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Review of the systematics of the family *Camerobiidae*,  
 II. The genus *Neophyllobius* BERLESE, 1886  
 (*Acari: Raphignathoidea*)

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ABSTRACT. The genus *Neophyllobius* BERLESE, 1886 is reviewed and a general key for identification of the species is given. The following 50 new species are described; *Neophyllobius acaciae*, *N. arenarius*, *N. armeniaca*, *N. atriplicis*, *N. bequartiodendri*, *N. bialagorensis*, *N. binisetosus*, *N. capparidis*, *N. ceratoniae*, *N. coloradensis*, *N. combreticola*, *N. conocarpi*, *N. coxalis*, *N. danthoniae*, *N. dichantii*, *N. dickansoni*, *N. eragrostidis*, *N. femoralis*, *N. gigantorum*, *N. graminicola*, *N. graminum*, *N. hispanicus*, *N. hypoleanae*, *N. interruptus*, *N. lachishensis*, *N. lanceolatus*, *N. levanticola*, *N. meyeriae*, *N. montanus*, *N. muscantribii*, *N. niloticus*, *N. oregonensis*, *N. panici*, *N. parisianus*, *N. parthenocissi*, *N. platanobius*, *N. plumifer*, *N. podocarpi*, *N. ponderosus*, *N. pruni*, *N. quinquepilis*, *N. sanctaeluciae*, *N. setosus*, *N. sturmerwoodi*, *N. tamarindi*, *N. tenuipilis*, *N. theobromae*, *N. ueckermanni*, *N. vandebundi*, *N. viticola*. The epithet of *N. horridus* DE LEON, 1958 has been replaced by the name *N. deleoni* nom. nov. In addition 35 already known species are redescribed and in most cases figured.

INTRODUCTION

A review of the genus *Camerobia* SOUTHCOTT, 1957, with the erection of the genera *Decaphyllobius*, *Tillandsobius* and *Tycherobius* has been presented in BOLLAND, 1986. The present paper is a continuation of the study of *Camerobiidae* and deals with a treatise of the genus *Neophyllobius*. *Neophyllobius* is the largest genus in the family *Camerobiidae* and thirty five species have been described thus far. *Neophyllobius* has a world-wide distribution and species have been found in Europe, Asia, North and South America, Africa, Australia and New Zealand.

Data on the developmental stages and chromosome numbers are found in BOLLAND, 1983 and HELLE et al., 1984.

The chaetotaxy used in the present report follows that in BOLLAND, 1986.

Four species have been described in the past as belonging to *Neophyllobius*, but are not assigned to *Camerobiidae* anymore. *N. harti* EWING 1909 = *Petrobia harti* (EWING) (*Tetranychidae*); *N. horridus* BERLESE, 1886 = *Tetranychopsis horridus* (CAN. & FANZ.) (*Tetranychidae*); *N. latus* BERLESE, 1886 = *Eurytetranychus buxi* (GARMAN) (*Tetranychidae*); *Neophyllobius foroliviensis* LOMB., 1943 = *Damaeus foroliviensis* (LOMBARDINI), 1962 (*Oribatidae*).

In PRITCHARD and BAKER, 1955 it is questioned whether *Heteronychus hirtus* CAN. & FANZ., 1876 is a *Neophyllobius* species. The different tarsus end of leg I and setation of genu IV, are reasons for the author to conclude that *Heteronychus hirtus* is not *Neophyllobius* and even not a member of the *Camerobiidae*.

#### ACKNOWLEDGEMENTS AND DEPOSITORIES OF MATERIAL STUDIED

The material studied belongs to the collections of the institutions mentioned below. I am indebted to the curators of these collections for the loan of specimens. The abbreviations of the institutions in the list are used throughout the text. The specimens collected by the author will be deposited in the ZMA.

- BM(NH) British Museum (Natural History), Cromwell Road, London; Mr. D. MACFARLANE
- DCDG Doyle Conner, Commissioner of Agriculture, Division of Plant Industry, Gainesville, Florida; Dr. H. A. DENMARK
- FAUC Faculty of Agriculture, University of Cairo, Giza, Egypt; Dr. M. A. ZAHER
- GNBS The State Nikita Botanical Gardens, Yalta, USSR; Dr. I. Z. LIVSHITS
- HUJ Hebrew University of Jerusalem, Faculty of Agriculture, Rehovot, Israel; Dr. U. GERSON
- ISZAF Istituto Sperimentale per la Zoologia Agraria, Firenze, Italia; Dr. F. PEGAZZANO
- MCZ Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA; Dr. H. W. LEVI
- NMI National Museum of Ireland, Natural History Division, Dublin, Ireland; Dr. J. P. O'CONNOR

- PPRI Plant Protection Research Institute, Department of Agriculture, Pretoria, South Africa; Dr. M. K. P. SMITH-MEYER
- SAM South Australian Museum, Adelaide, Australia; Dr. D. C. LEE
- UAM Uniwersytet im. A. Mickiewicza, Instytut Biologii, Poznań, Poland; Dr. M. KALISZEWSKI
- UMC University of Missouri Columbia, Missouri, USA; Dr. W. R. ENNS
- UNSW University of New South Wales, School of Zoology, Kensington, New South Wales, Australia; Dr. A. M. RICHARDS
- USNM National Museum of Natural History, (formerly United States National Museum), Smithsonian Institution, Washington D. C., Dr. E. W. BAKER
- VUP E. T. S. I. Agrónomos, Universidad Politécnica, Valencia, Spain; Dr. F. GARCIA-MARI
- ZMA Instituut voor Taxonomische Zoologie (Zoological Museum), University of Amsterdam, The Netherlands; Dr. J. P. DUFFELS

I am grateful to Prof. Dr. W. HELLE for his help and suggestions with the preparation of the manuscript and Dr. L. P. S. VAN DER GEEST, for reading and correcting it. Thanks are due to Dr. S. KREITER for slides, Dr. G. L. VAN EYNDHOVEN for slides and translations of some Italian papers, Dr. F. PEGAZZANO for information around the type species of *Neophyllobius elegans* and the BERLESE collection, Dr. S. IGNATOWICZ for the translations of the Russian literature and Dr. W. N. ELLIS and Dr. A. C. ELLIS-ADAM for reviewing the scientific names of the new species.

This work is dedicated to my wife G. C. BOLLAND-OOSTERBAAN.

#### DESCRIPTION OF THE GENUS, KEY AND REVIEW OF THE SPECIES

##### *Neophyllobius* BERLESE, 1886

Type species: *Neophyllobius elegans* BERLESE, 1886

Dorsum small 210-400  $\mu\text{m}$ . Two double-lensed eyes are present. Dorsum with 9 pairs of *l* (= dorso-lateral setae) and 5-6 pairs of *mc* (= dorso-central setae). A band of coarse striae runs around the outer margin of the dorsum, invades dorsum behind  $l_5$  and curves anterad behind  $mc_2$  rejoining the margin behind  $l_5$ . Similar bands behind  $l_7$ - $mc_3$ - $l_7$ ,  $l_7$ - $mc_4$ - $l_7$ , and behind  $l_8$ - $mc_5$ - $l_8$ . One short, supracoxal seta is situated lateral to  $l_2$ .

There are three pairs of ventral setae. In addition, there are two pairs of genital and three pairs of anal setae.

Ventrally, close to the palpbasis is a pair of hardly discernible coxal setae. The small gnathosoma is almost covered by the anterior flap of the prodorsum. Basal parts of the chelicerae are fused; stylets short, dagger-like and movable. Tortuous peritremata arise on the dorsum of the gnathosoma and consists of one almost complete loop; ventral side with two pairs of adoral setae; pedipalps divided into five segments with the following setation: trochanter without setae, femur has two setae, genu one seta and tibia four setae. One of the tibial setae is sword-like and is probably a vestigial palptibial claw. Tarsus with two setae. In addition, palptarsus with one solenidion and one or two eupathidia.

The legs are often stilt-like, because of an elongation of the femora and tibiae. The genua are relatively short. Coxae are arranged in two groups, with a space between II and III. Coxae I-IV with a setal formula of 3-1-2-2.

Trochanters I-IV each with a single seta. Genua setae often whiplike. Genua I and II with an additional spine. Tibial setae counts 9-8-8-7. Each tibia has a solenidion on the distal end. Tarsi with one or two medio-ventral setae. If two setae present then placed in a longitudinal line at one and two third of segment, respectively. Tarsi I-II each with a sub-basal solenidion. Tarsi with 8-8-6-6 setae at the distal end.

Two pairs of lyrifissures (cupules) were found. One pair, dorsal, between setae  $l_6$  and  $l_7$  and one pair, ventral, beside the distal part of the genital area.

Remark: LIVSHITS & MITROFANOV, 1975 give in figure 58 B, a pair of pre-genital setae which have never been found in any other *Neophyllobius* species.

#### Key to the species of the genus *Neophyllobius* (based on females)

1. Tarsi I-III with one seta midventral . . . . . *N. meyeræ*  
Tarsi I-III with two setae midventral . . . . . 2
2. Tarsus IV with one seta midventral . . . . . 3  
Tarsus IV with two setae midventral . . . . . 13
3. Femur I with four setae . . . . . 4  
Femur I with three setae . . . . . 12
4. Femur II with three setae . . . . . 5  
Femur II with two setae . . . . . 12
5. Bands of coarse striae, dorso- central hooked(interrupted) between



- $mc_1$  and  $mc_2$  and between  $mc_2$  and  $mc_3$  . . . . . *N. interruptus*  
 Bands of coarse striae, dorso- central not hooked . . . . . 6
6.  $Mc_3$  longest  $mc$  setae . . . . . *N. dichantii*  
 $Mc_3$  not longest  $mc$  setae . . . . . 7
7.  $Mc_4$  longest  $mc$  setae,  $mc_1$  very short( $1/2 mc_3$ ) . . . . . *N. panici*  
 $Mc_5$  longest  $mc$  setae . . . . . 8
8. Genu IV setae two times the genu length . . . . . *N. texanus*  
 Genu IV setae more than two times the genu length . . . . . 9
9.  $Mc_3$  setae longer than  $mc_6$  setae . . . . . 10  
 $Mc_3$  setae shorter than  $mc_6$  setae . . . . . 11
10. Most distal seta on femur II, longest femur II seta. *N. muscantribii*  
 Second seta on femur II, longest femur seta . . . *N. eragrostidis*
11. Five pairs of  $mc$  setae ( $mc_1$  is not present); second seta on femur II is  
 shortest femur seta . . . . . *N. quinquepilis*  
 Six pairs of  $mc$  setae; second seta on femur II is longest femur  
 seta . . . . . *N. graminicola*
12.  $Mc_3$  much longer as  $mc_4$  and  $mc_5$ ;  $mc_6$  based close to  $mc_5$ ;  $mc_3$   
 based on "strong" tubercles . . . . . *N. bialagorensis*  
 $Mc_3$  as long as  $mc_4$  and  $mc_5$ ;  $mc_6$  based far from  $mc_5$ ;  $mc_3$  not  
 based on "strong" tubercles . . . . . *N. vandebundi*
- (continued on p. 81)

***Neophyllobius meyeræ* spec. nov.**

(figs. 1-5)

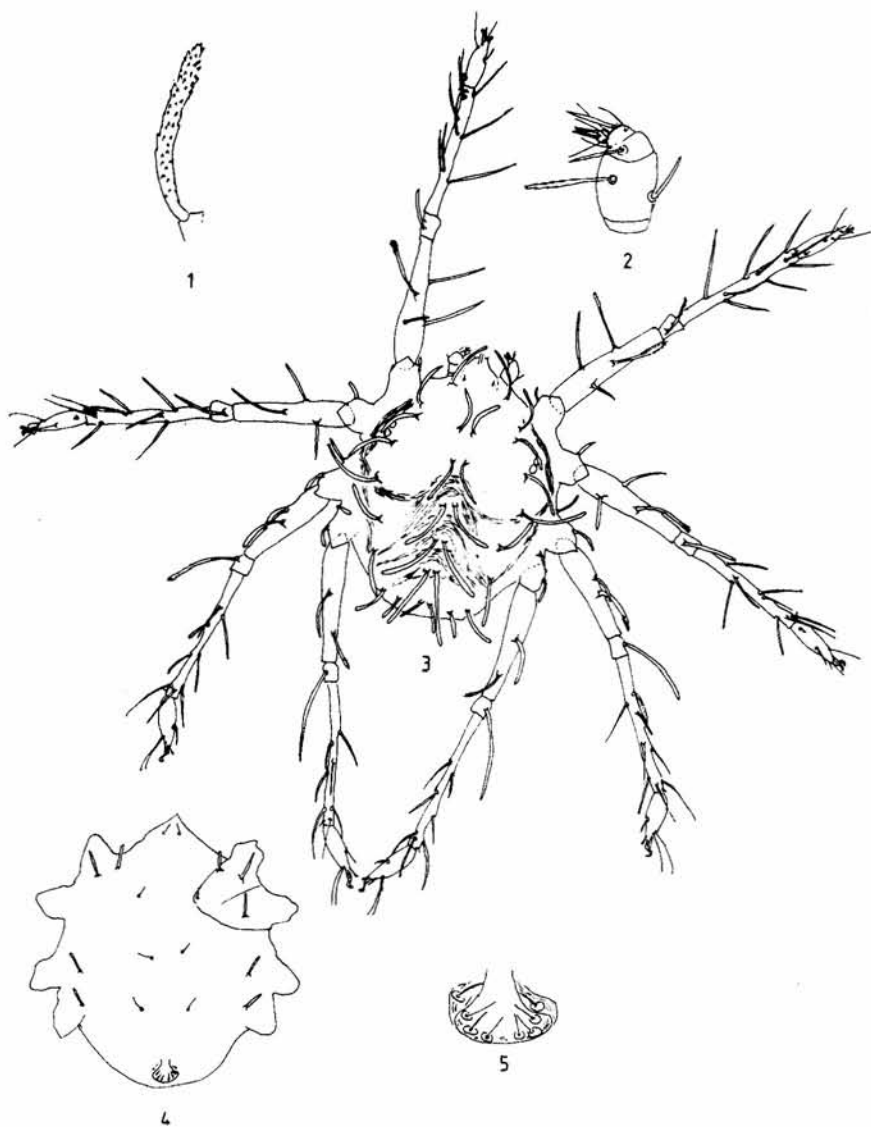
Female: Body length 290  $\mu$ m, width 250  $\mu$ m. Length of legs: 420; 390; 400; 435  $\mu$ m. Six pairs of  $mc$ : 45; 50; 60; 70; 70; 30  $\mu$ m. Nine pairs of  $l$ : 55; 50; 50; 55; 70; 50; 55; 45; 30  $\mu$ m. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 9-9-7-7. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

This species is characterised by having only one seta midventral on each tarsus.

Male: unknown.

Type material: Holotype ♀, RSA, near Jozini, on undetermined grass, 21. ix. 1972, J. W. SCHULTZ (no. AcY 72/489-5096 PPRI).

This species is named after Dr. M. K. P. SMITH-MEYER.



1-5. *Neophyllobius meyeræ* spec. nov., ♀. 1, dorsal seta  $l_5$ ; 2, pedipalp; 3, dorsal view; 4, venter; 5, genital area

*Neophyllobius interruptus* spec. nov.

(figs. 6-9)

*Neophyllobius* sp. nr. *texanus* MCGREGOR; MUMA, 1975: 49-50.

Female: Body length 335  $\mu\text{m}$ , width 200  $\mu\text{m}$ . Length of legs: 530; 405; 500; 570  $\mu\text{m}$ . Six pairs of *mc*: 25; 25; 30; 40; 55; 40  $\mu\text{m}$ . Nine pairs of *l*: 55; 40; 45; 45; 55; 50; 50; 25; 35  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-7. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like, tarsus 2 + 2 eupathidia.

The dorsum is much longer than wide. Setae pair  $mc_1$  is situated directly behind the level of the  $l_1$  setae and far away from the  $mc_2$  pair. The coarse striae are typical hooked medio-dorsal, between  $mc_2$  and  $mc_3$  and between  $mc_3$  and  $mc_4$ .

Type material: Holotype ♀, USA, Florida, 3 mi. S. Sevilla, on backside leaf of *Citrus* spec., 23.i.1953, H. HOLTZBERG (DCDG Sp 2-339).

*Neophyllobius dichantii* spec. nov.

(figs. 10-15)

Female: Body length 360  $\mu\text{m}$ , width 310  $\mu\text{m}$ . Length of legs: 545; 470; 530; 565  $\mu\text{m}$ . Six pairs of *mc*: 40; 50; 110; 80; 70; 30  $\mu\text{m}$ . Nine pairs of *l*: 60; 45; 40; 45; 70; 45; 45; 35; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-7. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

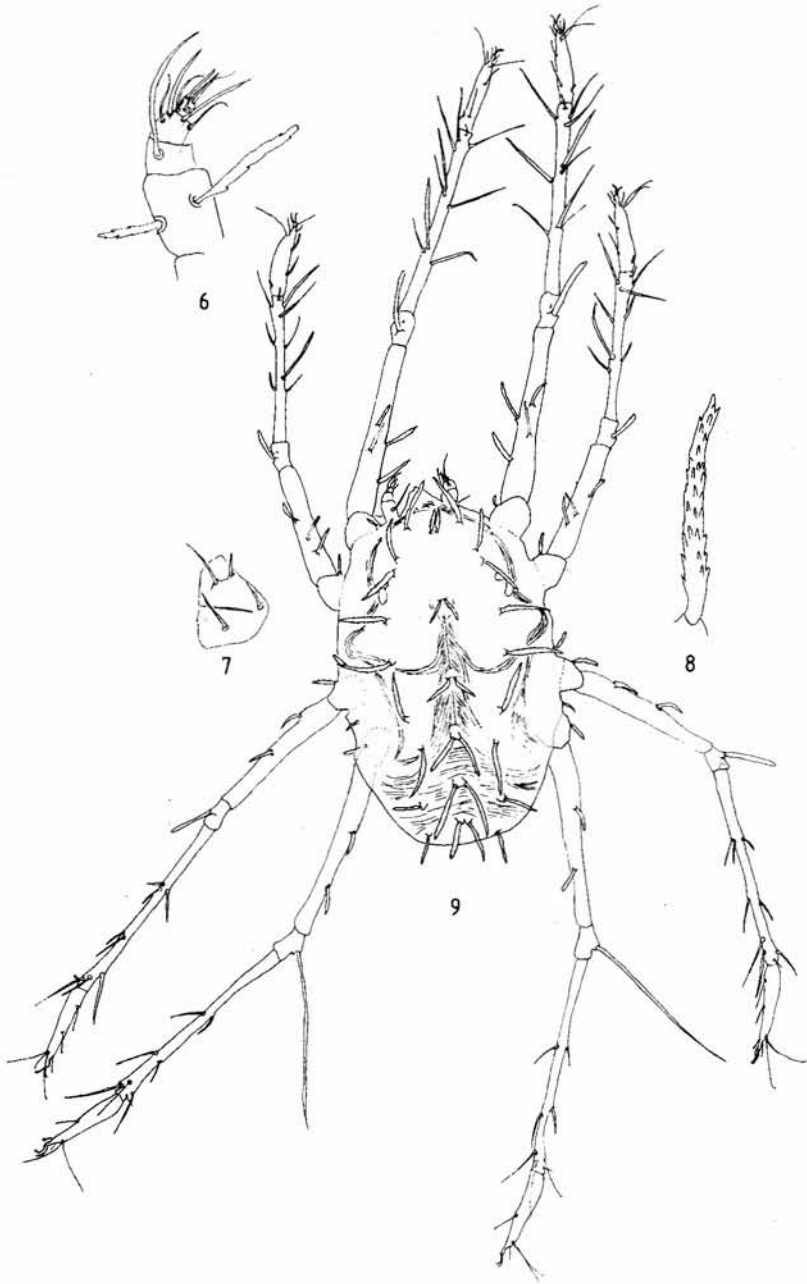
The  $mc_3$  setae are very long and based on stronger tubercles.

Male: Body smaller than in female;  $mc_4$ ,  $mc_5$  and  $mc_6$  reduced in length.  $Mc_3$  the longest *mc* seta. Two solenidia distal on tibia I.

