital organotaxy: T(4-4); epimeral formula: (3-1-4-3). Legs: chaetotaxy: I(12-6-4-6-1) II(8-2-4-4-1) III(7-2-3-3-1) IV(7-2-1-2-0); eupathidia on tarsus I: *ft'*, (*tc*), (*p*) and on tibia I: *l''*; solenidotaxy: 3 (♀ I recessed); femur IV entire. Palp: (5-1-1) + ω with a triple eupathidium at the tip of the tarsus. Other feature: there are two clusters, one (♀ I-*ft'*) on tarsus I and (*k''-l''*) on tibia I; the species has a long tail like caudal extension overhanging an inward fold.

— REMARK: *Pseudotydeus* was considered the type genus of a new subfamily by Baker and Delfinado. This opinion is not followed here. It must be pointed out that the clusters observed in this species exactly coincide with a description of a member of the tydeoid family Ereyneidae by Grandjean (1939) (figure 16).

#### *Teletriophtydeus* n. gen.

— DESCRIPTION: Strandtmann (1967).

— SYNONYM: *Tydeus* (STRANDTMANN 1967), *Paratriophtydeus* (BAKER 1970).

(11) The species is named for Dr. P.-H. Vercammen-Grandjean (VG) who very kindly welcomed and guided me and my family in San Francisco.

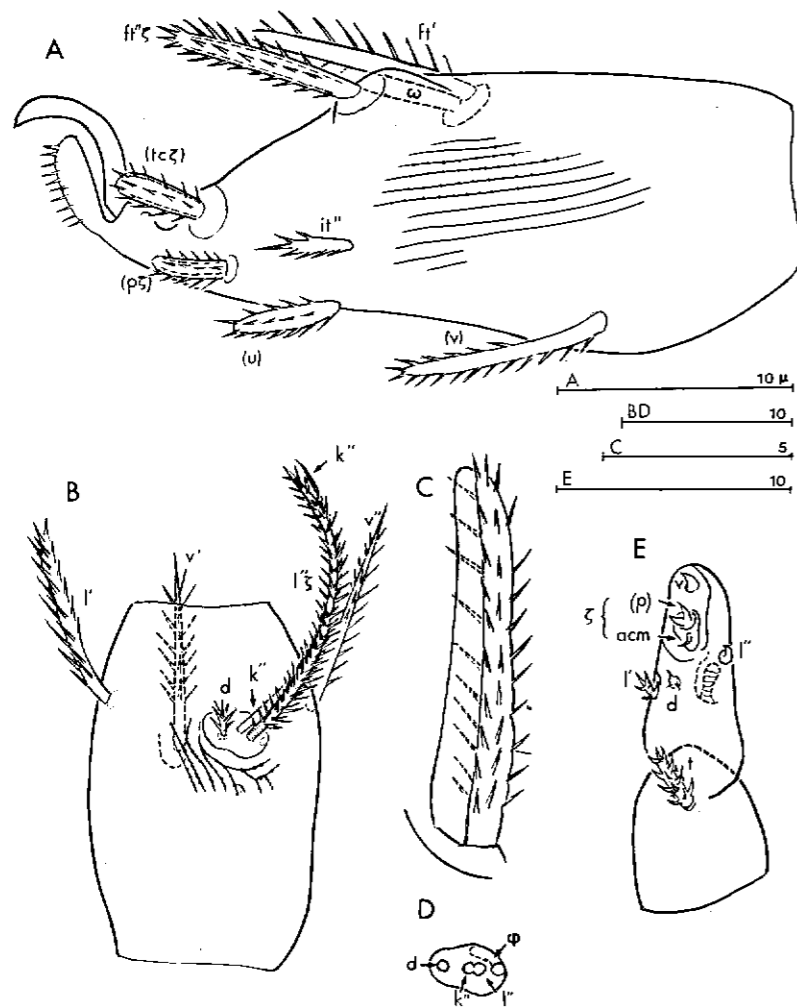


FIG. 16. — *Pseudotydeus perplexus*. Tarsus I in antiaxial view (A); tibia I in dorsal view (B); cluster ( $\omega$ ) I-ft' in antiaxial view (C); location of  $\phi$  I, with setae not drawn (D); palp in dorsal view (E).

— SPECIES STUDIED: *T. wadei* (STRANDTMANN 1967) (monotypic): 1 tritonymph and 1 ♂ paratypes (Antarctica).  
 — DIAGNOSIS: Prodorsum: recurved, no bothridia. Opisthosoma: dorsal chaetotaxy: 11 (*l2* missing); poroidotaxy: 4; genital organotaxy: Ad (4,6-6-5), T (4-4); epimeral formula: (3-1-3-3). Legs: chaetotaxy: I (10-6-3-4-0) II (6-3-1-4-0) III (5-2-1-3-1) IV (5-2-1-2-0); eupathidia on tarsus I: *ft'*, (*tc*), (*it*N3), (*p*); sclenidiotaxy: 2; femur IV divided. Palp: (6-2-2) +  $\omega$  with a triple eupathidium at the tip of the tarsus.  
 — TYPE-SPECIES: *Tydeus wadei* STRANDTMANN 1967.