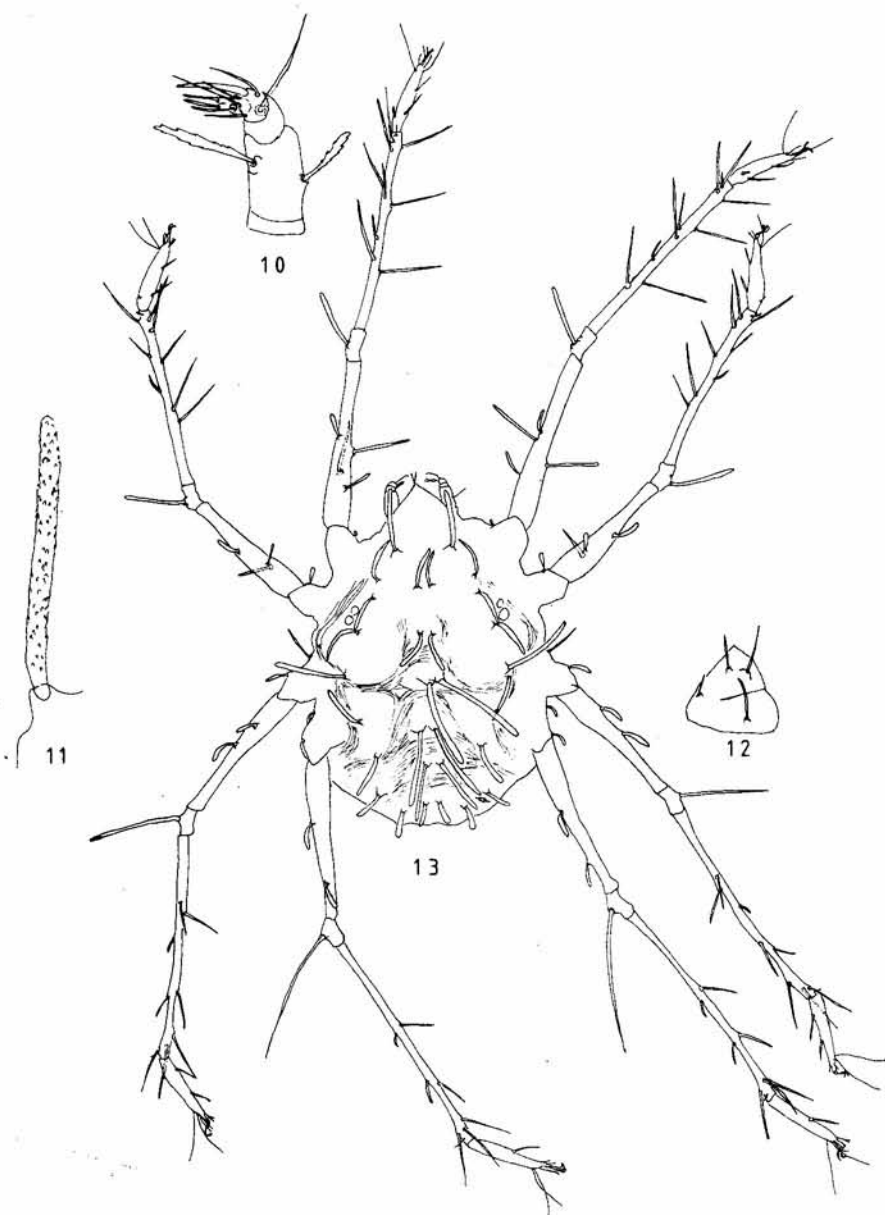
Genu II setae shorter. Genu III more whip-like than in the female. Aedeagus clearly visible.

Deutonymph: Body wider and longer, longer *mc* and somewhat longer genual setae than those of the female.

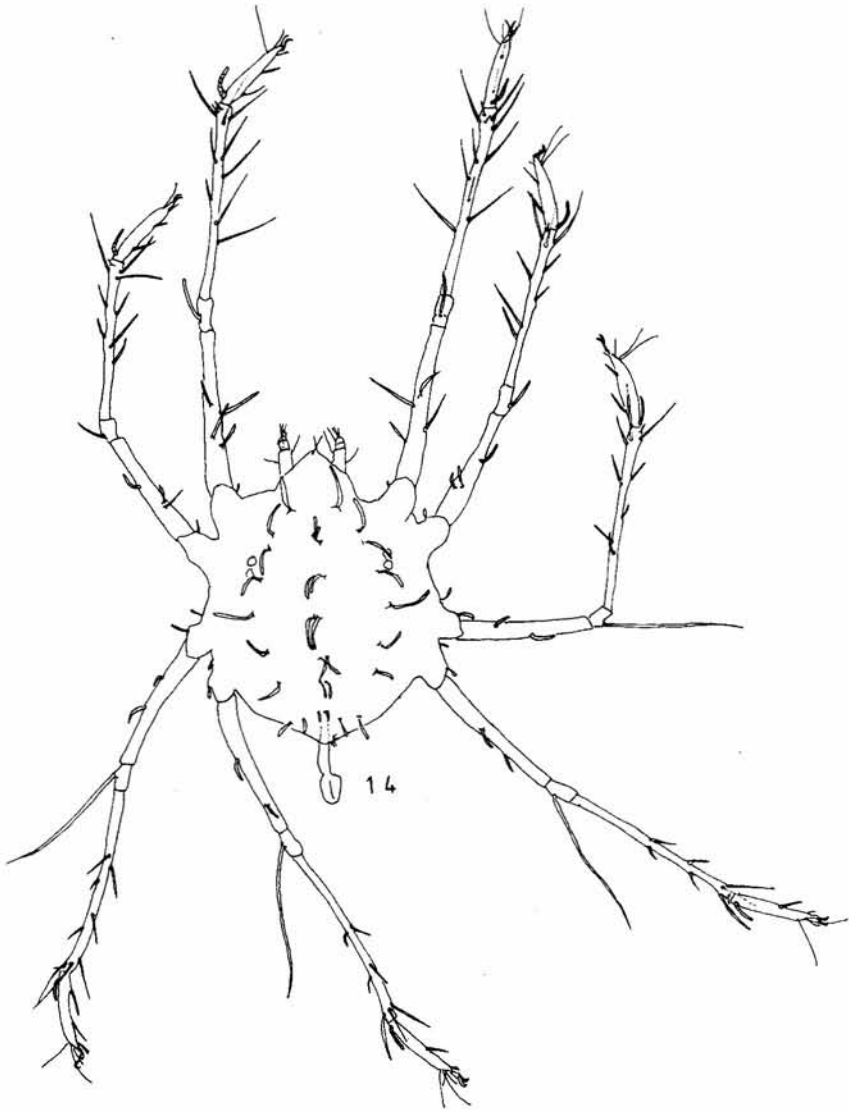
Protonymph: Six *mc* of which  $mc_3$  is clearly the longest *mc* seta. Nine *l*. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 5-5-5-3. On the tarsi only the midventral setae could be observed 1-1-1-1.



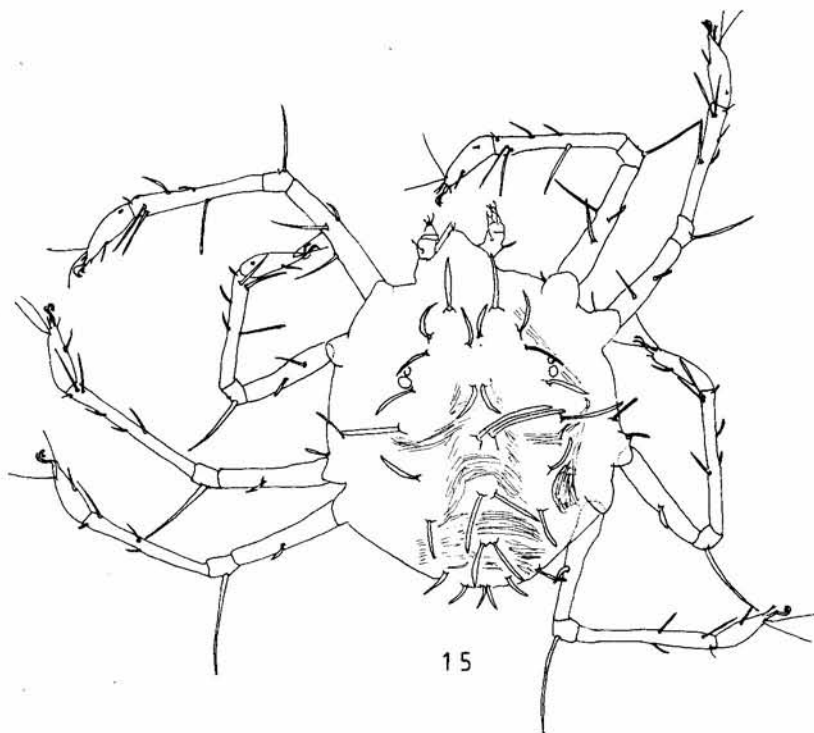
6-9. *Neophyllobius interruptus* spec. nov., ♀. 6; pedipalp; 7, coxae I-II; 8, seta  $I_5$ , 9, dorsal view



10-13. *Neophyllobius dichantii* spec. nov., ♀. 10, pedipalp; 11, seta  $l_5$ ; 12, coxae I-II; 13 dorsal view



14. *Neophyllobius dichantii* spec. nov., ♂. Dorsal view



15. *Neophyllobius dichantii* spec. nov., protonymph. Dorsal view

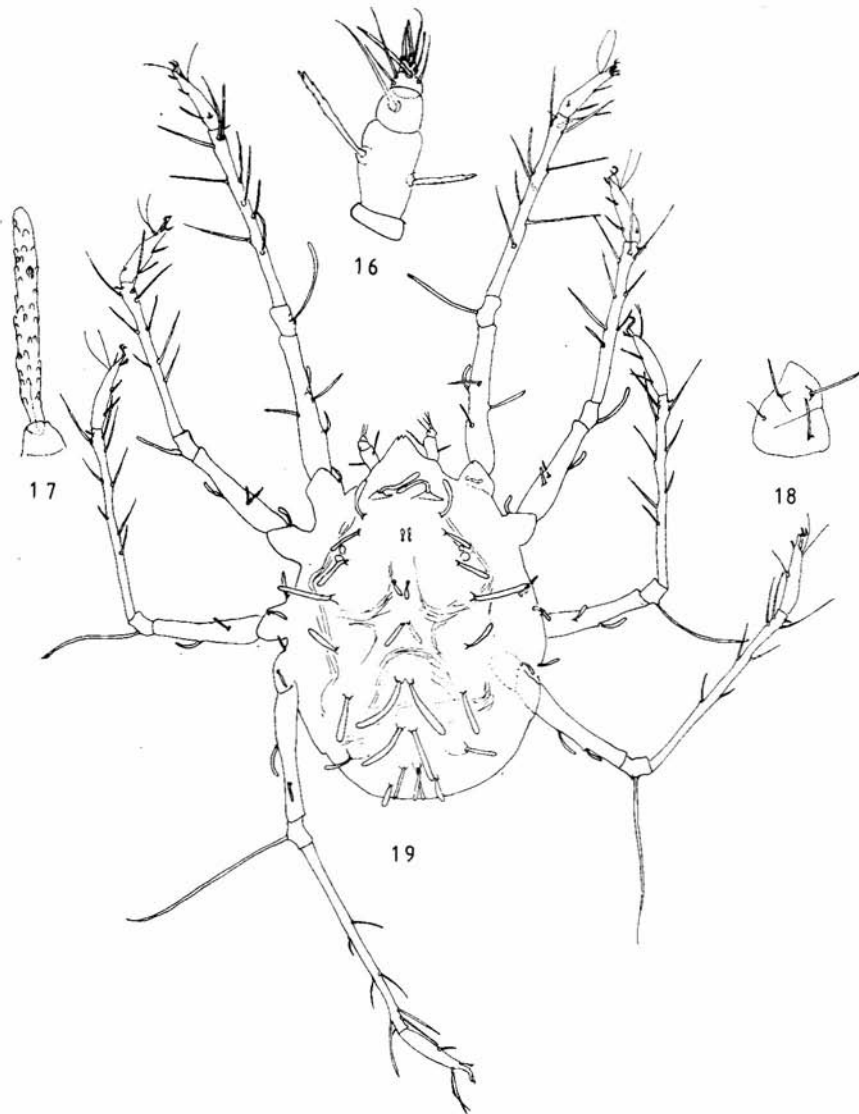
Type material: Holotype ♀, RSA, Chakari pad 15 miles from Gatooma, on *Dichanthium papillosum*, 29.x.1969, W. G. DUNCOMBE (PPRI no. AcY 69/ 521-4140). Paratypes: 1 deutonymph and 1 protonymph in the same slide as holotype; 1 allotype ♂ with the same data and hostplant, in a second slide with the same number.

***Neophyllobius panici* spec. nov.**

(figs. 16-19)

Female: Body length 330  $\mu$ m, width 265  $\mu$ m. Length of legs: 500; 420; 450; 470  $\mu$ m. Six pairs of *mc*: 10; 15; 30; 65; 60; 35  $\mu$ m. Nine pairs of *l*: 50; 40; 35; 65; 60; 35; 45; 30; 25  $\mu$ m. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae





16-19. *Neophyllobius panici* spec. nov., ♀. 16, pedipalp; 17, seta  $l_5$ ; 18, coxae I-II; 19, dorsal view

9-8-8-7, tarsi 10-10-8-7. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

The whip-like setae on genua III and IV are long. The  $mc_3$  is three times longer than  $mc_1$ .

Male: unknown.

Type material: Holotype ♀, RSA, near St-Luciameer from unknown host, 21.viii.1980, E. A. UECKERMANN (PPRI no. 6713-1). Paratypes: 1 ♀, same data and place as holotype: 1 ♀, RSA, Roodeplaat, on *Panicum maximum*, 29.ii.1979, M. K. P. SMITH-MEYER (PPRI no. AcY 81/358-6551).

### *Neophyllobius texanus* MCGREGOR

(figs. 20-24)

*Neophyllobius texanus* MCGREGOR, 1950: 66-67.

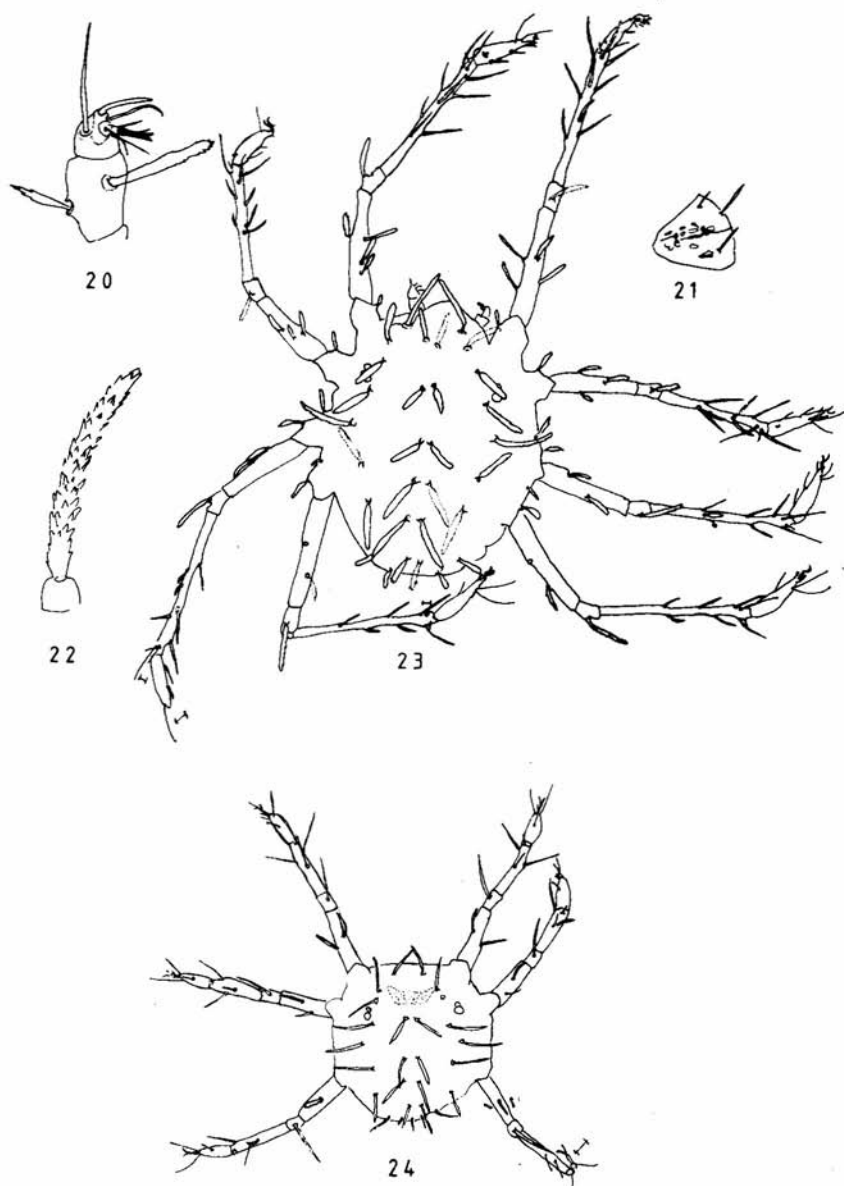
Female: Body length 275 µm, width 225 µm. Length of legs: 420; 390; 405; 435 µm. Six pairs of  $mc$ : 35; 30; 35; 50; 55; 30 µm. Nine pairs of  $l$ : 60; 40; 40; 45; 60; 60; 50; 25; 20 µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-7. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like, tarsus 2 + 2 eupathidia.

The first (most proximal) setae on tibia II and III are longer than the second one. The second and third setae on tibia III are short and solid. The genual setae are rather short, not longer than two times the genu length and do not reach the first proximal setae on the tibiae.

Male: Unknown.

Larva: Five pairs of  $mc$  setae,  $mc_1$  absent. Nine pairs of  $l$  setae. Leg setation: coxae 1-0-0, trochanters 0-0-0, femora 2-2-1, genua 1-1-1, tibiae 3-3-3. Number of setae on tarsi could not be counted. A single seta is present medio-ventral on tarsus I, II and III. The genual setae are not whip-like.

Type material: Holotype ♀, USA, Texas, Tyler, on peach, 1.ix.1937, L. D. CHRISTENSON (USNM no. 1749). Paratype: 1 larva, in the same slide.



20-24. *Neophyllobius texanus* MCGREGOR, ♀. 20, pedipalp; 21, coxae I-II; 22, seta  $l_5$ ; 23, dorsal view; larva; 24, dorsal view

*Neophyllobius muscantribii* spec. nov.

(figs. 25-29)

Female: body length 310  $\mu\text{m}$ , width 260  $\mu\text{m}$ . Length of legs: 430; 395; 420; 485  $\mu\text{m}$ . Six pairs of *mc*: 25; ?; 50; 55; 60; 20  $\mu\text{m}$ . Nine pairs of *l*: 50; 40; 30; 35; 60; 40; 40; 30; 20  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-7. Pedipalp setation: trochanter 0, femur 2, tibia 3 + 1 swordlike, tarsus 2 + 2 eupathidia.

The second seta on femur II is in length between the two other setae on that femur.

Male: Body smaller than female. *Mc*<sub>5</sub> and *mc*<sub>6</sub> reduced in length. Genua setae III and IV more whip-like than those of the female. Two solenidia on the distal end of tibia I.

Deutonymph: Body same size as female, but with longer dorsal setae. Genu setae longer than in the female, with genu seta IV whip-like.

Type material: Holotype ♀, RSA, Oriibi Gorge, on grass, 2.ii.1966, L. ERASMUS (PPRI no. AcY 66/919-3172). Paratypes; allotype ♂, RSA, Lady Grey, on *Muscantribium sorghium*, 20.i.1969, M. K. P. SMITH-MEYER (PPRI no. AcY 69/20-3835); deutonymph, RSA, Soutpan, on grass, 11.iii.1966, L. ERASMUS (PPRI no. AcY 67/53-3260).

*Neophyllobius eragrostidis* spec. nov.

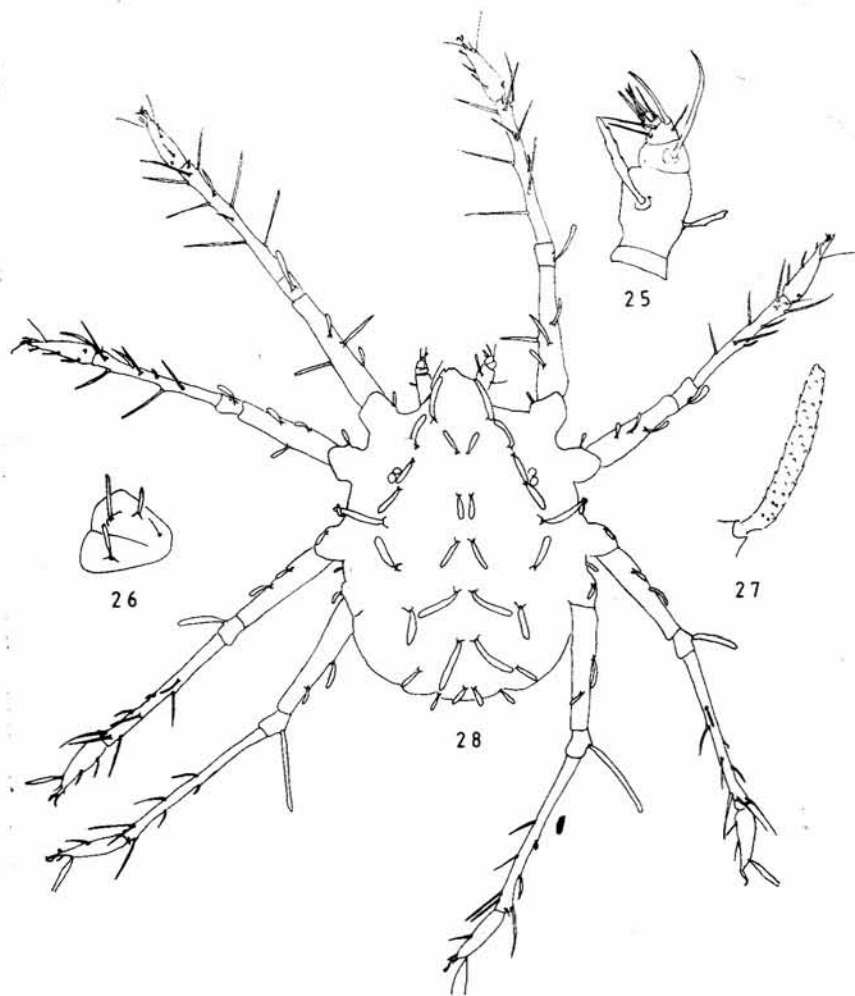
(figs. 30-33)

Female: Body length 345 (320-350)  $\mu\text{m}$ , width 310 (255-330)  $\mu\text{m}$ , Length of legs: 425 (380-450); 375 (345-420); 410 (375-445); 435 (420-490)  $\mu\text{m}$ . Six pairs of *mc*: 30 (25-35); 30 (20-30); 35 (30-55); 45 (45-55); 55(55-60); 25 (20-30)  $\mu\text{m}$ . Nine pairs of *l*: 55 (45-55); 35 (35-40); 35 (30-35); 30 (30-35); 35 (35-60); 40 (35-40); 40 (35-45); 25 (20-30); 20 (20-30)  $\mu\text{m}$ . Leg setation: coxae 3-2-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-7. Pedipalp setation: trochanter 0, femur 1, tibia 3 + 1 sword-like, tarsus 2 + 2 eupathidia.

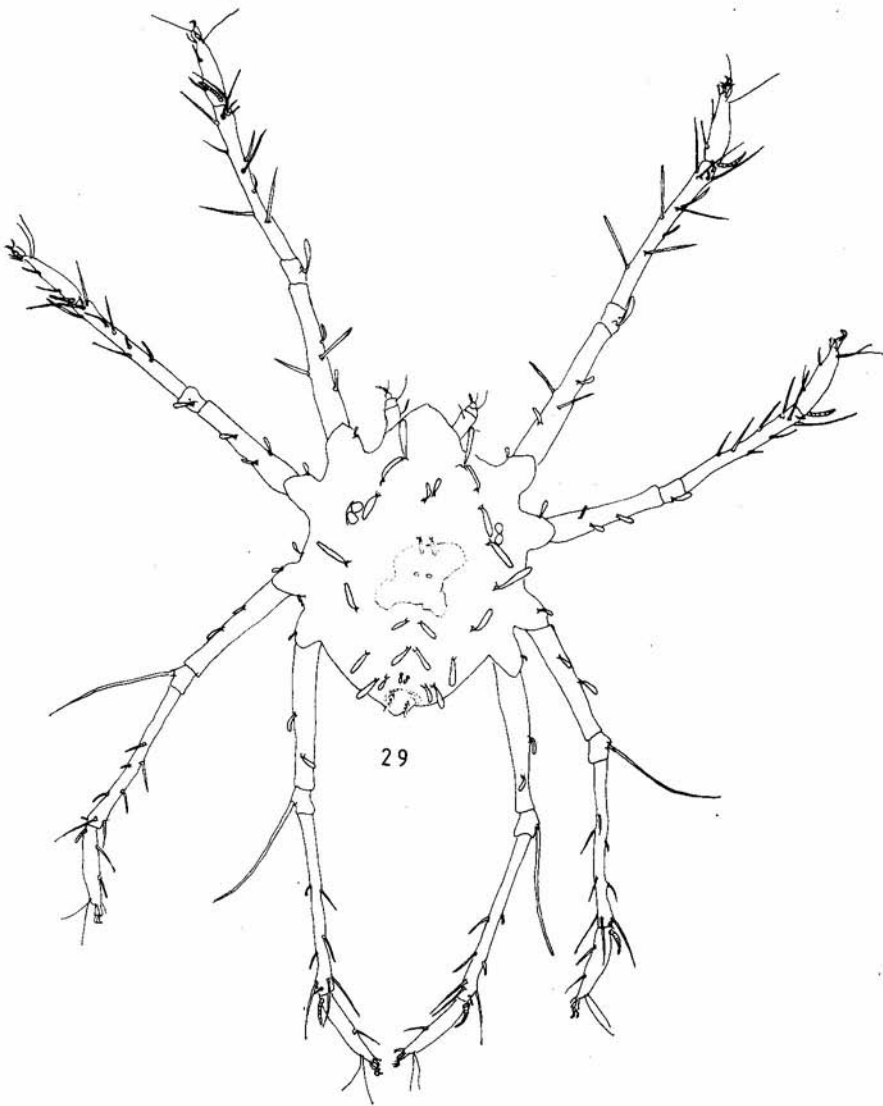
The second seta on femur II is longer than two other setae on that femur.

Male: Unknown.

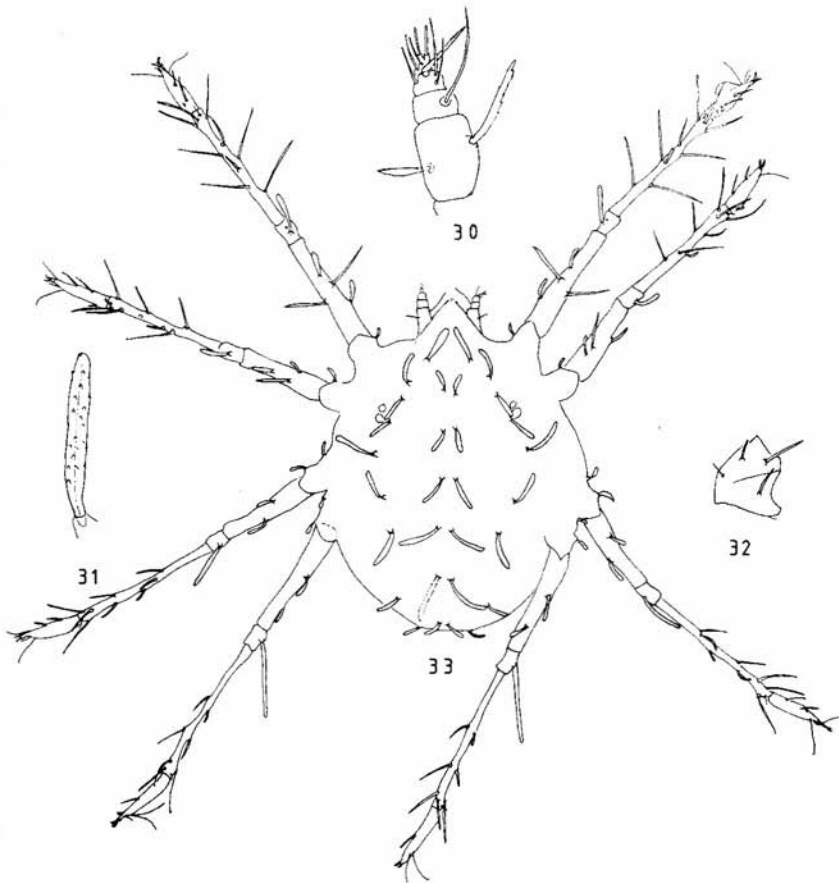
Type material: Holotype ♀, RSA, Roodeplaat, on *Eragrostis* spec., 23.ix.1969, M. K. P. SMITH-MEYER (PPRI no. AcY 69/517-4111). Paraty-



25-28. *Neophyllobius muscantribii* spec. nov., ♀. 25, pedipalp; 26 coxae I-II; 27, seta  $l_5$ ; 28, dorsal view



29. *Neophyllobius muscantribii* spec. nov., ♂. Dorsal view



30-33. *Neophyllobius eragrostidis* spec. nov., ♀. 30, pedipalp; 31 seta I; 32, coxae I-II; 33, dorsal view

pes: 1 ♀, Malawi, Chitedge Res. Stn., on undetermined grass, 10.iv.1970, M. K. P. SMITH-MEYER (PPRI no. AcY 70/549); 1 ♀, RSA, Renaars rivierdam, on *Ziziphus mucronata*, 28.v.1970, M. K. P. SMITH-MEYER (PPRI no. AcY 70/557-4440); 1 ♀, RSA, Heidelberg, on *Aspalathus hispida*, 9.ii.1967, M. K. P. SMITH-MEYER (PPRI no. AcY68/443-3472); 1 ♀ RSA, Rustenburg Nat. Res., on *Setaria lindenbergiana*, 11.xii.1979, E. A. UECKERMANN (PPRI no. AcY 81/363-6568); 1 ♀, RSA, St-Luciameer, on unknown plant, 21.viii.1980, M. K. P. SMITH-MEYER (PPRI no. AcY 80/176-6721).



***Neophyllobius quinquepilis* spec. nov.**

(figs. 34-37)

Female: Body length 280  $\mu\text{m}$ , width 215  $\mu\text{m}$ . Length of legs: 485; 270; 445; 515  $\mu\text{m}$ . Five pairs of *mc*: 20; 20; 55; 60; ?  $\mu\text{m}$ . Nine pairs of *l*: 60; 40; 30; 30; 45; 30; 35; 30; 20  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-7. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like, tarsus 2 + 2 eupathidia.

The *mc*<sub>1</sub> is absent. *Mc*<sub>5</sub> is based on a very solid tubercle. (There is, on one side, an extra seta between *l*<sub>8</sub> and *l*<sub>9</sub>).

Male: Unknown.

Type material: Holotype ♀, USA, IHO, Lancaster, on *Danthonia spicata*, 11.viii.1973, S. E. THEWKE (UMC no. 730811-1).

***Neophyllobius graminicola* spec. nov.**

(figs. 38-41)

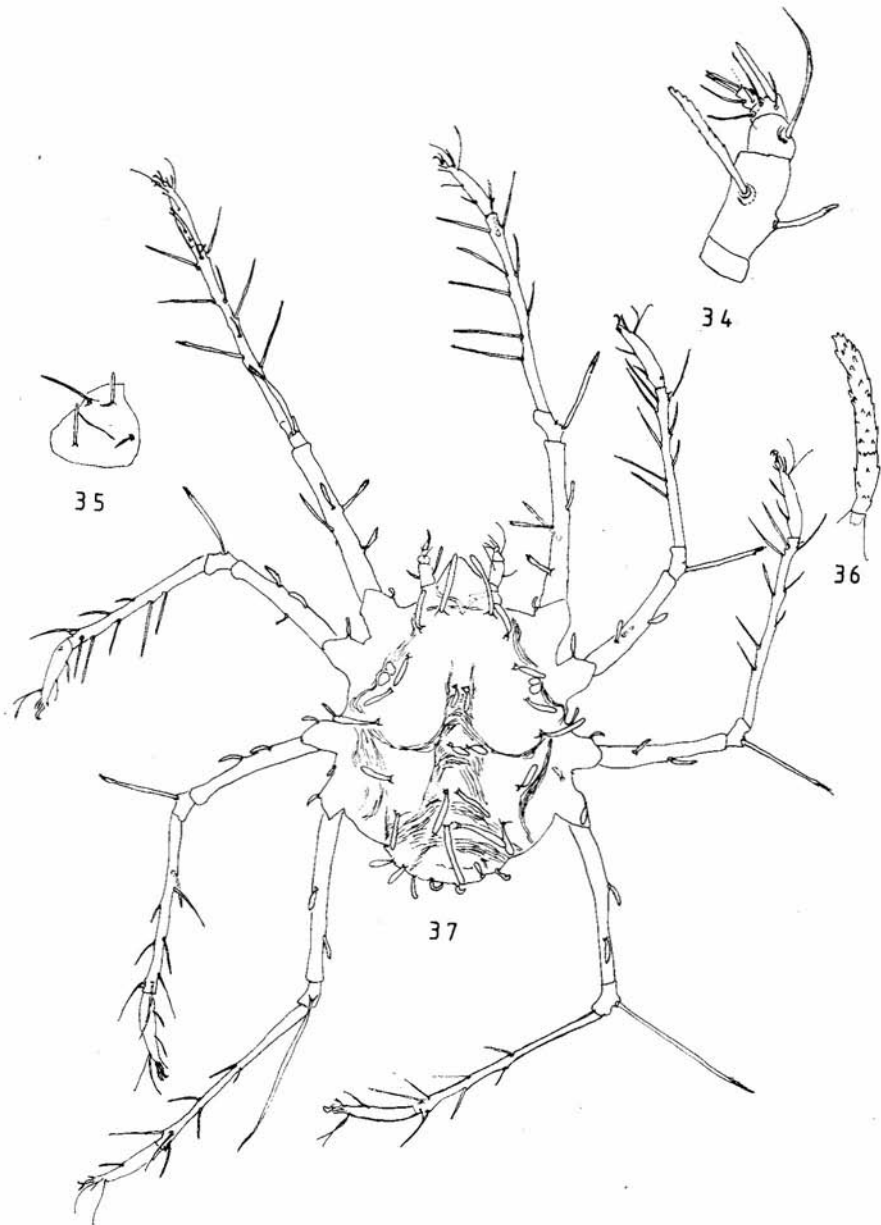
Female: Body length 310  $\mu\text{m}$ , width 225  $\mu\text{m}$ . Length of legs: 500; 410; 560; 460  $\mu\text{m}$ . Six pairs of *mc*: 15; 15; 15; 40; 70; 30  $\mu\text{m}$ . Nine pairs of *l*: 60; 45; 25; 30; 60; 30; 45; 30; 25  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-7. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like, tarsus 2 + 2 eupathidia.

The second seta on femur II is longer than the two other setae on this femur. The *mc*<sub>1</sub>, <sub>2</sub> and <sub>3</sub> are short and equal in length.

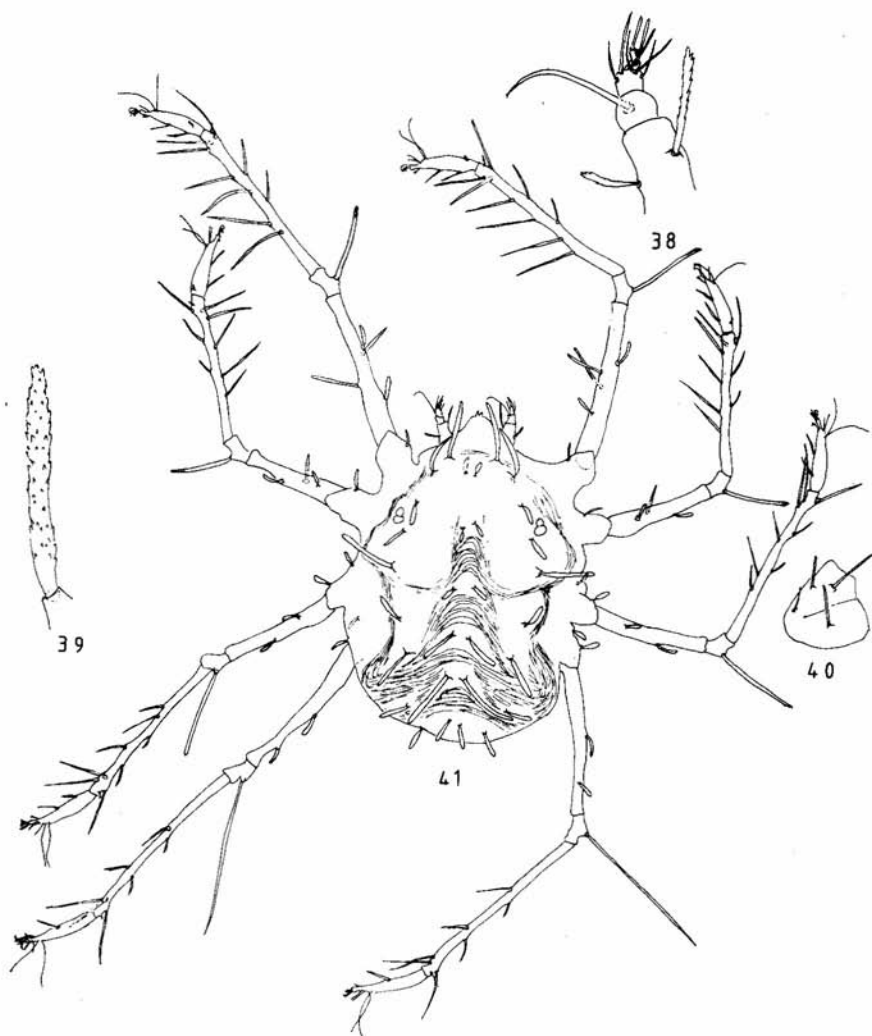
Male: Unknown.

Type material: Holotype ♀, USA, Springfield, "Lake Springfield", on sedge, 8.vii.1971, S. E. THEWKE (UMC no. 720708-1). Paratypes: 1 ♀ same data and place as holotype; 1 ♀, USA, Missouri, clumps of grass, 7.vi.1975, S. E. THEWKE (UMC no. 750607-1).

Remarks. *N. graminicola* resembles *N. quinquepilis* by shape. It differs from the latter species by having six *mc* setae and by the length of the second seta on femur II, which is much shorter in *N. quinquepilis* and longer than the other femur II setae.



34-37. *Neophyllobius quinquepilis* spec. nov., ♀. 34, pedipalp; 35, coxae I-II; 36 seta  $I_5$ ; 37, dorsal view



38-41. *Neophyllobius graminicola* spec. nov., ♀. 38, pedipalp; 39, seta  $I_5$ ; 40, coxae I-II; 41, dorsal view

*Neophyllobius bialagorensis* spec. nov.

(figs. 42-45)

Female: Body length 280  $\mu\text{m}$ , width 250  $\mu\text{m}$ , Length of legs: 415; 370; 390; 430  $\mu\text{m}$ . Six pairs of *mc*: 45; 50; 95; 80; 60; 30  $\mu\text{m}$ . Nine pairs of *l*: 55; 45; 45; 50; 55; 45; 45; 30; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 3-2-1-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-7. Pedipalp setation: trochanter 0, femur 2, tibia 3 + 1 swordlike, tarsus 2 + 2 eupathidia. Tarsi I-III have two setae medio-ventral, while tarsus IV has one. *Mc*<sub>3</sub> is at least two times the length of *mc*<sub>1</sub>.