#### *Tydaeolus* BERLESE 1910 *sensu* BAKER 1965

— DESCRIPTION: Baker (1965).  
 — SYNONYMS: *Tydeus* (BERLESE 1910), *Coccotydeus* (THOR 1931, 1933; BAKER and WHARTON 1952).  
 — SPECIES STUDIED: *Tydaeolus tenuiclaviger* (THOR 1931) *sensu* BAKER 1965; *Tydaeolus* sp. (from different fungi (*Penicillium*, *Trichoderma*, *Absidia*), Winnipeg, Man. Canada, coll. H.A.H. Wallace or R.N. Sinha); *Tydaeolus* sp.: labelled « *Parus caeruleus*; Loc. Nijmegen, Date 7-VI-73, Lukoschus Leg. »; *Tydaeolus* sp.: adults, deuto- and protonymphs collected in Belgium (Ruette and St Mard) on bark of different tree species.  
 — DIAGNOSIS: Prodorsum: procurved; no eyes; club-like sensillum. Opisthosoma: dorsal chaetotaxy: 11 (*l2* missing); poroidotaxy: 4; genital organotaxy: Ad (0,?-2-4), D (0-2), P (0-0?); epimeral formula: Ad (3-1-4-3), D (3-1-3-2), P (3-1-2-0). Legs: I (11-5-4-6-1) II (8-2-4-4-1) III (7-2-2-3-1) IV (7-2-1-2-0) in the adults; deutonymphs with two setae less on each tarsus, (*it*) on tarsus I and (*tc*) on the other; protonymph: I (9-5-4-6-0) II (6-2-4-4-0) III (5-2-2-3-1) IV (5-0-0-0-0); larva: I (7?-4-4-6-0) II (6-2-4-4-0) III (5-2-2-3-0) with double anabasis; eupathidia on tarsus I: *ft''* N2, (*tc* N1), (*p*); solenidiotaxy: 3; femur IV entire. Palp: apparently only three setae on the tarsus, among which is the triple eupathidium, and the solenidion. However, KUZNETZOV and LIVSHITZ (1972) give the formula (5(1)-2-2).  
 — OTHER SPECIES: *Tydaeolus frequens* (GRANDJEAN 1938), *Tydaeolus sphaeroclaviger* KUZNETZOV 1972.



**Tydeus** KOCH 1835 n. comb.

— SYNONYMS : *Tydeus* KOCH 1835 *sensu* BAKER 1968 (in part); *Lorryia* OUDEMANS 1925 *sensu* BAKER 1968 (in part), *Paralorryia* BAKER 1965 (in part), *Tydulosus* BAKER 1965, *Venilia* KUZNETZOV 1979.

— SPECIES STUDIED : *T. raphignathoides* (BERLESE 1910) *sensu* BAKER 1968 : labelled « from Apple, Bramley, Richhill, Co. Down, Ireland, 3-2-61, collector M.J. Mac-Quillan, Tritonymph »; *T. reticulata* Oudemans 1928 : « from rt. tympanic recess of ? *Feltia* sp. killed by spider. Tyringham Mass, 9 october 1954, A.E. Treat, Det. E.W. Baker »; *T. bedfordiensis* (EVANS 1952) : 1 ♀ paratype (Great-Britain) [in addition, numerous specimens from Dr. Marshall's collection (Canada) and mine (Belgium)]; *T. turrialbensis* (BAKER 1968) : 1 ♀ holotype (Costa-Rica), the three nymphs and the larval paratype; *T. tridactylus* (WEISS-FOGH 1948) : 2 ♀ and 1 ♂, deutonymphs (holotype and paratypes) (Denmark); three other species from Belgium which will be described elsewhere.

— 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 (8-4-3-3-1) II (6-2-2-3-0) III (5-2-1-2-1) IV (5-2-1-1-0) in the adult, tritonymph and deutonymphs; protonymph with no *tr* I, sometimes with no *tr* III, and with only five tarsal setae on the fourth leg; larva : I (8-4-3-3-0) II (6-2-2-3-0) III (5-2-1-2-0); eupathidia on tarsus I : *ft''* N2, (*tc* N1), (*p*); simple anabasis with (*tc*) vestigials in the larva; solenidiotaxy : 2; femur IV undivided. Palp : (6-2-2) + ω with a double eupathidium at the tip of the tarsus. Other feature : the integument may be merely striated, partly or entirely reticulate or exhibit a « basketweave » pattern. A third unpaired empodial claw may be inconspicuous or obvious.

— REMARKS : A number of generic entities have been synonymized here with *Tydeus* on the basis of chaetotaxy and ontogeny. However, the expanded genus may not necessarily be homogenous, since only a few ontogenies are known. For instance, *T. tridactylus* is classified here in *Tydeus* but

the genital formula of its tritonymph is (2-4) rather than (4-4).

— OTHER SPECIES : According to the literature, about 200 species should belong to the genus *Tydeus*. However, further information must be gathered in order to clarify the status of many of these. For instance, Grandjean's (1938c) description of the leg chaetotaxy of *T. viviparus* (Thor) coincides with that described above for the genus except that the larva exhibits a double anabasis. This may constitute a specific difference.

**Tydides** KUZNETZOV 1975 (monotypic)

— DESCRIPTION : Kuznetsov (1975).

— DIAGNOSIS : (according to KUZNETZOV 1975) Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 10 (*l2* and *h1* missing); poroidotaxy : ?; genital organotaxy : (?-3-4); epimeral formula : (3-1-4-2); coxal organ ?. Legs : chaetotaxy : I (8-4-3-3-0) 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*); solenidiotaxy : 2; femur IV entire. Palp : (5-2-1) + ω, which a double eupathidium at the tip of the tarsus.

— REMARK : *Tydides ulter* KUZNETZOV 1975 was not available for this study.

— TYPE-SPECIES : *T. ulter* KUZNETZOV 1975.

**Tyndareus** LIVSHITZ and KUZNETZOV 1972

— DESCRIPTION : Livshitz and Kuznetsov (1972).

— DIAGNOSIS : (according to LIVSHITZ and KUZNETZOV 1972) Prodorsum : procurved. Opisthosoma : dorsal chaetotaxy : 11 (*l2* missing); poroidotaxy : 4?; genital organotaxy : (?-6-4); epimeral formula : (3-1-4-3). Legs : chaetotaxy : I (10 or 12-5-4-5-1) II (8-2-4-4-1) III (7-2-2-3-1) IV (7-2-1 or 0-2-0); (*it*) is missing or not on tarsus I; eupathidia on tarsus I : *ft''*, (*tc*), (*p*); solenidiotaxy : 3; femur IV entire. Palp : (5-2-2) + ω.

— REMARK : The two species, *Tyndareus eloquens* LIVSHITZ 1972 and *Tyndareus rostratus* KUZNETZOV 1972, were not available for this study.

— TYPE-SPECIES : *T. eloquens* LIVSHITZ 1972.

**Generic Unit G1** (Tydaeolinae)

Only 1 ♀ labelled « Nawak Alaska, 12-VII-67, R.W.S, Snow bunting nest ».

— DIAGNOSIS : Prodorsum : procurved. Opisthosoma : dorsal chaetotaxy : 11 (*l2* missing); poroidotaxy : ? ; genital organotaxy : (0-2-3); 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); five eupathidia on tarsus I : *ft''*, (*tc*), (*p*); solenidiotaxy : 3 ; femur IV entire. Palp : (6-2-2) + ω, with a triple eupathidium at the tip of the tarsus.

**Generic Unit M1** (Triophtydeinae)

The following generic unit diagnosis is based on two specimens (1 ♀ and 1 ♂). Kindly sent by Dr. R.L. Smiley, U.S. National Museum, labelled « Inglis Motneka Kiwifruit leaves, 20-11-75 and 24-11-75 ».

— DIAGNOSIS : Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 11 (*l2* missing); poroidotaxy : 4 ; genital organotaxy : (2,6-6-5); epimeral formula : (3-1-3-3). 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); eupathidia on tarsus I : (*ft*), (*tc*), (*it*) and (*p*), on tibia I : *l''* and on tarsus II : *ft''* and *p''*; solenidiotaxy : 2 ; femur IV divided. Palp : (6-2-2) + ω, with a triple eupathidium at the tip of the tarsus.

**Generic Unit TY1** (Tydeinae)

4 ♀ labelled « on *Berlinia* sp., Stanleyville, Belg Congo, April 18. 1955, E.W. Baker coll., n° 33 ».

— DIAGNOSIS : Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 9 (*l2*, *b1* and *b2* missing); poroidotaxy : 3 ; genital organotaxy : (0-6-4); epimeral formula : (3-1-4-2); coxal organ present. Legs : chaetotaxy : I (8-4-3-3-1) II (6-2-2-3-0) III (5-2-1-2-0) IV (5-2-1-1-0); four eupathidia on tarsus I : (*tc*) and (*p*); solenidiotaxy : 2 ; femur IV entire. Palp : (6-2-2) + ω, with a double eupathidium at the end of the tarsus.

**Generic Unit TY2** (Tydeinae)

1 ♂ + 1 ♀ labelled « Oregon Benton Co. near Rock Creek, Corvallis watershed, Ex Moss & Litter on Fir Stump, 11-13-76, Coll R.D. Sanders ».

— DIAGNOSIS : Prodorsum : recurved. Opisthosoma : dorsal chaetotaxy : 10 (*l2*, *b1* missing); poroidotaxy : 3 ; genital organotaxy : (0,4-6-4); epimeral formula : (3-1-4-2); coxal organ present. Legs : chaetotaxy : I (8-4-3-3-0) II (6-2-2-3-0) III (5-2-1-2-1) IV (5-2-1-1-0); eupathidia on tarsus I : *ft''*, (*tc*) and (*p*); solenidiotaxy : 1 ; femur IV entire. Palp : (6-1-2) + ω, with a double eupathidium at the end of the tarsus.

## 2. KEY TO THE STASES

1. — Calyptostasis . . . . . Prelarva  
— « Normal » stase . . . . . 2
2. — Three pairs of legs . . . . . Larva  
— Four pairs of legs . . . . . 3
3. — Dehiscence line, δ, on prodorsum ; genital acetabula, if present, exposed ; progenital aperture absent . . . Nymph 4  
— Dehiscence line absent ; with a progenital chamber (sheltering genital acetabula when they exist) opening through a progenital aperture . . . . . Adult
4. — Legs IV with only five setae, all arising on the tarsus ; epimeral formula (3-1-2-0) or (3-1-3-0) ; no more than one pair (eventually fused) of diachile slots . . . . . Protonymph  
— At least six setae on leg IV ; epimeron IV with two or three setae . . . . . 5
5. — Epimeral formula (3-1-3-2) or (3-1-4-2) ; at most, with two pairs of genital setae and two pairs of aggenitals . . . . . Deutonymph (12)  
— Epimeral formula (3-1-3-3), (3-1-4-3) or (3-1-4-2) . . . . . Tritonymph (12)

(12) In our present state of knowledge, it is impossible to distinguish between deuto- and tritonymphs in every case. Couplet 5, however, permits separation in most instances. The epimeral formula (3-1-4-2) is common to

## 3. KEY TO THE SUBFAMILIES OF TYDEIDAE

(any stase)

1. — Leg solenidiotaxy : four ; four terminal or a multiple eupathidium at the tip of the palptarsus ; three eyes . . . . . Meyerellinae
  - Leg solenidiotaxy : three or less ; multiple eupathidium at the tip of the palp tarsus . . . . . 2
2. — Leg solenidiotaxy : three . . . . . 3
  - Leg solenidiotaxy : two or less . . . . . 5
3. — Apotele I absent or, at least, without claws or with vestigial claws ; eupathidia very long on tarsus I ; genital setae absent, number of genital acetabula varying from two pairs to none . . . . . Pronematinae
  - Apotele I normal ; genital setae present at least commencing with the tritonymphal stase ; two pairs of genital acetabula commencing with the deutonymph . . . . . 4
4. — Genua II, III and IV nude ; three pairs of lyrifissures . . . . . Pretydeinae (*Pretydeus*)
  - Genu II with at least two setae ; genu III with at least one seta ; four pairs of lyrifissures . . . . . Tydaeolinae
5. — Palptibia with two setae ; genu II, III and IV nude ; multiple eupathidium at the end of the palp with three small tines . . . . . Pretydeinae (*Prelorryia*)
  - Without the above combination of characters ; double or triple eupathidium at the end of the palptarsus . . . . . 6
6. — Four pairs of lyrifissures ; setae *l2* present on the opisthosoma . . . . . Australotydeinae
  - Three or four pairs of lyrifissures ; setae *l2* absent . . . . . 7

both nymphs, but the number of aggenital setae generally differs between the two stases. The key does not provide adequate information for certain genera, such as *Homeopronematus* male or *Eotydeus* where genital chaetotaxy regression occurs even in the adults. Further information on the ontogeny of these genera is required.