Male: Unknown.

Type material: Holotype ♀, Poland, near Sztum, "Biała Góra" reserve, from a sample of soil, litter and plants, typical for lowland-steppe vegetation, with *Silene otitis*, *Koeleria glauca* and *Scabiosa ochroleuca*, 11.x.1975, J. BANASZAK (UAM no. 0904/12).

*Neophyllobius vandebundi* spec. nov.

(figs. 46-49)

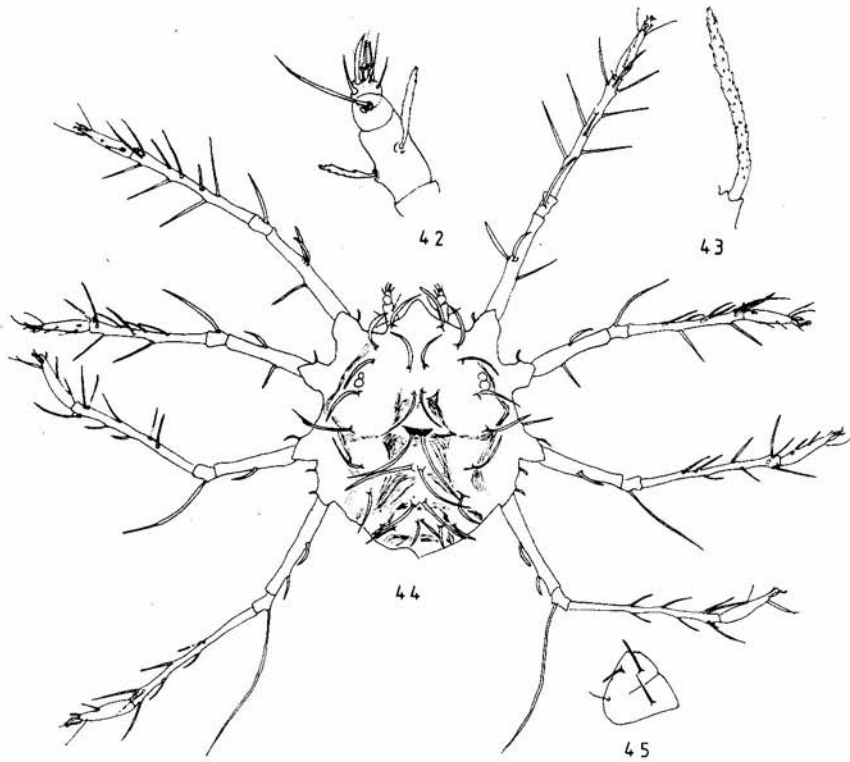
Female: Body length 325  $\mu\text{m}$ , width 280  $\mu\text{m}$ . Length of legs: 400; 350; 370; 420  $\mu\text{m}$ . Six pairs of *mc*: 45; 55; 85; 85; 85; 30  $\mu\text{m}$ . Nine pairs of *l*: 45; 45; 45; 65; 50; 45; 30; 25  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 3-2-1-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-7. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 swordlike, tarsus 2 + 2 eupathidia.

The *mc*<sub>3</sub>, *mc*<sub>4</sub>, and *mc*<sub>5</sub> are equal in length. Tarsi I-III have two setae medio-ventral, while tarsus IV has one.

Male: Unknown.

Type material: Holotype ♀, The Netherlands, Ouddorp, Westduinen, on the top of a dune, on the soil, under *Corynephorus* spec., 16.vi.1966, C. F. VAN DE BUND (ZMA).

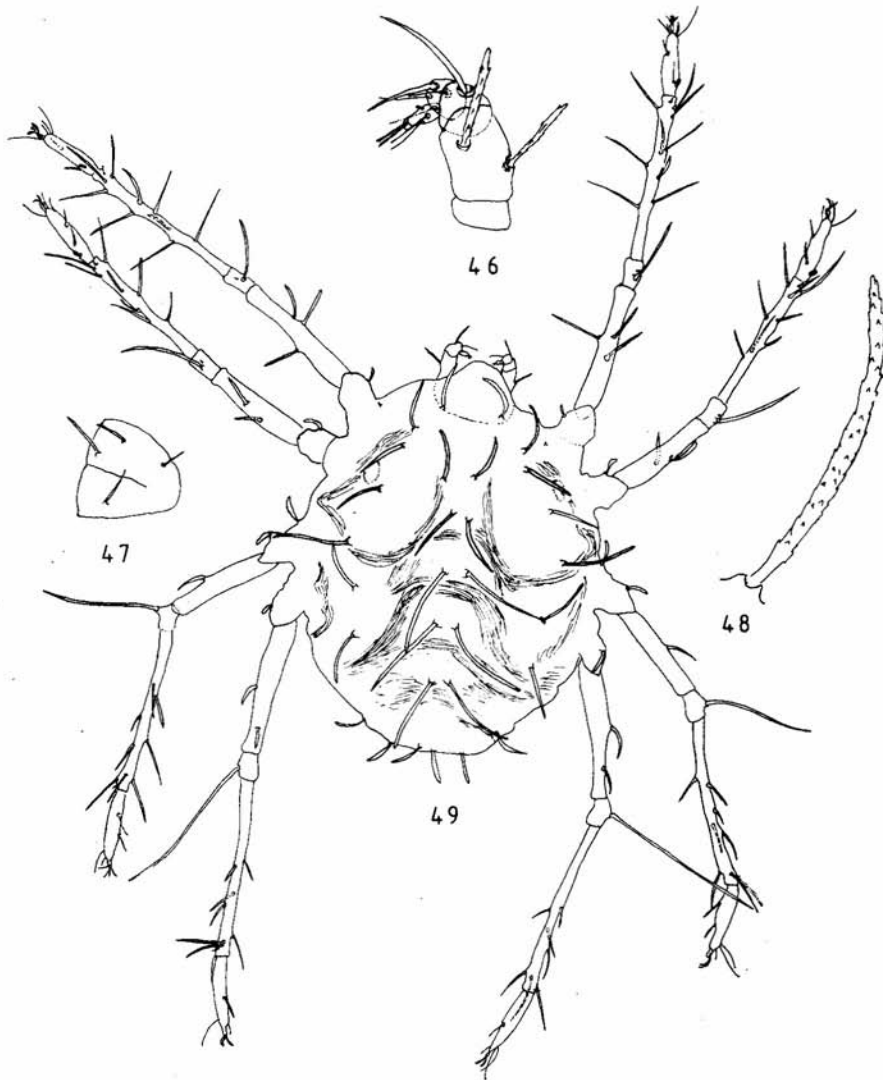
Remarks. *N. vandebundi* resembles *N. bialagorensis* in shape. It differs from the latter species by having the *mc*<sub>5</sub> as long as *mc*<sub>4</sub> and *mc*<sub>3</sub>, while *N. bialagorensis* has *mc*<sub>5</sub> shorter than *mc*<sub>4</sub> and much shorter than *mc*<sub>3</sub>. This species is named after Mr C. F. VAN DE BUND.



42-45. *Neophyllobius bialagorensis* spec. nov., ♀. 42, pedipalp; 43, seta  $l_9$ ; 44, dorsal view; 45, coxae I-II

- 13. Femur II with four setae . . . . . *N. quadrisetosus*  
     Femur II with three setae . . . . . 14
- 14. Femur III with three setae . . . . . 15  
     Femur III with two setae . . . . . 23
- 15. Femur IV with three setae . . . . . 16  
     Femur IV with two setae . . . . . 17
- 16.  $L_1$  setae long, at least two times  $l_9$ ; two most proximal setae on femur III on one level . . . . . *N. ueckermanni*  
      $L_1$  setae normal, shorter than two times  $l_9$ ; two most proximal setae on femur III not on one level . . . . . *N. sanctaeluciae*
- 17. All *mc* setae longer than interval to setae next behind . . . 18  
     All *mc* setae just reach or shorter than interval to setae next behind . . . . . 21

(continued on p. 83)



46-49. *Neophyllobius vandebundi* spec. nov., ♀. 46, pedipalp; 47, coxae I-II; 48, seta  $l_5$ ; 49, dorsal view

18.  $Mc_3$  longest  $mc$  setae . . . . . *N. trisetosus*  
 $Mc_4$  longest  $mc$  setae . . . . . 19
19.  $Mc_3$  longer than  $mc_2$ ; coxae setae different in length . . . . . 20  
 $Mc_3$  as long as  $mc_2$ ; coxae setae equal in length . . . . .  
. . . . . *N. montanus*
20. Genu II and III setae as long as genu; palps small . . . . .  
. . . . . *N. capparidis*  
Genu II and III setae longer than genu; palps thicker . . . . .  
. . . . . *N. graminum*
21. Some  $mc$  setae shorter than interval to setae next behind . . . 22  
All  $mc$  setae shorter than interval to setae next behind . . . . .  
. . . . . *N. bequartiodendri*
22.  $Mc_2$  and  $mc_3$  shorter than interval to setae next behind; third and  
fourth seta on femur I equal in length; distal seta on palpfemur at  
least two times longer than the proximal seta; coxa I setae nearly  
equal in length . . . . . *N. gigantorum*  
 $Mc_2$  shorter and  $mc_3$  longer than interval to setae next behind; third  
seta on femur I much shorter than the fourth one; distal seta on  
palpfemur not two times longer than the proximal seta; coxa I setae  
much different in length . . . . . *N. hypoleanae*  
(continued on p. 97)

***Neophyllobius quadrisetosus* DE LEON**

(figs. 50-53)

*Neophyllobius quadrisetosus* DE LEON, 1958: 175-179.

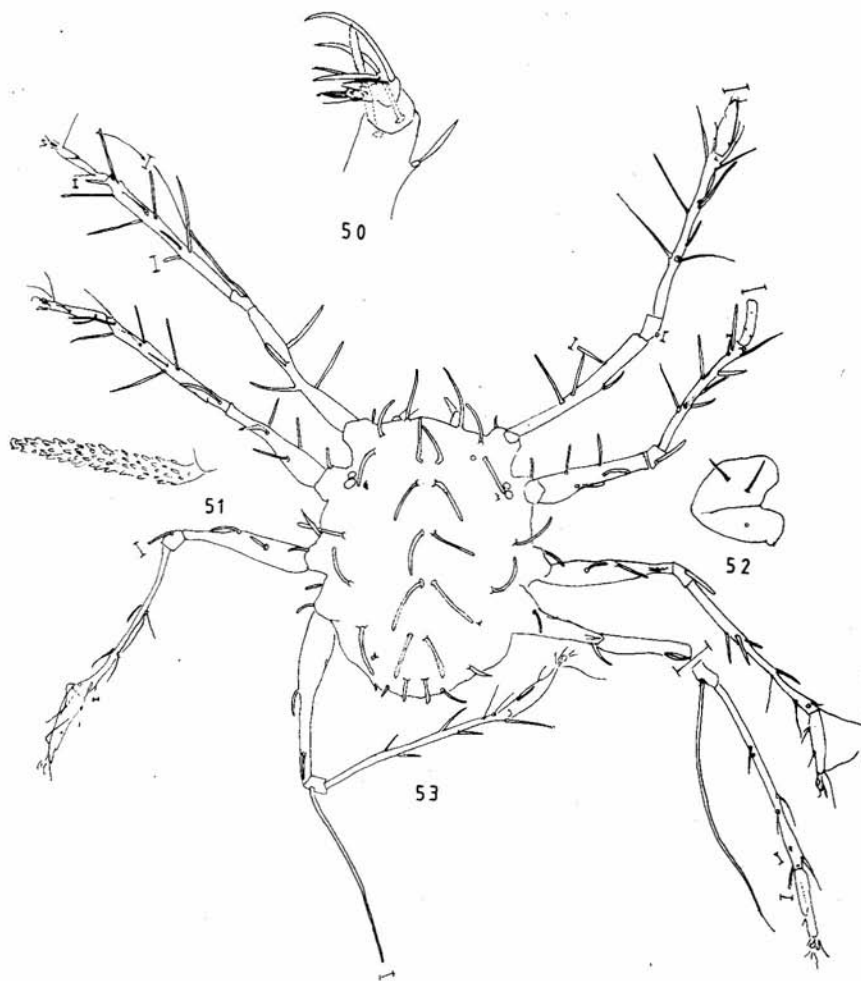
Female: Body length 320  $\mu$ m, width 235  $\mu$ m. Length of legs: 505; 405; 470; 565  $\mu$ m. Six pairs of  $mc$ : 45; 45; 45; 60\65; 45; 25  $\mu$ m. Nine pairs of  $l$ : 60\65; 45; 45; ?; 55; 45; 55; 30; 30  $\mu$ m. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-4-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like, tarsus 2 + 2 eupathidia.

This species is characterized in having four setae on femur II. The  $mc_4$  setae are difficult to measure, because of the gut contents, which form a white stripe.

Male: Unknown.

Type material: holotype ♀, Mexico, Guaymas, Son. intercepted at Nogales, in soil from cactus, 7.xi.1956, NOEL (USNM no. 2465).





50-53. *Neophyllobius quadrisetosus* DE LEON, ♀. 50, pedipalp; 51, seta  $I_5$ ; 52, coxae I-II; 53, dorsal view

*Neophyllobius ueckermanni* spec. nov.

(figs. 54-57)

Female: Body length 365  $\mu\text{m}$ , width 310  $\mu\text{m}$ . Length of legs: 640; 560; 595; 640  $\mu\text{m}$ . Six pairs of *mc*: 60; 60; 55; 75; 70; 40  $\mu\text{m}$ . Nine pairs of *l*: 80; 60; 60; 55; 75; 60; 60; 50; 35  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-3-3, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

The three setae on femur IV are characteristic for this species. The two most marginal coxae I setae are both very long. The  $l_1$  is the longest dorsal seta.

Male: Unknown.

Type material: Holotype ♀, RSA, 25 km from Badplaas (Chrissiemeerpad), on unknown host, 19.viii.1980, E. A. UECKERMANN (PPRI no. 6685).

This species is named after Dr. E. A. UECKERMANN.

*Neophyllobius sanctaeluciae* spec. nov.

(figs. 58-61)

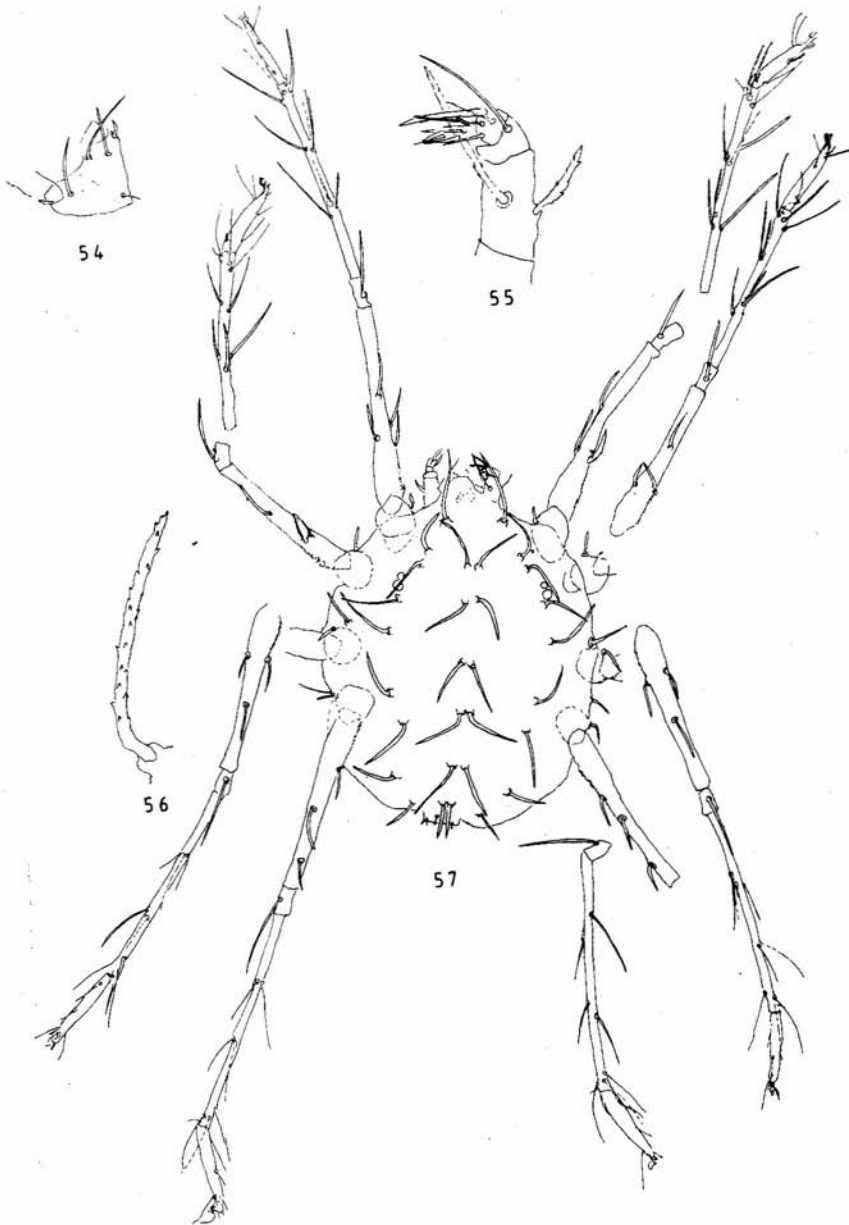
Female: Body length 290 (295)  $\mu\text{m}$ , width 250 (235)  $\mu\text{m}$ . Length of legs: 515 (560); 390 (420); 460 (495); 490 (575)  $\mu\text{m}$ . Six pairs of *mc*: 35 (40); 35 (40); 35 (40); 45 (55); 40 (35); 20 (30)  $\mu\text{m}$ . Nine pairs of *l*: 40 (45); 40 (35); 30 (35); 30 (35); 40 (55); 30 (35); 35 (35); 25 (30); 25 (25)  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-3-3, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

The two most marginal coxa I setae 1b and 1c are very different in length.

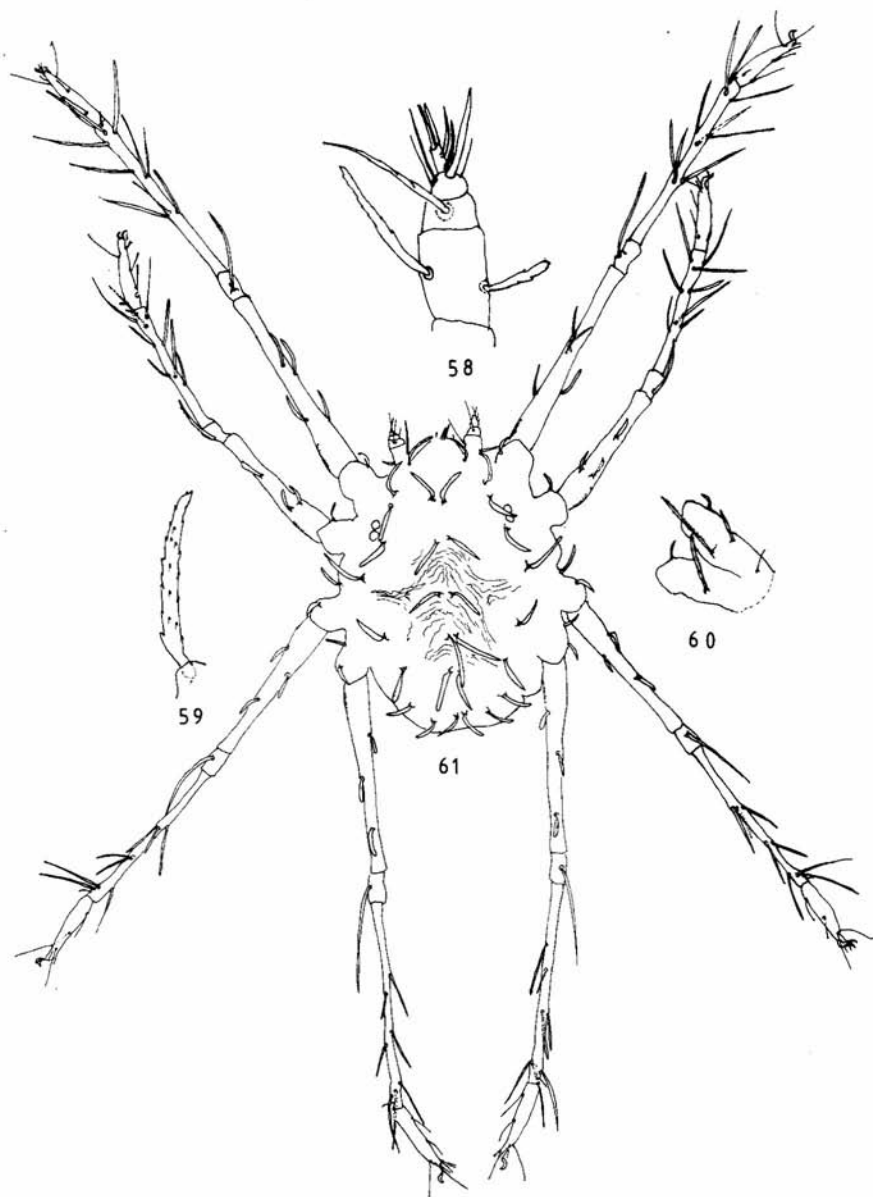
Male: Unknown.