7. — Three pairs of lyrifissures ; at most three setae on femur I ; two eyes . . . . . Tydeinae
  - Four pairs of lyrifissures ; at least, four setae on femur I ; three eyes . . . . . Triophtydeinae

## 4. KEY TO THE GENERA (adults only)

1. — Tarsus I with 12 setae . . . . . 2
  - Tarsus I with 11 setae or less . . . . . 11
2. — Tibia I with six setae (one of them being eupathidial and another being the famulus) and one solenidion ; tibia II also with a solenidion . . . . . *Meyerella*
  - Without the above combination of characters . . . . . 3
3. — Tibia I with six setae (one of them being an eupathidium clustered with the famulus) ; solenidion  $\varphi$  I recessed ;  $\varphi$  II absent . . . . . *Pseudotydeus*
  - Tibia I with five setae . . . . . 4
4. — Prodorsum recurved, (*p1*) clearly anterior to (*p2*) ; femur IV divided . . . . . *Pretriophtydeus*
  - Prodorsum procurved, (*p1*) either between (*p2*) and (*s*) or posterior to (*s*) ; femur IV not divided . . . . . 5
5. — (*p1*) located posteriorly to (*p2*) but anterior to (*s*) ; strong double eupathidium at the end of the palp tarsus . . . . . 6
  - (*p1*) located between or posterior to sensilla ; triple eupathidium at the end of the palp . . . . . 7
6. — Femur I with six setae ; genu III with three setae . . . . . *Lasiotydeus*
  - Femur I with five setae ; genu III with two setae . . . . . *Tyndareus (rostratus)*
7. — Genu III with three setae ; six pairs of genital and four pairs of aggenital setae . . . . . *Primotydeus*
  - Genu III with one or two setae . . . . . 8
8. — Genu III with two setae ; femur II with four setae . . . . . 9
  - Genu III with one seta ; femur II with three setae . . . . . 10
9. — Femur I with four setae . . . . . *Metatydaeolus*
  - Femur I with six setae . . . . . *Paratriophtydeus*

10. — Femur I with six setae ; femur III with three setae . . .  
     . . . . . *Paratydaeolus*  
 — Femur I with four setae ; femur III with two setae . . .  
     . . . . . *Coccotydaeolus*
11. — Tarsus I with 11 setae . . . . . 12  
 — Tarsus I with 10 setae or less . . . . . 14
12. — Prodorsum recurved ; femur IV divided *Apotriophydeus*  
 — Prodorsum procurved ; femur IV not divided . . . 13
13. — Three pairs of aggenital setae ; genu III with one seta  
     . . . . . *Microtydeus*  
 — Four pairs of aggenital setae ; genu III with two setae  
     . . . . . *Tydaeolus*
14. — Tarsus I with ten setae . . . . . 15  
 — Tarsus I with eight setae or less . . . . . 20
15. — Prodorsum procurved ; genu II with four setae . . . 16  
 — Prodorsum recurved ; genu II with three setae or less . . . 17
16. — Tarsus II with eight setae ; tarsi III and IV with seven  
     setae . . . . . *Tyndareus (eloquens)*  
 — Tarsus II with six setae ; tarsi III and IV with five setae  
     . . . . . *Aesthetydeus*
17. — *l*<sub>2</sub> present on opisthosoma ; genu II with three setae . . .  
     . . . . . *Australotydeus*  
 — *l*<sub>2</sub> absent ; genu II with one or two setae . . . . . 18
18. — Solenidion ♀ II present on tibia II ; genu I with four  
     setae ; genu IV with three setae . . . *Pseudotriophydeus*  
 — Solenidion ♀ II absent ; genu I with three setae ; genu  
     IV with one or two setae . . . . . 19
19. — Genua II, III and IV with only one seta *Teletriophydeus*  
 — Genua II, III and IV with two setae *Metatriophydeus*
20. — Apotele I with vestigial claws or with no claws ; or  
     apotele I absent . . . . . 21  
 — Apotele I present and normal . . . . . 31
21. — Apotele I absent . . . . . 22  
 — Apotele I with vestigial claws or with no claws ; femur IV  
     divided . . . . . 29

22. — Four pairs of aggenital setae . . . . . 23  
 — Three pairs of aggenital setae, or less . . . . . 26
23. — Tarsi II, III and IV with seven setae . . . *Proctotydaeus*  
 — Tarsi III and IV with six setae or less ; femur IV not  
     divided . . . . . 24
24. — Tarsus II with seven setae ; genu II with two setae . . .  
     . . . . . *Pronematulus*  
 — Tarsus II with only six setae ; genu II with three setae . . . 25
25. — Trochanters I and II with no setae ; tarsi III and IV  
     with five setae . . . . . *Pronematus*  
 — Trochanter I and II with one setae ; tarsi III and IV  
     with six setae . . . . . *Homeopronematus* ♀
26. — Only one pair of aggenital setae . . . *Homeopronematus* ♂  
 — Three pairs of aggenital setae . . . . . 27
27. — Genua I and II with three setae ; genu III with two  
     setae . . . . . *Metapronematus*  
 — Genua I and II with two setae . . . . . 28
28. — (*p*<sub>2</sub>) reduced or absent on the prodorsum ; genu III with  
     two setae ; trochanter II nude . . . *Parapronematus*  
 — (*p*<sub>2</sub>) normal ; genu and trochanter II with one setae . . .  
     . . . . . *Apopronematus*
29. — Tarsi II, III and IV with seven setae . . . *Naudea*  
 — Tarsi II, III and IV with at most six setae . . . . . 30
30. — Tarsus III with six setae ; genu II with three setae and  
     genu III with two setae . . . . . *Pausia*  
 — Tarsus III with five setae ; genua II and III with only  
     one seta . . . . . *Pronecupulatus*
31. — Genua II, III and IV nude ; trochanter II with one  
     seta . . . . . 32  
 — At least one seta on genu II ; trochanter II nude . . . 33
32. — Solenidion ♀ I present on tibia I . . . . . *Pretydeus*  
 — Solenidion ♀ I absent . . . . . *Prelorryia*
33. — Femur III with two setae . . . . . 34  
 — Femur III with only one seta . . . . . 37

34. — Six pairs of genital setae and four pairs of aggenitals . . . 35  
 — Three or less pairs of genital setae . . . 36
35. — Tibia III and IV with only one seta ;  $\omega 2$  absent . . . . .  
 . . . . . *Idiolorryia*  
 — Tibia III and IV with two setae ;  $\omega 2$  present . . . *Tydeus*
36. — Two pairs of genital setae ; three or four pairs of aggenitals . . . . . *Eotydeus*  
 — Three pairs of genital setae ; four pairs of aggenitals . . . . . *Tydides*
37. — Genu I with three setae ; genu II with two setae . . . 38  
 — Genu I with one or two setae ; genu II with one setae 41
38. — Femur IV nude ; four pairs of genital setae . . . 39  
 — Femur IV with one seta ; six pairs of genital setae . . . 40
39. — Solenidion  $\omega II$  present . . . . . *Afrotydeus*  
 — Solenidion  $\omega II$  absent . . . . . *Perafrotydeus*
40. — Femur II with three setae . . . . . *Homeotydeus*  
 — Femur II with two setae . . . . . *Orthotydeus*
41. — Genua III and IV with one seta . . . . . *Metalorryia*  
 — Genua III and IV nude . . . . . 42
42. — Tibia II, III and IV with two setae . . . *Krantzlorryia*  
 — Tibia II, III and IV with one seta . . . . . 43
43. — Trochanter III with one seta ; four or five pairs of genital setae ; four pairs of aggenitals . . . . . *Neolorryia*  
 — Trochanter III with no seta ; three pairs of genital and aggenital setae . . . . . *Apolorryia*

## 5. CONCLUSIONS

As emphasized by Athias-Henriot (1975), the elaboration of identification tools has nothing in common with systematic investigations. « For the first procedure, clearly visible morphological details are important. The second one requires a correct morphological understanding of the body components and an exhaustive study of their distribution and variability throughout the members

of the whole group. » (Athias-Henriot, 1975 : 106). An exhaustive study of organotactic characteristics of the family Tydeidae is presented in parts II and III of this work. The data collected were subjected to cladistic analyses in order to construct a consistent phylogeny and classification for the family. The resulting scheme does not pretend to be free of error, especially in regard to the manner of weighting the characters used. However, at the very least, a frame of reference has been provided for future studies.

Future work on tydeid systematics may be oriented in one of two ways : either downward to the generic and specific levels, or upward to the superfamilial level. Many species will have to be redescribed either because of the poor quality of the first description, or because immatures were neglected. Such a study could be achieved by individual in-depth reviews of the proposed subfamilies or even of genera. The other possibility for a meaningful approach to future study of tydeid systematics is through an examination of the superfamily Tydeoidea. Krantz (1978) grouped three other families with the Tydeidae in the Tydeoidea : the Ereynetidae, Paratydeidae, and Iolinidae.

I have studied only a few specimens of Ereynetidae, Paratydeidae, and Iolinidae. On the basis of this limited study, however, some features are already obvious. The Paratydeidae are clearly distinct from Tydeidae ; the peritremes of the former group are more developed and their solenidiotaxy is notably richer. However, the notation proposed here for the Tydeidae should be applicable to the Paratydeidae as well. The Ereynetidae pose a problem in that I am unable to demonstrate any differences between them and the Tydeidae. The so-called ereynetid organ of tibia I of Ereynetidae (designation still used by Fain 1964) was identified long ago as solenidion  $\varphi I$  (Grandjean, 1939). This solenidion is deeply recessed in adult ereynetids but, in the larval stage, it does not differ from a recessed solenidion of tydeids. The solenidiotaxy of Ereynetidae is richer than that of the tydeid subfamily Tydeinae but poorer than that of Meyerellinae. The ereynetid chaetotaxy is surprisingly similar to that of the Tydeidae, even as regards the eupathidia. Paraproctal suckers are common to both families. A distinctive clustering of ( $\varphi I-f'$ ) and ( $k''-l''\zeta$ ) has been observed both in an *Ereynetes* species and in *Pseudotydeus*. The number of genital acetabula is virtually identical in both families (the tydeid subfamily Pronematinae is an exception). Poroidotaxy is also similar. There-

fore, it is likely that the two families will have to be amalgamated or at least reorganized along other lines. It would be necessary to study the Ereyneidae in depth and to apply a cladistic approach simultaneously to genera that presently are assigned to the Tydeidae or Ereyneidae. The Iolinidae, from which the genus *Proctotydaeus* has been withdrawn, comprises only the genus *Iolina*. At first sight, Iolinidae could be included in the Tydeoidea as proposed by Krantz (1978). Differences may be found on the gnathosoma (palp segments fused, styliform chelicerae).

#### APPENDIX I

The onomatophores (holotypes) and paratypes of the new species are deposited in the following museums (NMNH : National Museum of Natural History, U.S.A. ; BM : British Museum, London ; CNC : Canadian National Collection, Ottawa).