Type material: Holotype ♀, RSA, near St. Luciameer, on wild shrub, 21.viii.1980, G. PETTY (PPRI no 6718). Paratype: 1 ♀, on second slide with the same data as for the holotype.

This species differs from *N. ueckermanni* by the setae on coxa I and the shorter dorsal setae.



54-57. *Neophyllobius ueckermanni* spec. nov., ♀. 54, coxae I-II; 55, pedipalp; 56, seta  $l_5$ ; 57, dorsal view



58-61. *Neophyllobius sanctaeluciae* spec. nov., ♀. 58, pedipalp; 59, seta I; 60, coxae I-II, 61, dorsal view

*Neophyllobius trisetosus* DE LEON

(figs. 62-66)

*Neophyllobius trisetosus* DE LEON, 1958: 175-176/179-180.

Female: Body length 310  $\mu\text{m}$ , width 240  $\mu\text{m}$ . Length of legs: 485; 420; 485; 515  $\mu\text{m}$ . Six pairs of *mc*: 80; 65; 80; 75; 60; 40  $\mu\text{m}$ . Nine pairs of *l*: 65/75; 60; 55; 55; 80; 55; 50; 40; 40  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-3-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

The dorsal setae are strongly dentated.

Male: Body smaller.  $Mc_5$  and  $6$  reduced in length. A second solenidion on the distal end of the only present tibia (tibia I), could not be observed.

Protonymph: Not examined.

Larva: Not examined.

Material examined: Holotype ♀, Mexico, Oax., Oaxaca, on *Quercus* spec., 1.ii.1957, D. DE LEON (MCZ 1517-2). Paratype; allotype ♂, in the same slide as the holotype.

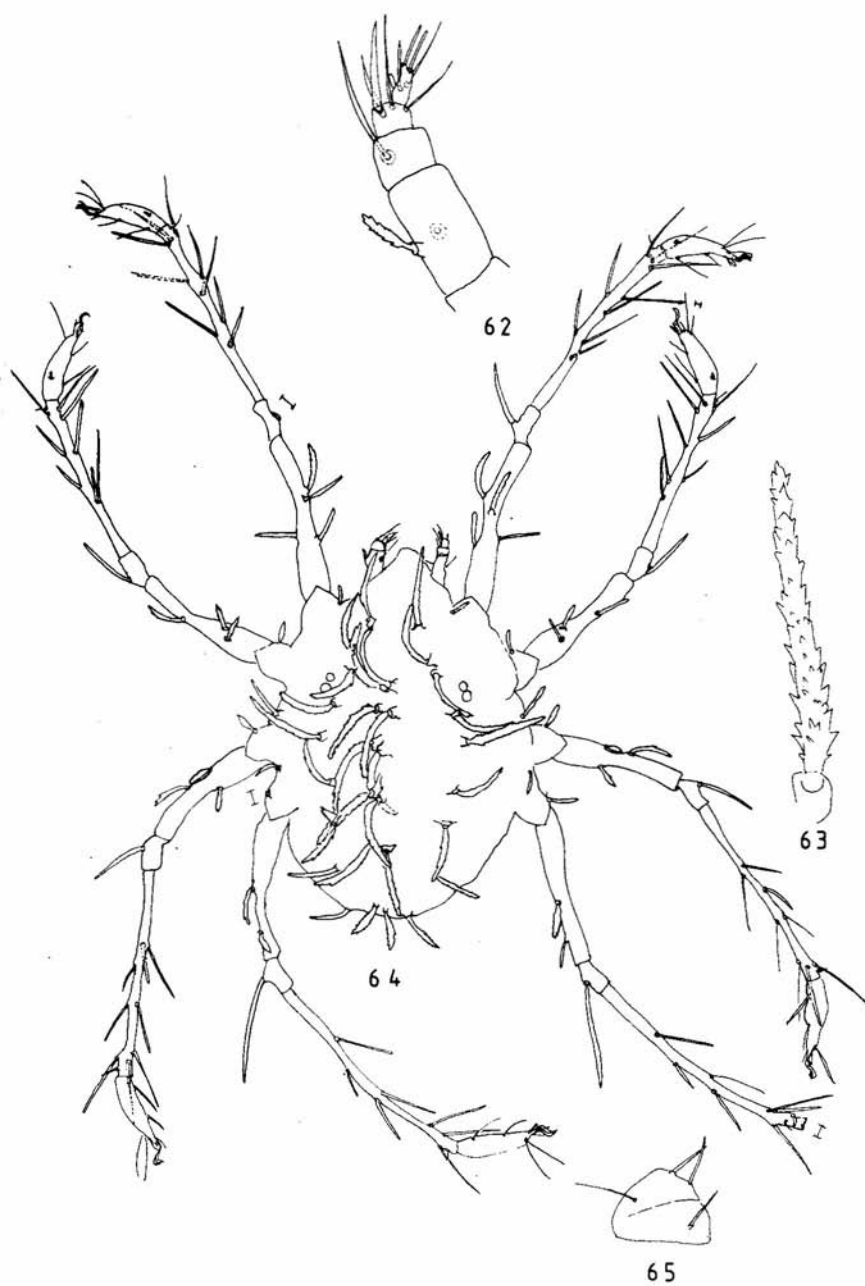
Other published material: Paratypes; 1 ♀ and 1 ♂, Mexico, Oax., Siete Cabrillas, other data as for the holotype; 1 ♀, 1 ♂ and 1 protonymph, Mexico, Oax., Tamazulapan, from unknown tree, 1.ii.1957, D. DE LEON. Additional specimens were collected, Mexico, near Quiroga, Mich.; Sta. Maria del Oro, Nay.; and Ixtlan del Rio, Nay.

*Neophyllobius montanus* spec. nov.

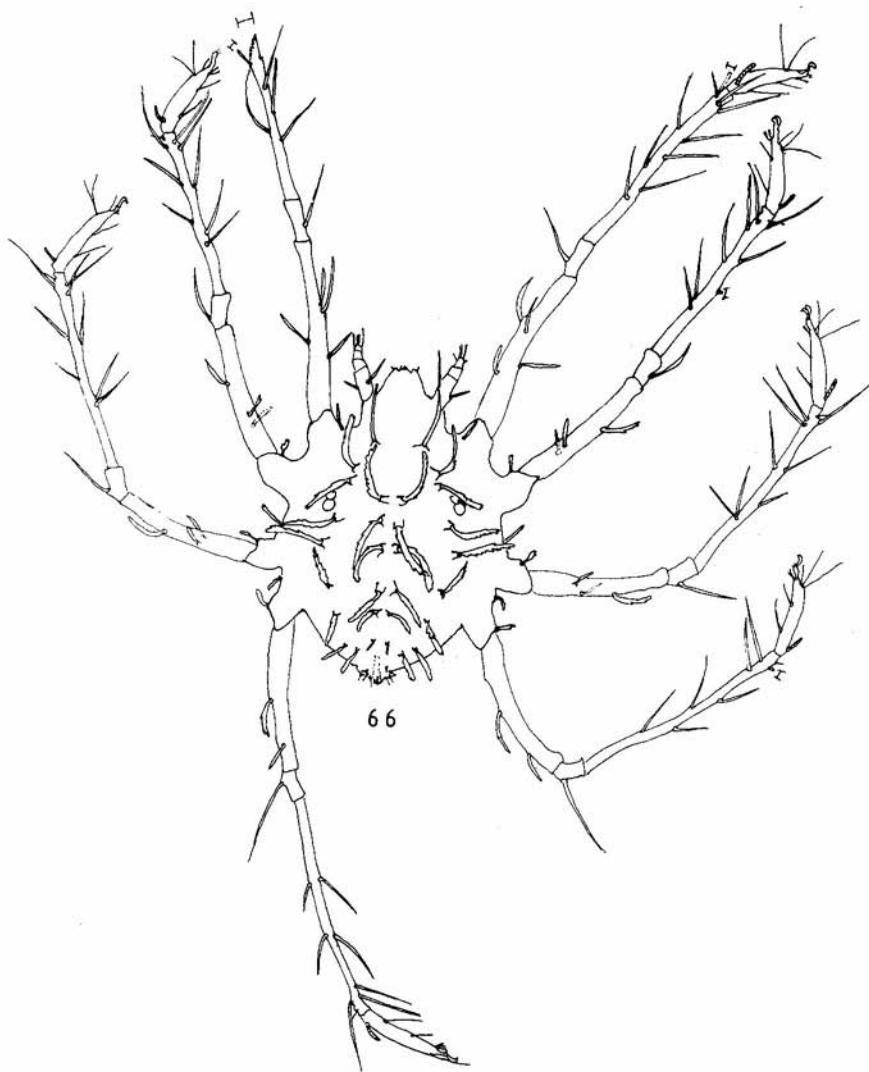
(figs. 67-70)

Female: Body length 335  $\mu\text{m}$ , width 250  $\mu\text{m}$ . Length of legs: 560; 505; 525; 590  $\mu\text{m}$ . Six pairs of *mc*: 45; 45; 40; 75; 70; 20  $\mu\text{m}$ . Nine pairs of *l*: 60; 55; 45; 50; 70; 50; 50; 50; 25  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-3-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

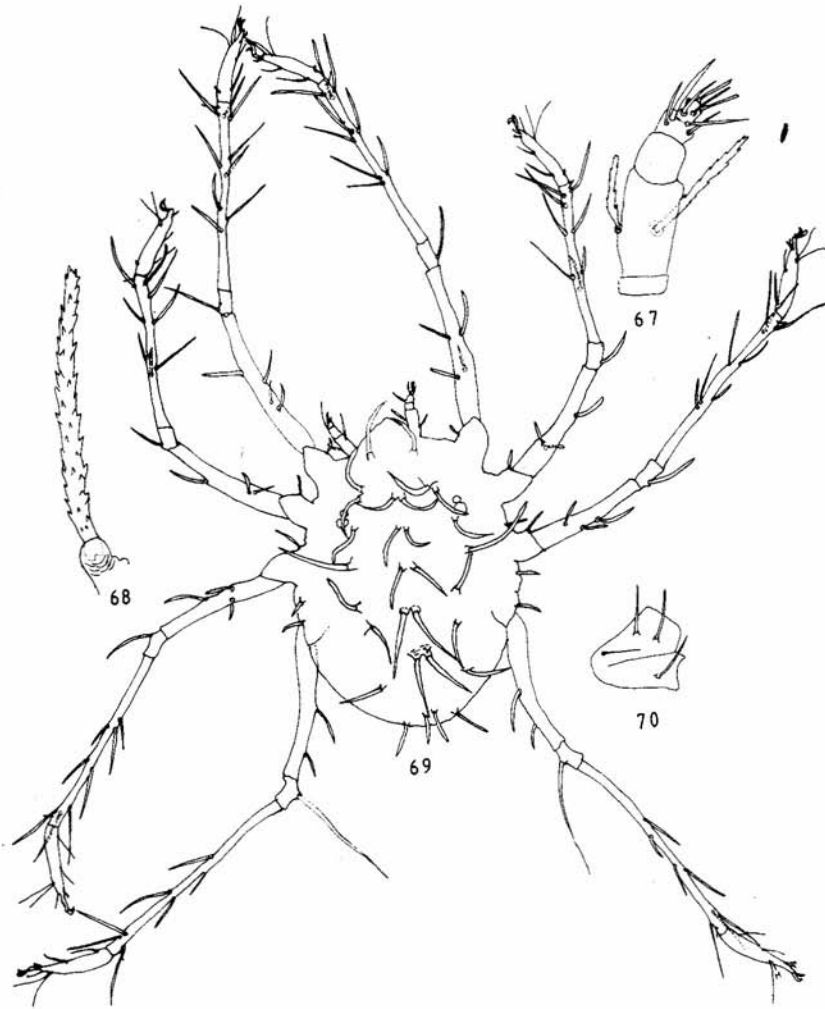


62-65. *Neophyllobius trisetosus* DE LEON, ♀. 62, pedipalp; 63, seta I<sub>5</sub>; 64, dorsal view; 65, coxae I-II



66. *Neophyllobius trisetosus* DE LEON, ♂. Dorsal view





67-70. *Neophyllobius montanus* spec. nov., ♀. 67, pedipalp; 68, seta  $I_5$ ; 69, dorsal view; 70, coxae I-II

Type material: Holotype ♀, RSA, Giants-Castle, from unknown host, 2.ii.1982, M. K. P. MEYER (PPRI 6914).

***Neophyllobius capparidis* spec. nov.**

(figs. 71-74)

Female: Body length 280 µm, width 235 µm. Length of legs: 560; 500; 530; 560 µm. Six pairs of *mc*: 60; 40; 60; 85; 70; 35 µm. Nine pairs of *l*: 70; 60; 55; 55; 80; 60; 50; 40; 30 µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-3-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia ? + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Type material: Holotype ♀, RSA, Addo Nat. Park, on *Capparis ciltifolia*, 11.i.1965, G. v. D. MERWE (PPRI AcY 67/549-149).

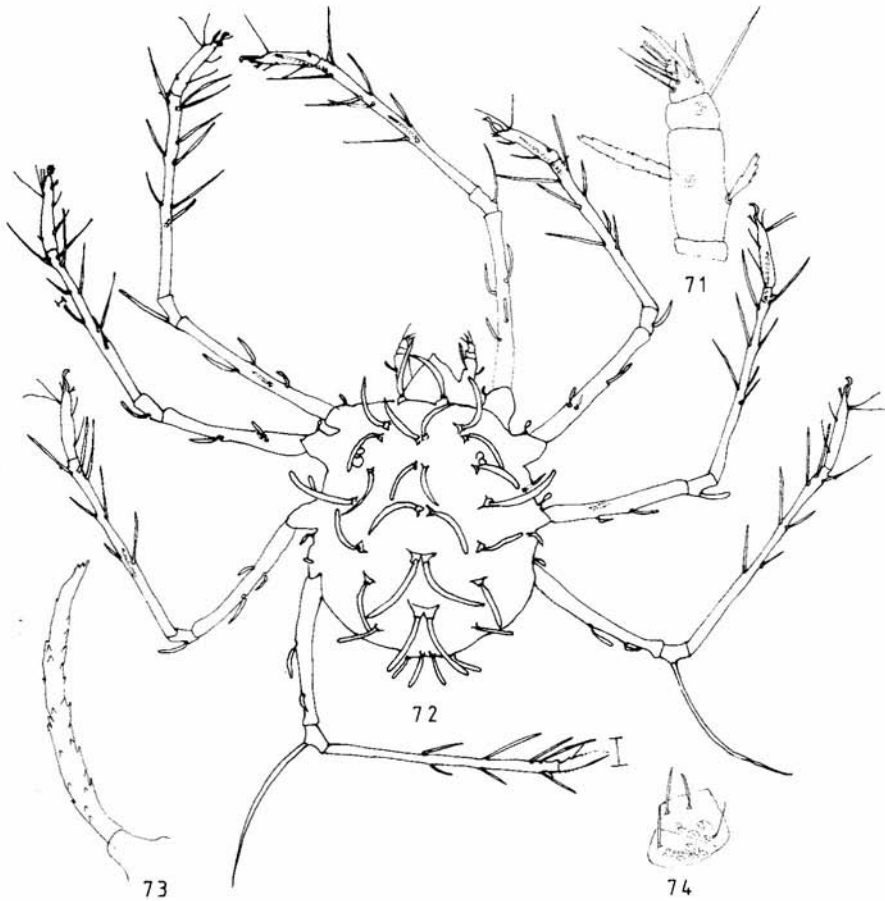
***Neophyllobius graminum* spec. nov.**

(figs. 75-79)

Female: Body length 290(295-360) µm, width 255(240-320) µm. Length of legs: 545(515-585); 485(445-530); 530(475-560); 570(540-625) µm. Six pairs of *mc*: 55(45-60); 45(40-55); 60(45-70); 85(70-95); 80(70-85); 40(35-45) µm. Nine pairs of *l*: 65(50-70); 65(50-70); 50(45-60); 55(45-60); 85(75-95); 55(45-60); 55(45-70); 45(40-55); 35(35-40) µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

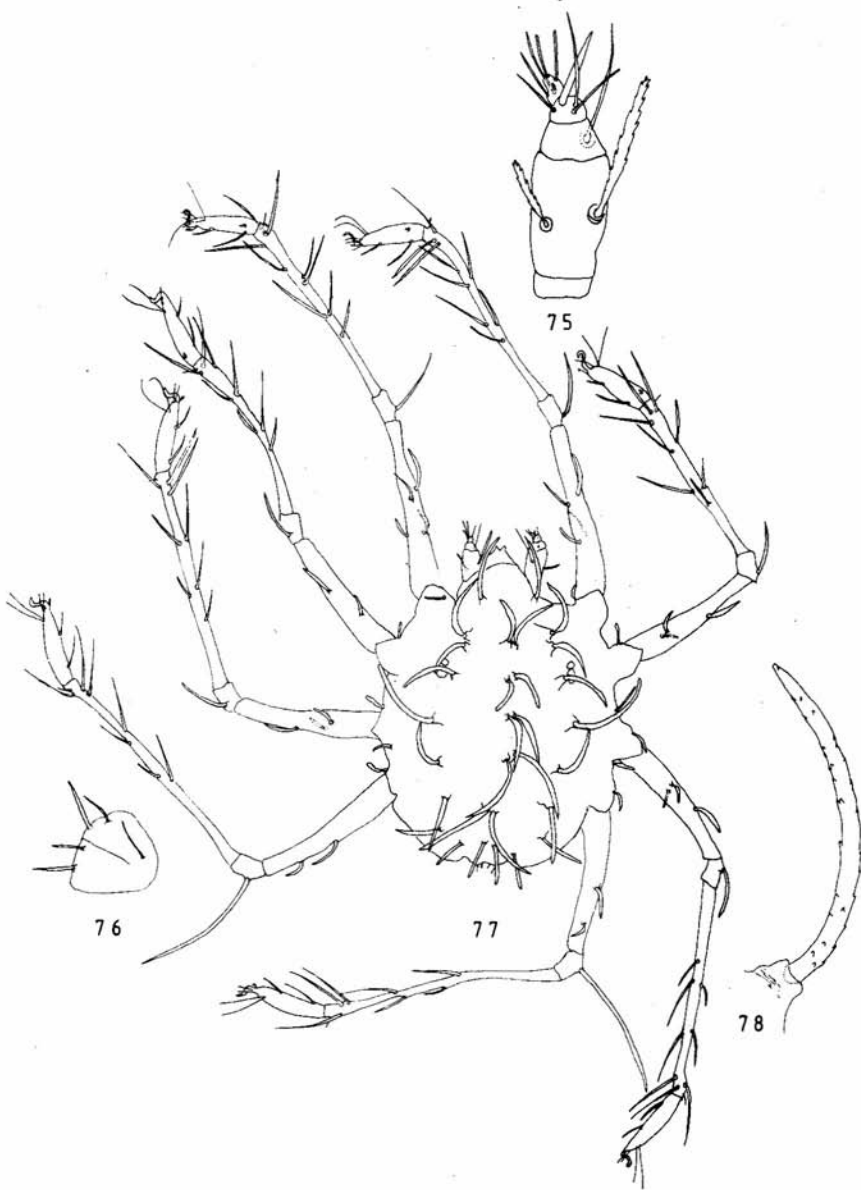
Male: Body smaller, *mc*<sub>6</sub> reduced in length. Two solenidia on the distal end of tibia I.

Type material: Holotype ♀, RSA, Die Kelders, on *Phylica nigrita*, 12.II.1969, M. K. P. MEYER (PPRI AcY-68/442-3494); Paratypes: 1 ♀, RSA, near Uitstraalmond, on *Metalasia muricata*, 10.III.1983, S. CRUICKSHARK (PPRI 7174); 2 ♀, RSA, Botriviervelei, on *Stoebe plumosa*,

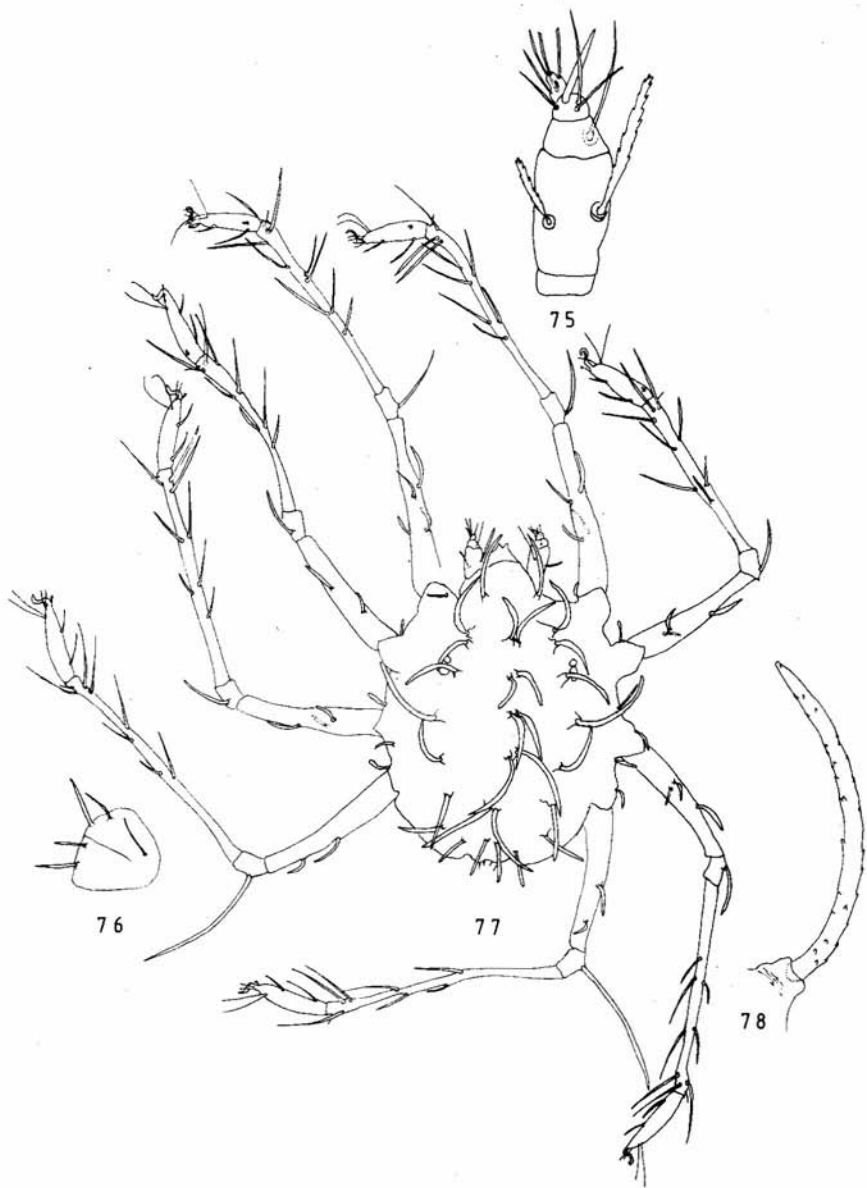


71-74. *Neophyllobius capparidis* spec. nov., ♀. 71, pedipalp; 72, dorsal view; 73, seta  $l_5$ ; 74, coxae I-II

6.II.1967, W. MARAIS (PPRI AcY 68/542-3432); 1 ♀, RSA, Chiredzi-rivier, 5 M.v. Chiredzi, on *Securinga virosa*, 4.XI.1969, M. K. P. MEYER (PPRI AcY 69/623-4211); 2 ♀, RSA, Botanical garden, Bettijsbaai, on *Berzelia lanuginosa*, 2.III.1976, L. C. JORDAAN (PPRI-AcY 76/189-F 24); 3 ♀, RSA, Fort Grey, Bosreservaat (Oos-Londen), on *Hippobromus pauciflorus*, 12.II.1974, M. K. P. MEYER (PPRI AcY 74/393-5527); 1 ♀, and 1 ♂, RSA, Helshoogte, on *Cliffortia* spec., 1.II.1967, W. MARAIS (PPRI AcY 68/460).



75-78. *Neophyllobius graminum* spec. nov., ♀. 75, pedipalp; 76, coxae I-II; 77, dorsal view; 78, seta  $I_5$



75-78. *Neophyllobius graminum* spec. nov., ♀. 75, pedipalp; 76, coxae I-II; 77, dorsal view; 78, seta  $I_5$



79. *Neophyllobius graminum* spec. nov., ♂. Dorsal view

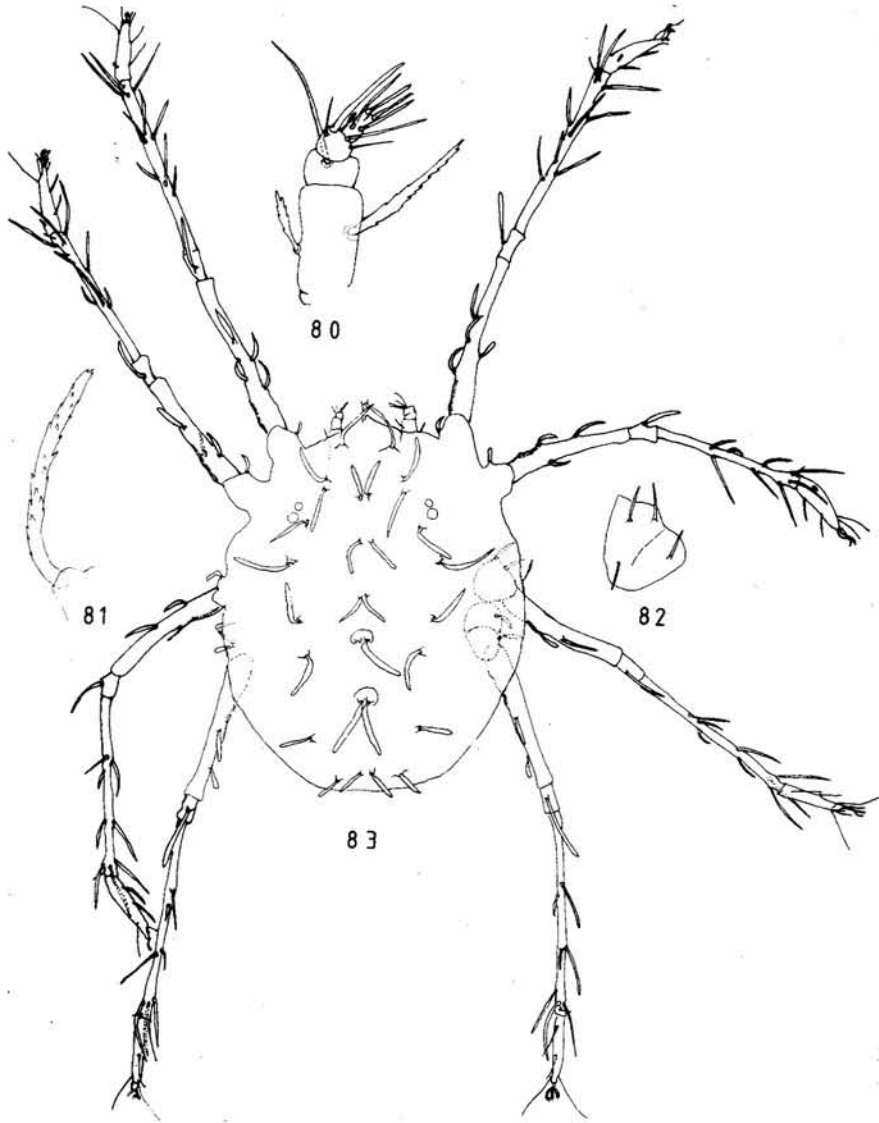
***Neophyllobius bequartiodendri* spec. nov.**

(figs. 80-83)

Female: Body length 350(325)  $\mu\text{m}$ , width 295(265)  $\mu\text{m}$ . Length of legs: 485(450); 420(395); 435(225); 470(470)  $\mu\text{m}$ . Six pairs of *mc*: 50(40); 35(40); 35(45); 50(60); 55(65); 30(45)  $\mu\text{m}$ . Nine pairs of *l*: 55(60); 45(35); 45(45); 45(55); 55(60); 40(50); 45(55); 30(30); 25(30)  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-3-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Type material: Holotype ♀, RSA, Blijderivierpoort, on *Bequartiodendron magalismontanum*, 21.ii.1978, M. K. P. MEYER (PPRI AcY 78/178-6210). Paratype: 1 ♀ with the same data as for the holotype, but a second slide with the same number.



80-83. *Neophyllobius bequartiodendri* spec. nov., ♀. 80, pedipalp; 81, seta  $I_5$ ; 82, coxae I-II; 83, dorsal view

*Neophyllobius gigantorum* spec. nov.

(figs. 84-87)

Female: Body length 375(310)  $\mu\text{m}$ , width 295(280)  $\mu\text{m}$ . Length of legs: 500(500); 420(420); 470(470); 525(515)  $\mu\text{m}$ . Six pairs of *mc*: 50(45); 55(45); 55(45); 60(65); 65(70); 35(35)  $\mu\text{m}$ . Nine pairs of *l*: 70(60); 60(55); 45(55); 50(55); 70(70/75); 55(55); 60(55); 35(35); 30(30)  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femur 4-3-3-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia. The two setae on femur IV are based close to each other and near the middle of the femur.

Male: Unknown.

Type material: Holotype ♀, RSA, Giants-Castle, from unknown host, 2.ii.1982, E. A. UECKERMANN (PPRI 6931). Paratype: 1 ♀, Giants-Castle, from unknown host, 4.ii.1982, E. A. UECKERMANN (PPRI 6964).

*Neophyllobius hypoleanae* spec. nov.

(figs. 88-91)

Female: Body length 295  $\mu\text{m}$ , width 265  $\mu\text{m}$ . Length of legs: 375; 330; 345; 405  $\mu\text{m}$ . Six pairs of *mc*: 35; 45; 55; 60; 60; 25  $\mu\text{m}$ . Nine pairs of *l*: 50; 40; 45; 45; 55; 40; 45; 30; 20  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-3-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

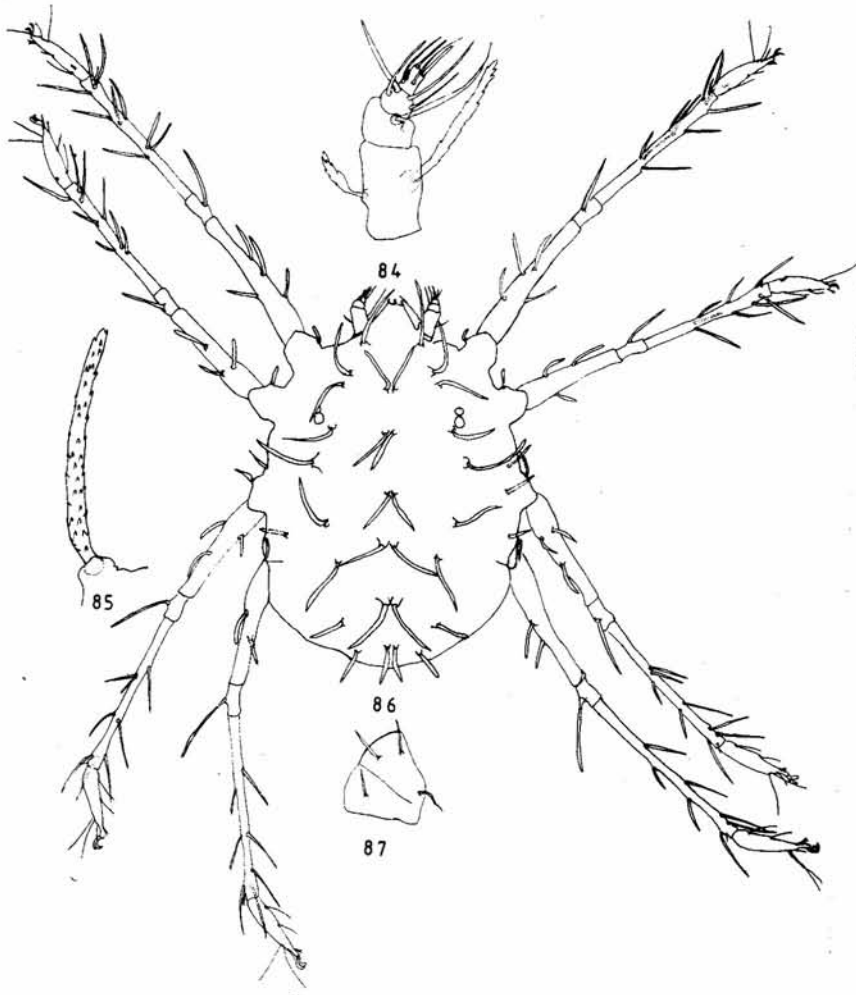
Type material: Holotype ♀, RSA, Kaappunt, on *Hypoleana digitata*, 30.i.1967, W. MARAIS (PPRI AcY 68/275-3604).

Remark: The most distal seta on femur I is longer and stronger than the other three, of which the third is very short.

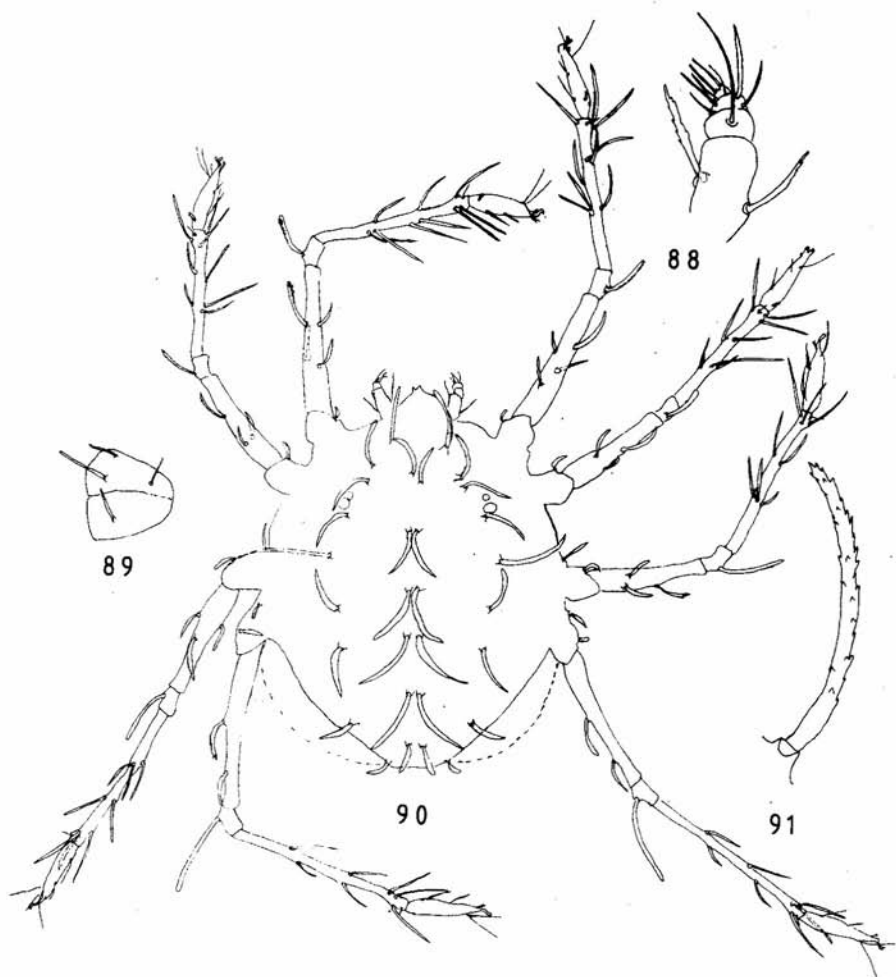
- |     |  |                    |
|-----|--|--------------------|
| 23. | Femur IV with two setae . . . . .  | 24                 |
|     | Femur IV with one seta . . . . .   | 78                 |
| 24. | Palptarsus with two setae and one eupathidium; dorsal setae very strong plumed . . . . . | <i>N. plumifer</i> |
|     | Palptarsus with two setae and two eupathidia . . . . .                                   | 25                 |

(continued on p. 100)





84-87. *Neophyllobius gigantorum* spec. nov., ♀. 84, pedipalp; 85, seta  $I_5$ ; 86, dorsal view; 87, coxae I-II



88-91. *Neophyllobius hypoleanae* spec. nov., ♀. 88, pedipalp; 89, coxae I-II; 90, dorsal view; 91, seta  $l_5$

25. Band of coarse striae interrupted and hooked between  $mc_2$  and  $mc_3$  . . . . . *N. natalensis*  
 Band of coarse striae not interrupted and hooked between  $mc_2$  and  $mc_3$  . . . . . 26
26. Female with two solenidia on the distal end of tibia I; one solenidium on the distal end of tibiae II-IV; one solenidium on tarsi I-IV . . . . . *N. sycomorus*  
 Female with one solenidium on the distal end of tibia I-IV; one solenidium only on tarsi I and II . . . . . 27  
 (continued on p. 106)

*Neophyllobius plumifer* spec. nov.

(figs. 92-96)

Female: Body length 310  $\mu\text{m}$ , width 265  $\mu\text{m}$ . Length of legs: 390; 345; 375; 425  $\mu\text{m}$ . Six pairs of  $mc$ : 60; 60; 70; 70; 70; 45  $\mu\text{m}$ . Nine pairs of  $l$ : 60; 55; 60; 55; 80; 55; 60; 45; 45  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 1 eupathidium.