*Apronematus bakeri* : 1 ♀ (holotype), 1 ♀ + 1 tritonymph : NMNH.  
*Metatydaeus joannis* : 1 ♀ (holotype), 2 ♀ (one in bad state) ; CNC.  
*Meyerella marshalli* : 1 ♀ (holotype), 1 trito- and 1 deutonymphs : CNC ; 1 ♀ : NMNH ; 1 ♀ : BM.  
*Paratriophtydeus coineai* : 1 ♀ (ge : 3 + 3) (holotype), 3 ♀ (3 + 3), 1 ♀ (3 + 4), 1 ♀ (4 + 4), 1 ♂ (4 + 4), 1 trito- and 1 deutonymphs : CNC ; 1 ♀ (3 + 4) and 1 ♂ (4 + 4) : NMNH ; 1 ♀ (3 + 3) and 1 ♂ (4 + 4) : BM.  
*Paratydaeus lukoschusi* : 1 ♀ (holotype), 1 trito- ad 1 deutonymphs, 1 larva : BM ; 1 ♀ and 1 deutonymph : NMNH ; 1 ♀ and 1 deutonymph : CNC.  
*Primotydeus strandtmanni* : 1 ♀ (holotype), 3 ♀ and 3 ♂, 1 deuto- and 1 tritonymphs : Bishop Museum, Honolulu.

Other specimens in the author's collection.

#### APPENDIX II : Species index

(only valid for part IV)

<i>acaciae</i> , 128	<i>citri</i> , 129	<i>geminus</i> , 128
<i>alaskensis</i> , 110	<i>coineai</i> , 129	<i>goetzi</i> , 128
<i>anahuacensis</i> , 147	<i>congoensis</i> , 107	<i>grewia</i> , 117
<i>andreae</i> , 117	<i>craveni</i> , 119	<i>hondurensis</i> , 143
<i>armaghensis</i> , 118	<i>cumbrensis</i> , 116	<i>indionensis</i> , 142
<i>arthurbakeri</i> , 116	<i>curiosa</i> , 144	<i>joannis</i> , 120
<i>bakeri</i> (Apo.), 107	<i>doddsi</i> , 143	<i>kenyensis</i> , 107
<i>bakeri</i> (Cocco.), 111	<i>eloquens</i> , 155	<i>kevani</i> , 144
<i>bedfordienseis</i> , 154	<i>erebus</i> , 110	<i>kirstenae</i> , 111
<i>bellus</i> , 126	<i>expressus</i> , 140	<i>krantzi</i> (Cocco.), 111
<i>beltrani</i> , 126	<i>farbae</i> , 146	<i>krantzi</i> (Lasio.), 118
<i>bifurcatus</i> , 123	<i>flatus</i> , 120	<i>lanceoclaviger</i> , 140
<i>boycei</i> , 127	<i>frequens</i> , 153	<i>lebruni</i> , 119
<i>brachipalpus</i> , 116	<i>galapagosensis</i> , 147	<i>leucobippeus</i> , 119

<i>lindquisti</i> , 128	<i>petua</i> , 126	<i>taurica</i> , 142
<i>loadmanni</i> , 140	<i>protydeus</i> , 129	<i>tenuiclaviger</i> , 153
<i>lukoschusi</i> , 140	<i>pyrochippeus</i> , 146	<i>therapeutikos</i> , 146
<i>lwioensis</i> , 143	<i>raphignathoides</i> , 154	<i>tilbrookii</i> , 143
<i>macquillani</i> , 117	<i>reticulata</i> , 154	<i>tridactylus</i> , 154
<i>magdalenae</i> (M.), 119	<i>richinda</i> , 127	<i>turrialbensis</i> , 154
<i>magdalenae</i> (P.), 140	<i>rostratus</i> , 155	<i>ubiquitus</i> , 148
<i>marcandrei</i> , 144	<i>rusticus</i> , 147	<i>ulter</i> , 155
<i>marshalli</i> , 123	<i>rykei</i> , 148	<i>vandus</i> , 147
<i>meyeræ</i> , 142	<i>schistocercae</i> , 146	<i>vegei</i> , 148
<i>mirabilis</i> , 113	<i>setsukoae</i> , 106	<i>vidae</i> , 113
<i>munsteri</i> , 128	<i>shawi</i> , 116	<i>viviparus</i> , 155
<i>oblongus</i> , 127	<i>sphaeroclaviger</i> , 153	<i>volaticus</i> , 118
<i>pandana</i> , 147	<i>staercki</i> , 113	<i>wadei</i> , 153
<i>panitae</i> , 144	<i>strandtmanni</i> , 144	<i>wilkesi</i> , 110
<i>perplexus</i> , 151	<i>subterraneus</i> , 126	