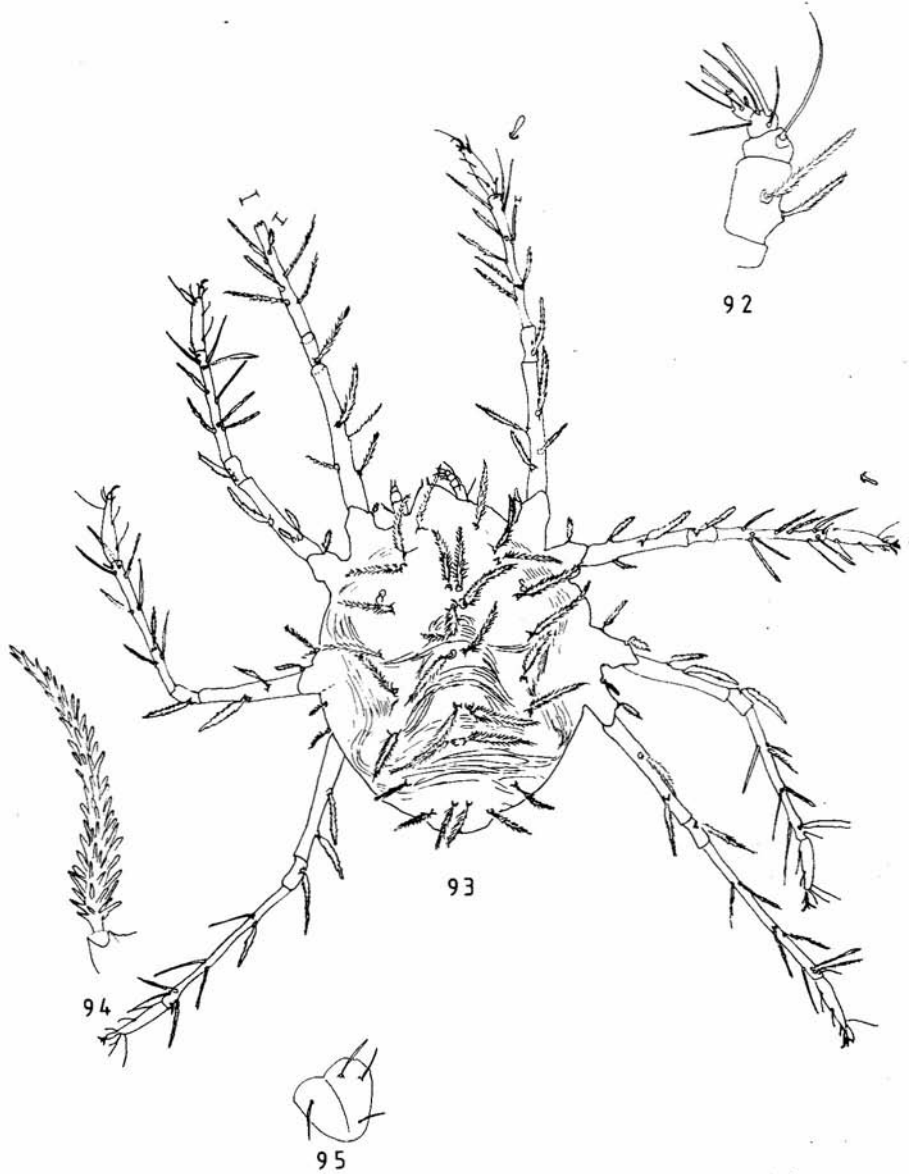
The palptarsus has only one eupathidium. The dorsal setae are very strong plumed.

Male: Unknown.

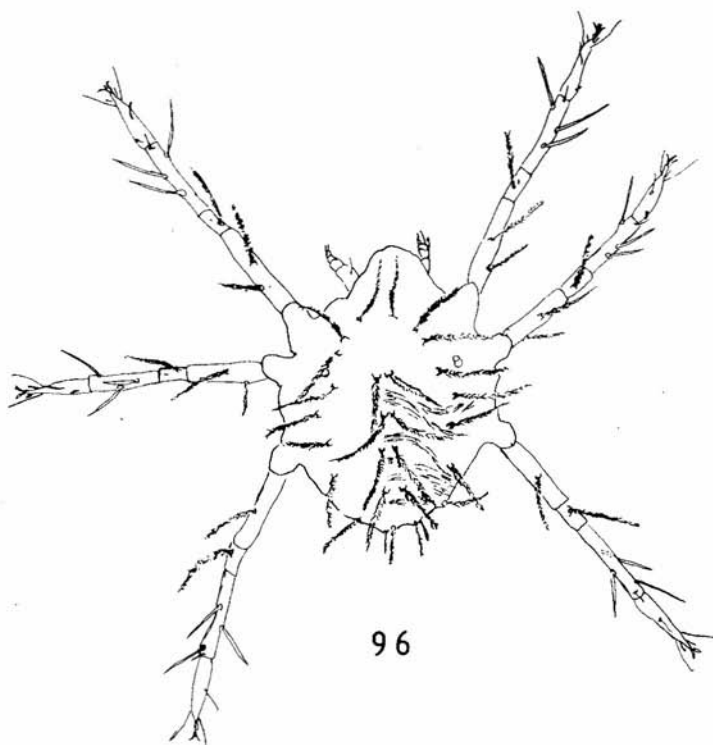
Larva: Five pairs of  $mc$  setae. Nine pairs of  $l$  setae. Leg setation: coxae 1-0-0, trochanters 0-0-0, femora 2-2-1, genua 1-1-1, tibiae 3-3-3, tarsi 1-1-1 (midventral). Genua setae not whip-like.

Type material: Holotype ♀, Poland, Warszawa, Kampinoski Nat. Park, on bark of *Pinus sylvestris*, 1.ix.1984, H. R. BOLLAND (ZMA). Paratypes: 2 larvae with the same data as for the holotype.

Remarks. This species is different from all the other *Neophyllobius* species by the very plumed dorsal setae and by having one eupathidium on the palptarsus. In the larvae it is clear that the  $mc_6$  and  $7$  are not situated in the same area, but in two areas divided by a strong striation-bandage. This is not the case in the adult.



92-95. *Neophyllobius plumifer* spec. nov., ♀. 92, pedipalp; 93, dorsal view; 94, seta I<sub>5</sub>; 95, coxae I-II



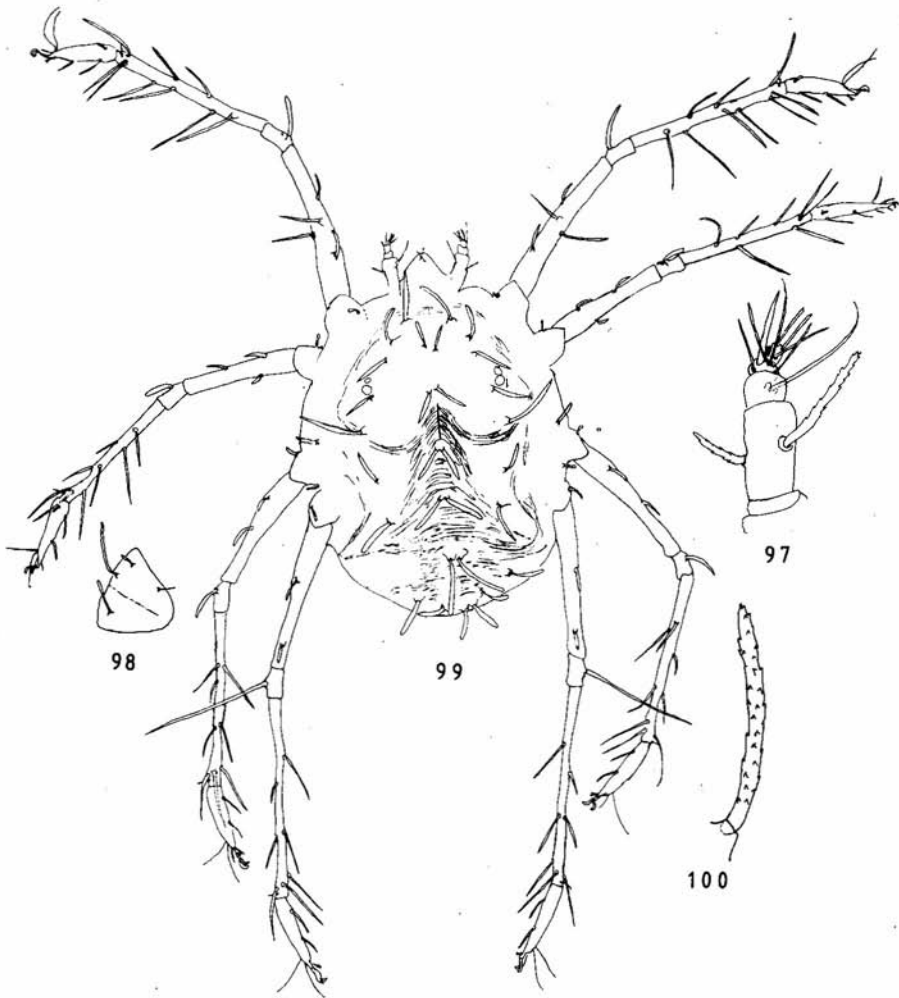
96. *Neophyllobius plumifer* spec. nov., larva. Dorsal view

***Neophyllobius natalensis* MEYER & RYKE**

(figs. 97-100)

*Neophyllobius natalensis* MEYER & RYKE, 1959: 211-213.

Female: Body length 345(360)  $\mu\text{m}$ , width 275(330)  $\mu\text{m}$ . Length of legs: 450(485); 390(395); 450(445); 500(520)  $\mu\text{m}$ . Six pairs of *mc*: 30(30); 35(30); 35(35); 40(40); 55(55); 30(30)  $\mu\text{m}$ . Nine pairs of *l*: 45(35); 35(30); 35(35); 35(35); 60(55); 30(35); 40(35); 35(35); 25(30)  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like, tarsus 2 + 2 eupathidia.



97-100. *Neophyllobius natalensis* MEYER & RYKE, ♀. 97, pedipalp; 98, coxae I-II; 99, dorsal view; 100, seta  $I_5$

The rough dorsal striation bandage between  $mc_2$  and  $mc_3$  is interrupted and hooked. The two marginal setae on coxa I, are much different in length, one is extremely long and the other is extremely short.

Male: Unknown.

Material examined: Holotype ♀, RSA, Munster, on wild tree, 19.iv.1955, P. A. J. RYKE, (AcY 66/18 PPRI). Paratype: 1 ♀, RSA, Amanzimtoti, on grass, 31.i.1966, L. ERASMUS, (AcY 66/930-3149 PPRI).

### *Neophyllobius sycomorus* ZAHER & GOMAA

(figs. 101-106)

*Neophyllobius sycomorus* ZAHER & GOMAA, 1979: 126, 127, 129.

Female: Body length (281-330)  $\mu\text{m}$ , width (220-270)  $\mu\text{m}$ . Length of legs: (445-470); (370-400); (435); (450-475)  $\mu\text{m}$ . Six pairs of  $mc$ : (45-50); (50-55); (55-60); (60-75); (60-65); (30-35)  $\mu\text{m}$ . Nine pairs of  $l$ : (55-60); (50-55); (55); (50-55); (55-70); (50-55); (50-55); (35); (30-35)  $\mu\text{m}$ .

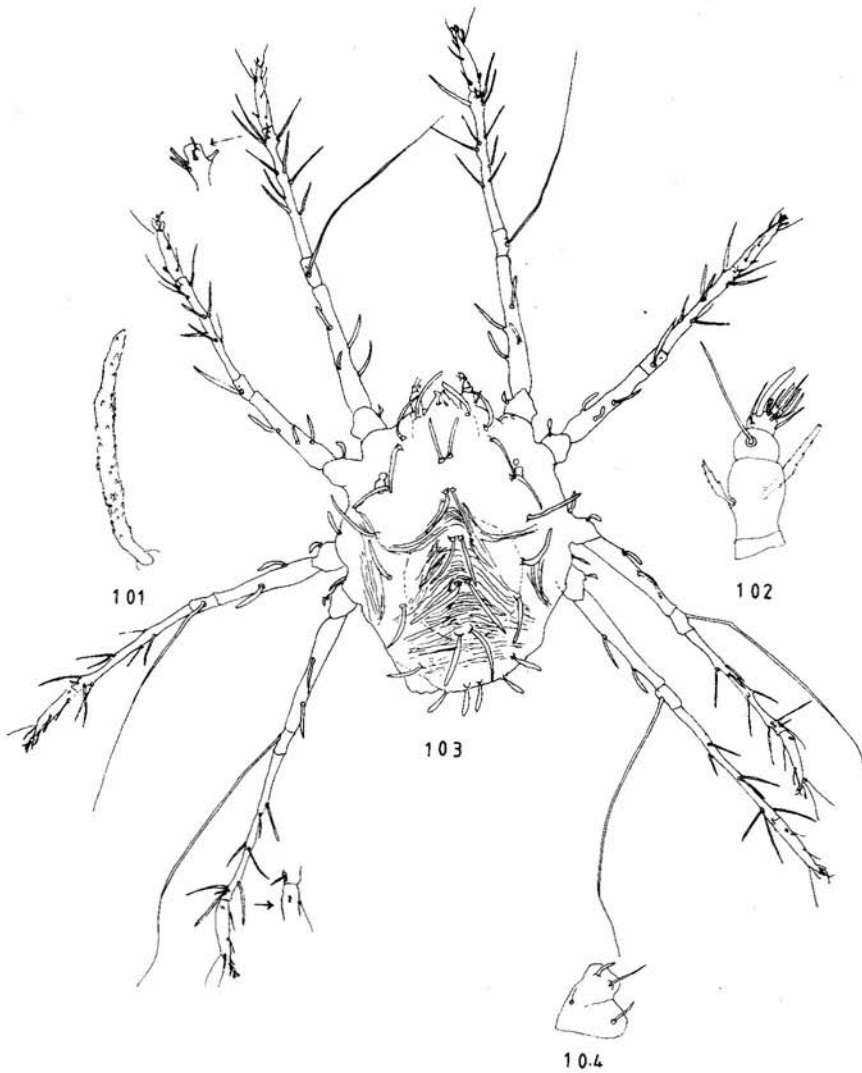
Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

On the distal end of tibia I are two solenidia, while one is most common in a female. Also the female has the normal solenidion on tarsi I and II, but also a solenidion is present on tarsi III and IV, which is not common in the female. The solenidia on tarsi III and IV are based more distal as in the male.

Male: Body smaller,  $mc_6$  reduced in length. Of the two solenidia on the distal end of tibia I, the most proximal one is very long, curved and based on a small tubercle.

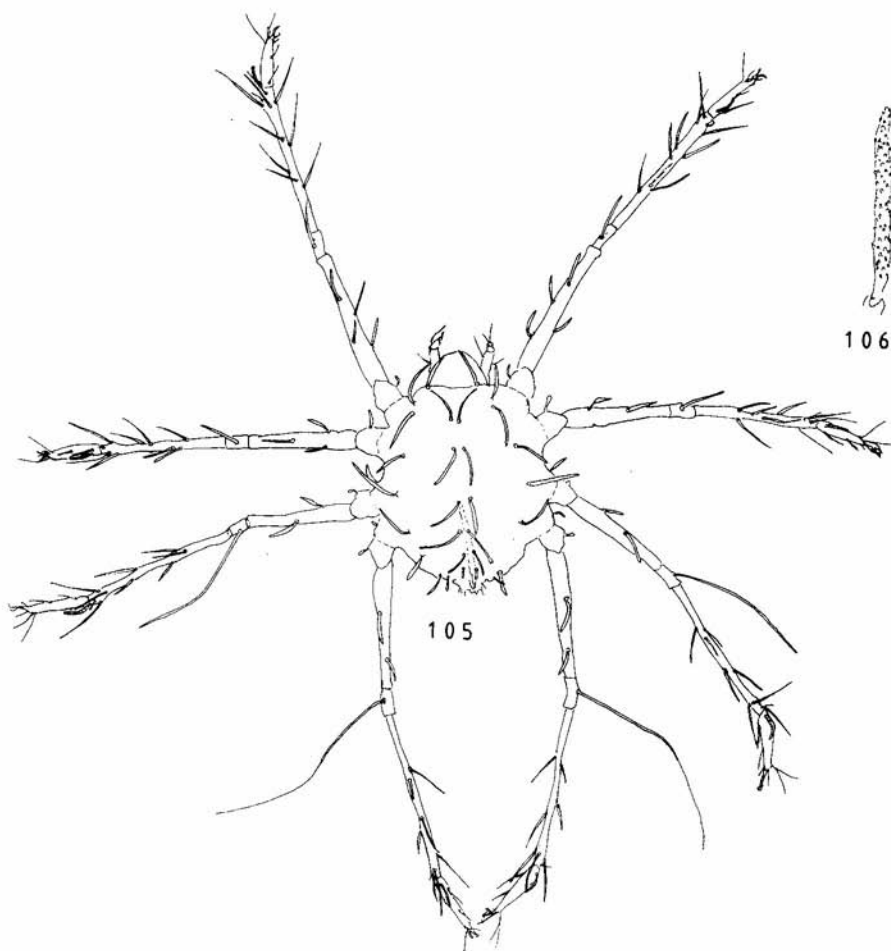
Material examined: 2 paratypes ♀, Egypt, Dakahli, Manzala, on *Ficus sycomorus*, 10.vii.1959, E. A. GOMAA (FAUC); allotype ♂, Egypt, Giza, on olive leaves, 10.vii.1976, E. A. GOMAA (FAUC).

Other published material: Holotype female and 2 paratypes ♀, Egypt, Dakahli, Elmanzala, on *Ficus sycomorus*, ZAHER & GOMAA (FAUC).



101-104. *Neophyllobius sycomorus* ZAHER & GOMAA, ♀. 101, seta  $I_5$ ; 102, pedipalp; 103, dorsal view; 104, coxae I-II





105-106. *Neophyllobius sycomorus* ZAHER & GOMAA, ♂. 105, dorsal view; 106, seta  $l_5$

27.  $Mc_2$  long, passes at least bases of  $mc_4$  . . . . . 28  
 $Mc_2$  just reaching, or shorter than the distance to bases of  $mc_4$   
. . . . . 33
28.  $Mc_4$  longer than  $mc_2$  . . . . . 29  
 $Mc_4$  as long or shorter than  $mc_2$  . . . . . 31
29.  $Mc_2$  longer than  $mc_3$  . . . . . *N. nemoralis*  
 $Mc_2$  shorter than  $mc_3$  . . . . . 30
30.  $Mc_6$  longer than  $l_9$  . . . . . *N. podocarpi*  
 $Mc_6$  as long or shorter than  $l_9$ ; larva femur setation formula:  
2-2-1 . . . . . *N. platanobius*

31.  $Mc_4$  as long as  $mc_2$ ; larva femur setation formula: 2-2-2 . . . . .  
 . . . . . *N. parthenocissi*  
 $Mc_4$  shorter than  $mc_2$  . . . . . 32
32. Dorsal setae very small; larva femur setation formula: 2-2-1,  
 distal seta on femur I not reaching genu border . . . . .  
 . . . . . *N. tenuipilis*  
 Dorsal setae thicker; distal seta on femur I reach easily genu  
 border . . . . . *N. femoralis*  
 (continued on p. 121)

***Neophyllobius nemoralis* KUZNECOV & LIVSHITS**

*Neophyllobius nemoralis* KUZNECOV & LIVSHITS, 1979; 83, 101.

Female: Body length 385  $\mu\text{m}$ , width 320  $\mu\text{m}$ . Length of legs: 480; 415; ?; ?  $\mu\text{m}$ . Six pairs of  $mc$ : 96; 150; 145; 160; 105; 40  $\mu\text{m}$ . Nine pairs of  $l$ :  $l_1-l_4 = 80-90$ ;  $l_5 = 110$ ;  $l_6-l_8 = 75-80$ ;  $l_9 = 40$   $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-7-7, tarsi unknown. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like, tarsus 2 + 2 eupathidia.

The species has long dorsal and genual setae.

Male: Unknown.

Published material: Holotype ♀, USSR, Yalta, State Nikita Botanical Gardens, from leaves and shoots of *Acer* spec., *Castanea* spec., *Quercus* spec., cherry tree and other plants, (901/1 GNBS). Paratypes: 8 ♀, from the same place and from one of the mentioned hosts.

Remarks. No material could be obtained for study. The description is based on the paper of KUZNECOV & LIVSHITS (1979).

The species is related to *N. tenuipilis* spec. nov., *N. parthenocissi* spec. nov., *N. podocarpi* spec. nov. and *N. platanobius* spec. nov. It differs from *N. parthenocissi* spec. nov., and *N. tenuipilis* spec. nov. in having the  $mc_4$  longer than  $mc_2$ . It differs from *N. podocarpi* spec. nov. and *N. platanobius* spec. nov. in having the  $mc_2$  longer than  $mc_3$ .

***Neophyllobius podocarpi* spec. nov.**

(figs. 107-110)

Female: Body length 350  $\mu\text{m}$ , width 295  $\mu\text{m}$ . Length of legs: 530; 445; 480; 530  $\mu\text{m}$ . Six pairs of  $mc$ : 85; 125; 140; 150; 100; 55  $\mu\text{m}$ . Nine pairs of  $l$ : 70; 70; 85; 85; 90; 75; 80; 65; 55  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2,

trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-7-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like, tarsus 2 + 2 eupathidia.

The species has long dorsal and genual setae.

Male: Unknown.