#### BIBLIOGRAPHY

- ANDRÉ H., 1975. — Observations sur les acariens corticoles de Belgique. *Notes de recherche de la Fondation Universitaire Luxembourgeoise*, 4 : 1-31.
- ANDRÉ H., 1979. — Notes on the ecology of corticolous epiphyte dwellers. I. The mite fauna of fruticose lichens : 551-557. In : Rodriguez, J. G. (ed.). *Recent Advances in Acarology*, vol. 1. Academic Press, New York.
- ANDRÉ H., 1979. — A generic revision of the family Tydeidae (Acari : Actinedida). I. Introduction, paradigms and general classification. *Annales Soc. r. Zool. Belg.*, 108 : 189-208.
- ANDRÉ H., 1980. — A generic revision of the family Tydeidae (Acari : Actinedida). II. Organotaxy of the idiosoma and gnathosoma. *Acarologia*, 21 (in press).
- ANDRÉ H., 1980. — A generic revision of the family Tydeidae (Acari : Actinedida). III. Organotaxy of the legs. *Acarologia*, 22 (in press).
- ATHIAS-HENRIOT C., 1975. — The idiosomatic euneotaxy and epineotaxy in gamasids (Arachnida : Parasitiformes). *Z. Zool. Syst. Evol.-forsch.*, 13 : 97-109.
- BAKER E.W., 1943. — Nuevos Tydeidae Mexicanos (Acarina). *Rev. Soc. Mexic. Hist. Nat.*, 4 : 181-189.
- BAKER E.W., 1944a. — *Pronecupulatus*, a new genus of Tydeidae (Acarina) from Mexico. *J. Kans. Ent. Soc.*, 17 : 72-73.
- BAKER E.W., 1944b. — Seis species de *Lorryia* (Acarina : Tydeidae). *Anales Inst. Biol. Mexico*, 15 : 215-222.
- BAKER E.W., 1944c. — Tideidos Mexicanos (Acarina, Tydeidae) *Rev. Soc. Mexic. Hist. Nat.*, 5 : 73-81.
- BAKER E.W., 1944d. — Four new species of Tydeidae from Mexico (Acarina). *Proc. Ent. Soc. Wash.*, 46 : 159-162.
- BAKER E.W., 1947. — Notes on mites of the family Tydeidae (Acarina) with descriptions of two new species. *Proc. Ent. Soc. Wash.*, 49 : 131-136.
- BAKER E.W., 1965. — A review of the genera of the family Tydeidae (Acarina). *Advances in Acarology*. Cornell University Press, Ithaca, New York, 2 : 95-133.

- BAKER E.W., 1968a. — Two new genera of Tydeidae (Acarina). *Ann. Entomol. Soc. Amer.*, 61 : 968-970.
- BAKER E.W. 1968b. — The genus *Lorryia*. *Ann. Entomol. Soc. Amer.*, 61 : 986-1008.
- BAKER E.W. 1968c. — The genus *Pronematus* Canestrini. *Ann. Entomol. Soc. Amer.*, 61 : 1091-1097.
- BAKER E.W. 1968d. — The genus *Paralorryia*. *Ann. Entomol. Soc. Amer.*, 61 : 1097-1106.
- BAKER E.W., 1969. — *Oriolella*, a new name for *Oriola* (Acarina : Tydeidae). *Proc. Ent. Soc. Wash.*, 71 : 204.
- BAKER E.W., 1970. — The genus *Tydeus* : subgenera and species groups with descriptions of new species (Acarina : Tydeidae). *Ann. Entomol. Soc. Amer.*, 63 : 163-177.
- BAKER E.W. and DELFINADO M.D., 1974. — Pseudotydeinae, a new subfamily of Tydeidae (Acarina). *Proc. Entomol. Soc. Wash.*, 76 : 444-447.
- BAKER E.W. and DELFINADO M.D., 1976. — Notes on the genus *Naudea* Meyer and Rodrigues, with description of a new species (Acarina : Tydeidae). *Intl. J. Acar.*, 2 : 35-38.
- BAKER E.W. and WHARTON G.W., 1952. — An Introduction to Acarology. The Macmillan Company, New York.
- BERLESE A., 1908. — Elenco di generi e specie nuove di Acari. *Redia*, 5 : 1-15.
- BERLESE A., 1910. — Brevi diagnosi di generi e specie nuovi di Acari. *Redia*, 6 : 346-388.
- BERLESE A., 1911. — Acari nuovi. *Redia*, 7 : 430.
- CANESTRINI G., 1886. — Prospetto dell'Acarofauna Italiana. *Atti Ist. Veneto.*, ser. 6, 4 : 693-734.
- EVANS G.O., 1952. — Terrestrial Acari new to Britain II. *Ann. Mag. nat. Hist.*, ser. 12, 5 : 660-675.
- FAIN A., 1964. — Chaetotaxy and specialized sensory organs of the Ereyneidae. *Acarologia*, 6, fasc. h.s. : 224-227.
- FAIN A. and EVANS O., 1966. The genus *Proctotydaeus* Berl. (Acari : Iolinidae) with description of two new species. *Ann. Mag. Nat. Hist.*, 9 : 149-157.
- FLECHTMANN C.H.W. and CAMARGO C.A. DE, 1979. — Acari associated with stingless bees (Meliponidae, Hymenoptera) from Brazil : 315-319. In : Piffil, E. (ed.). Proceedings of the 4th Intl. Congress of Acarology. Akadémiai Kiadó, Budapest.
- GERSON U., 1968. — Five Tydeid mites from Israël (Acarina : Prostigmata). *Israël J. Zoology*, 17 : 191-198.
- GRANDJEAN F., 1938. — Observations sur les Tydeidae (2e série) *Bull. Mus. Hist. nat.*, Paris, 2 ser., 10 : 593-600.
- GRANDJEAN F., 1939. — Observations sur les Acariens (5e série). *Bull. Mus. Hist. nat.*, Paris, 11 : 393-401.
- KOCH C.L., 1835. — Deutsche Crustacea, Myriapoda, Arachnida, 4 : 11-12.
- KRANTZ G.W., 1978. — A Manual of Acarology, Second Ed., Oregon State Univ. Bookstores, Corvallis.
- KUZNETZOV N.N., 1973. — A new subgenus and two new species of the family Tydeidae (Acariformes) from Crimea. *Zool. Zh.*, 52 : 1577-1579.

- KUZNETZOV N.N., 1975. — New genus and species of Tydeidae (Acariformes) of the Crimean fauna. *Zool. Zh.*, 54 : 1255-1257.
- KUZNETZOV, N.N., 1979. — On revision of the family Tydeidae (Acariformes). *Zool. Zh.*, 58 : 1413-1415.
- KUZNETZOV N.N. and LIVSHITZ I.Z., 1972. — A new genus and species of Tydeidae (Acariformes) from Crimea. *Zool. Zh.*, 51 : 1738-1740.
- KUZNETZOV N.N. and LIVSHITZ I.Z., 1973a. — Quelques aspects nouveaux des Tydeidae de la faune de Crimée, *Mémoires Scientifiques de l'Ecole Supérieure Sc. Biol.*, 8 : 13-18.
- KUZNETZOV N.N. and LIVSHITZ I.Z., 1973b. — Indications méthodologiques sur la récolte et la détermination des Tydeidae. Académie des Sciences Agronomiques de l'URSS, Jardin Botanique de l'Etat Nikitsky, Yalta.
- LIVSHITZ I.Z. and KUZNETZOV N.N., 1972. — A new genus of mites (Acariformes, Tydeidae). *Zool. Zh.*, 51 : 1081-1083.
- LIVSHITZ I.Z. and KUZNETZOV N.N., 1973. — New species of mites (Acariformes, Tydeidae) from the Nikitsky Botanical Gardens. *Zool. Zh.*, 52 : 280-282.
- MAC GREGOR E.A., 1932. — The ubiquitous mite, a new species on citrus. *Proc. Entomol. Soc. Wash.*, 34 : 60-63.
- MARSHALL V.G., 1970. — Tydeid mites (Acarina : Prostigmata) from Canada I. New and redescribed species of *Lorryia*. *Ann. Soc. Ent. Quebec*, 15 : 17-52.
- MEYER M.K.P. and RODRIGUES M.C., 1965. — Acari associated with cotton in Southern Africa (with references to other plants). *Garcia de Orta*, 13 : 1-33.
- MEYER M.K.P. and RYKE P.A.J., 1959. — New species of the families Tydeidae and Labidostommidae (Acarina : Prostigmata) collected from South African plants. *Acarologia*, 1 : 408-420.
- OUDEMANS A.C., 1925. — Acarologische Aantekeningen LXXIX. *Entomol. Ber.*, 7 : 26-34.
- ROUNSEVELL D.E., 1977. — Geographic variation in the size of an antarctic mite *Tydeus erebus* Strandtmann (Acarina : Prostigmata). *Acarologia*, 19 : 207-219.
- SALVIEJO P.B., 1969. — Some Philippine tydeid mites (Tydeidae : Acarina). *Philip. Ent.*, 1 : 261-277.
- SCHRUFT G., 1972. — Das Vorkommen von Milben aus der Familie Tydeidae (Acari) an Reben. VI. Beitrag über Untersuchungen zur Faunistik und biologie der Milben (Acari) an Kulturreben (*Vitis* sp.) *Z. angew. Entomol.*, 71 : 124-133.
- SPAIN A.V., 1969. — A new genus and species of Tydeidae (Acari : Prostigmata) from New Zealand. *Acarologia*, 11 : 23-28.
- STRANDTMANN R., 1967. — Terrestrial Prostigmata (Thrombidiform, Mites) : 51-80. In Gressitt, J.L. (ed.). Entomology of Antarctica. *Antarctic Res. Ser.* 10 Amer. Geophys. Union.
- STRANDTMANN R., 1970. — Acarina : Eupodiform Prostigmata of South Georgia. *Pacif. Ins. Monogr.*, 23 : 89-106.
- THOR S., 1931. — Norwegische Tydeidae. I-VII mit Kennzeichnung vier neuer Gattungen. *Zool. Anz.*, 94 : 89-104.
- TREAT A.E., 1961. — A tydeid mite from noctuid moths. *Acarologia*, 3 : 147-152.

- TREAT A.E., 1967. — Mites from noctuid moths. *Jour. Lepidopterist's Soc.*, 21 : 169-179.
- TREAT A.E., 1970. — Two tydeid mites from the ears of noctuid moths. *American Museum Novitates*, 2426 : 2-14.
- UECKERMANN E.A. and MEYER M.K.P., 1979. — African Tydeidae (Acari).  
I. The genus *Lorryia* Oudemans, 1925. *Phytophylactica*, 11 : 43-50.
- UECKERMANN E.A. and MEYER M.K.P., 1979. — African Tydeidae (Acari).  
II. The genus *Paralorryia* Baker, 1965. *Phytophylactica*, 11 : 117-127.
- WEIS-FOGH T., 1948. — Ecological investigation on mites and Collembolus in the Soil. *Nat. Jutlandica*. I : 135-270. Appendix : description of some new mites (Acari). *Natura Jutlandica*, I : 253-270.
- WOOD T.C., 1965. — New and redescribed species of Tydeidae (Acari) from moorland soils in Britain. *Acarologia*, 7 : 663-672.

NOTES SUR LES NYCTERIGLYPHINAE  
FAIN, 1963

(Acari, Astigmata, Rosensteiniidae) \*

par A. FAIN\*\*

La présente note est consacrée à la description des formes adultes d'une espèce, *Nycteriglyphus cheiromeles* FAIN, 1970 qui n'était connue jusqu'ici que par des immatures. L'étude de ces formes adultes nous a montré que cette espèce représente en fait un genre nouveau que nous décrivons ici.

La nomenclature des poils idiosomaux utilisée ici est celle que nous avons décrite précédemment (FAIN, 1963).

ROSENSTEINIIDAE COOREMAN, 1954

NYCTERIGLYPHINAE FAIN, 1963

Genre **Molossilichus** n. gen.

*Définition* : Cuticule avec une striation simple chez les nymphes et le mâle, et une striation écailleuse chez la femelle. Femelle et tritonymphe avec une chaetotaxie dorsale caractéristique : les poils *vi*, *sci*, *sce* et *l1* sont épineux, épais, légèrement comprimés latéralement, fourchus apicalement et avec une ou deux petites dents préapicales. Les poils hysteronotaux sont apparemment du même type que les précédents mais nettement plus faibles. Orifice de la bursa dorsal sans papille distincte. Poils ventraux simples, fins. Epimères I soudés en V et réunis à l'épigynium. Anus subterminal ventral. Gnathosoma très développé, portant en position paramédiane deux grandes membranes triangulaires dirigées en dehors et

\* Déposé le 7.XI.1979

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