Type material: Holotype ♀, USA, Florida, Gainesville, *Podocarpus* spec., 25-31.xi.1966, H. A. DENMARK (DCDG).

*Neophyllobius platanobius* spec. nov.

(figs. 111-116)

Female: Body length 310(220-310) µm, width 290(240-280) µm. Length of legs: 540(485-545); 460(425-470); 490(435-500); 546(500-535) µm. Six pairs of *mc*: 80(65-80); 115(95-110); 120(100-120); 120(100-120); 85(65-85); 40(40-45) µm. Nine pairs of *l*: 65(60); 65(55-70); 70(60-70); 75(60-75); 80(70-90); 70(60-70); 70(45-70); 55(45-55); 45(40-45) µm.

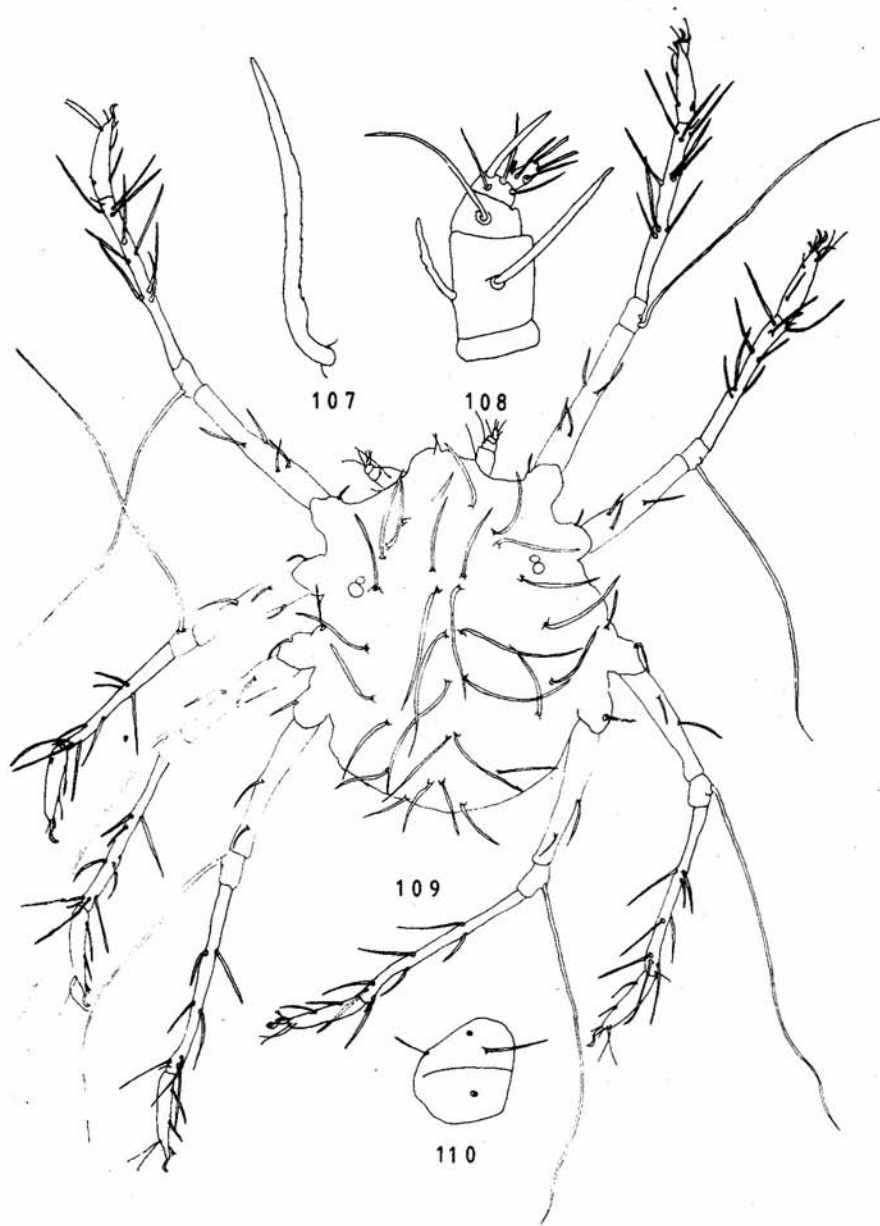
Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia. All genu setae are whip-like.

Male: Unknown.

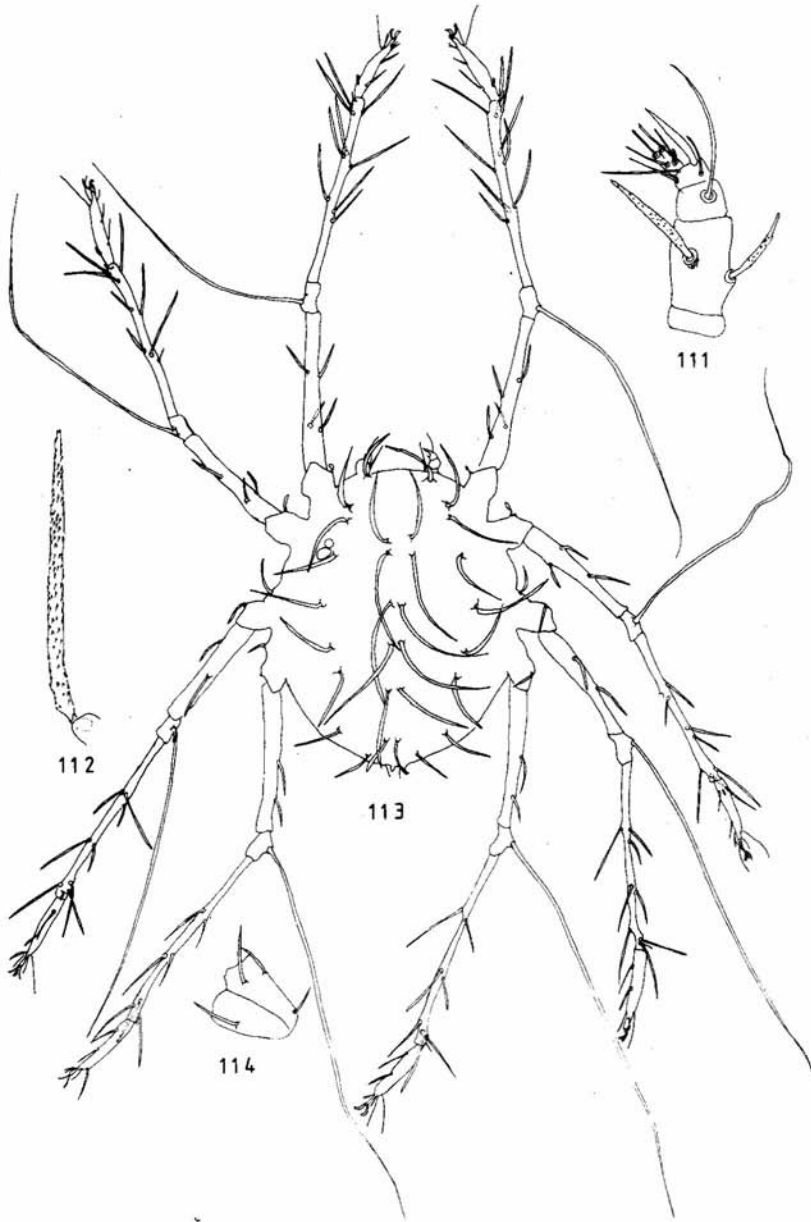
Protonymph: Six pairs of *mc* and nine pairs of *l* setae. Leg setation: coxae 3-1-2-0, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 5-5-5-3. Genu setae whip-like.

Larva: Five pairs of *mc* setae. Nine pairs of *l* setae. Leg setation: coxae 1-0-0, trochanters 0-0-0, femora 2-2-1, genua 1-1-1, tibiae 3-3-3, tarsi 1-1-1 (midventral).

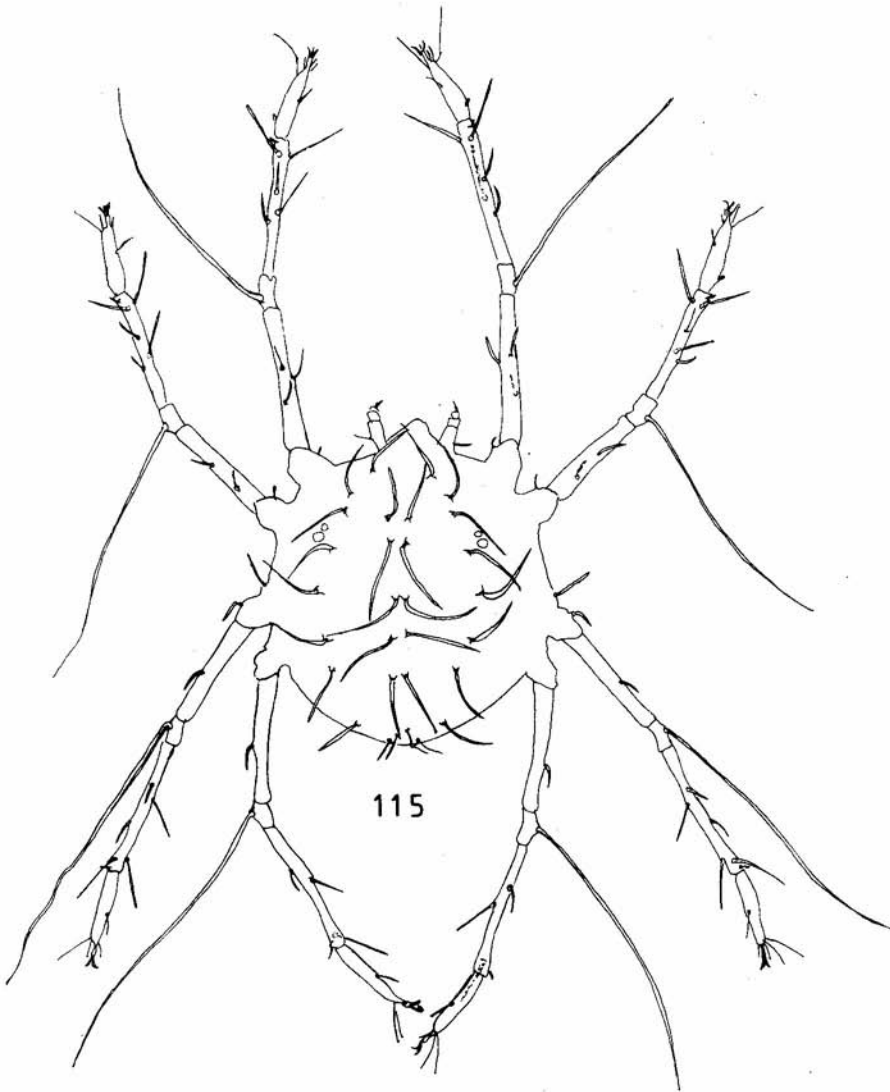
Type material: Holotype ♀, France, Montpellier, on *Platanus acerifolia*, 28.xi.1985, H. R. BOLLAND (ZMA). Paratypes: 5 ♀ and 1 protonymph with the same data as for the holotype; 5 ♀, 1 protonymph and 2 larvae, France, Montpellier, on *Platanus acerifolia*, 26.xi.1986, H. R. BOLLAND (ZMA).



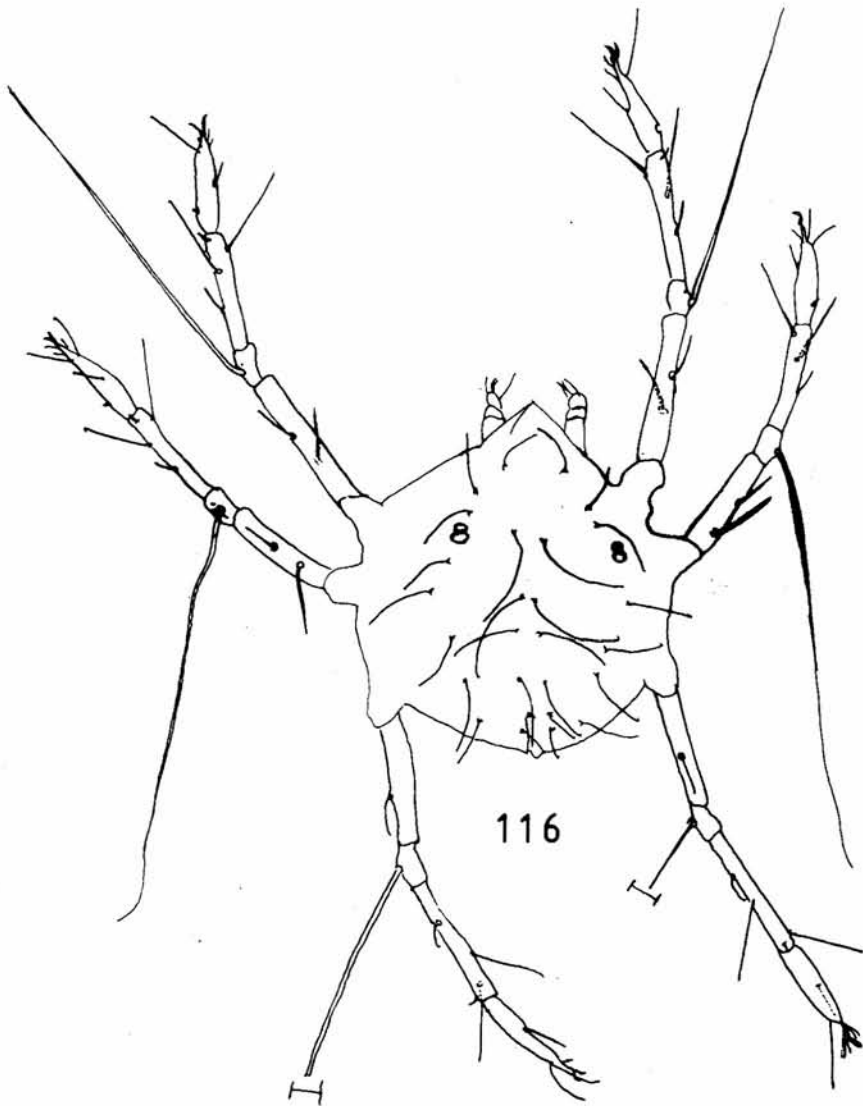
107-110. *Neophyllobius podocarpi* spec. nov., ♀. 107, seta I<sub>3</sub>; 108, pedipalp; 109, dorsal view; 110, coxae I-II



111-114. *Neophyllobius platanobius* spec. nov., ♀. 111, pedipalp; 112, seta  $I_5$ ; 113, dorsal view; 114, coxae I-II



115. *Neophyllobius platanobius* spec. nov., protonymph., dorsal view



116. *Neophyllobius platanobius* spec. nov., larva, dorsal view

*Neophyllobius parthenocissi* spec. nov.

(figs. 117-122)

Female: Body length 310  $\mu\text{m}$ , width 275  $\mu\text{m}$ . Length of legs: 530; 450; 500; 535  $\mu\text{m}$ . Six pairs of *mc*: 85; 125; 120; 125; 85; 45  $\mu\text{m}$ . Nine pairs of *l*: 65; 75; 80; 70; 85; 70; 75; 50; 45  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-7-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

The species has long dorsal and genual setae.

Male: Body smaller, *mc*<sub>6</sub> reduced in length. Two solenidia on the distal end of tibia I.

Larva: Five pairs of *mc* and nine pairs of *l* setae. Setation of legs: coxae 1-0-0, trochanters 0-0-0, femora 2-2-2, genua 1-1-1, tibiae 3-3-3, tarsi 7-7-5. Genu setae whip-like.

Type material: Holotype ♀, USA, Washington D. C., on *Parthenocissus tricuspidata*, 31.viii.1950, E. W. BAKER (USNM). Paratypes: 1 allotype ♂ and 1 ♀ in the same slide as the holotype; 2 larvae in a second slide, with the same data as for the holotype (USNM).

Remark: The larva has two setae on femur III instead of one as is in *N. tenuipilis* spec. nov..

*Neophyllobius tenuipilis* spec. nov.

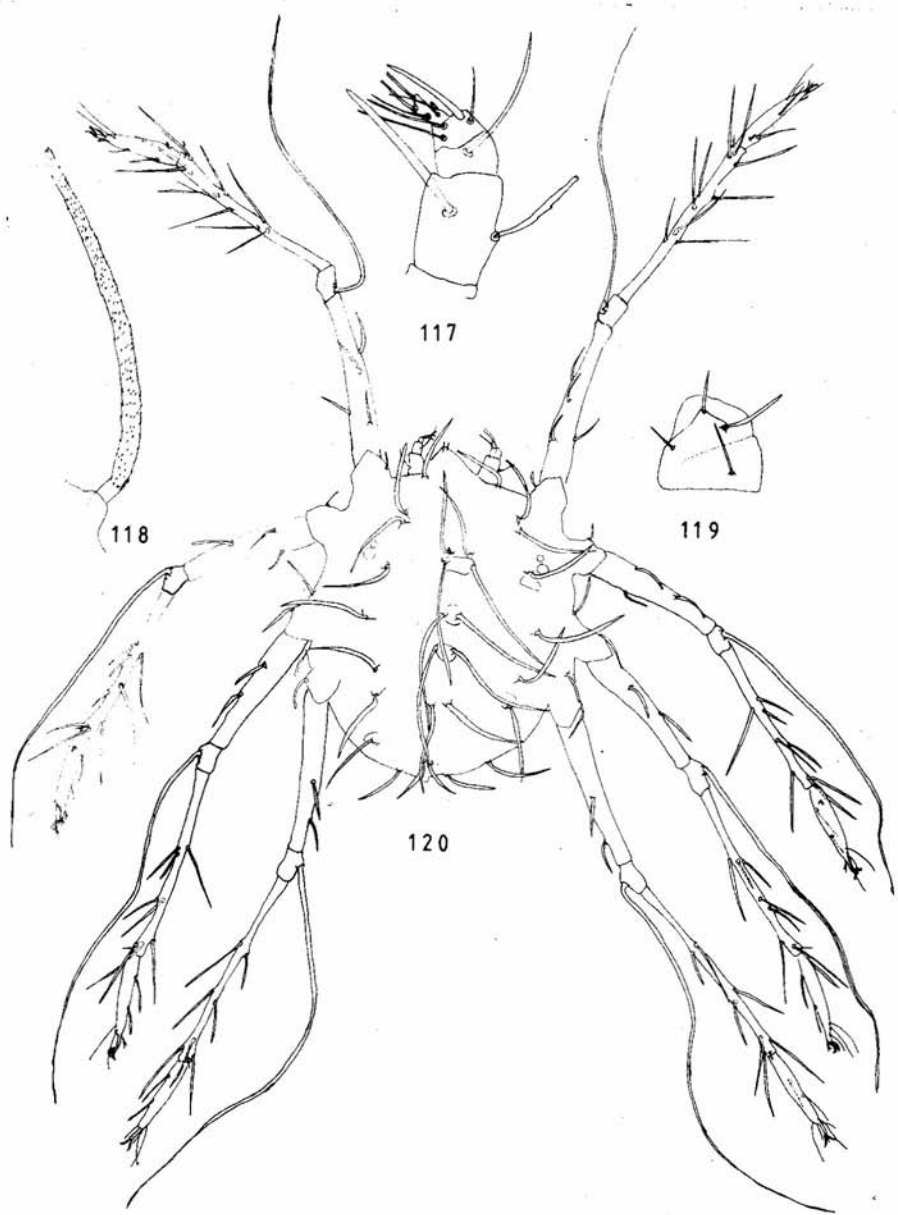
(figs. 123-129)

Female: Body length 275(290-295)  $\mu\text{m}$ , width 235(250-280)  $\mu\text{m}$ . Length of legs: 490(495-515); 420(425-435); 465(470-495); 470(500-515)  $\mu\text{m}$ . Six pairs of *mc*: 70(70); 110(100-105); 110(100-110); 105(95-105); 80(70-80); 45(35-40)  $\mu\text{m}$ . Nine pairs of *l*: 60(60-70); 70(70); 75(70-75); 80(70-75); 80(80-110); 65(70); 60(60-65); 50(45-50); 45(35-40)  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

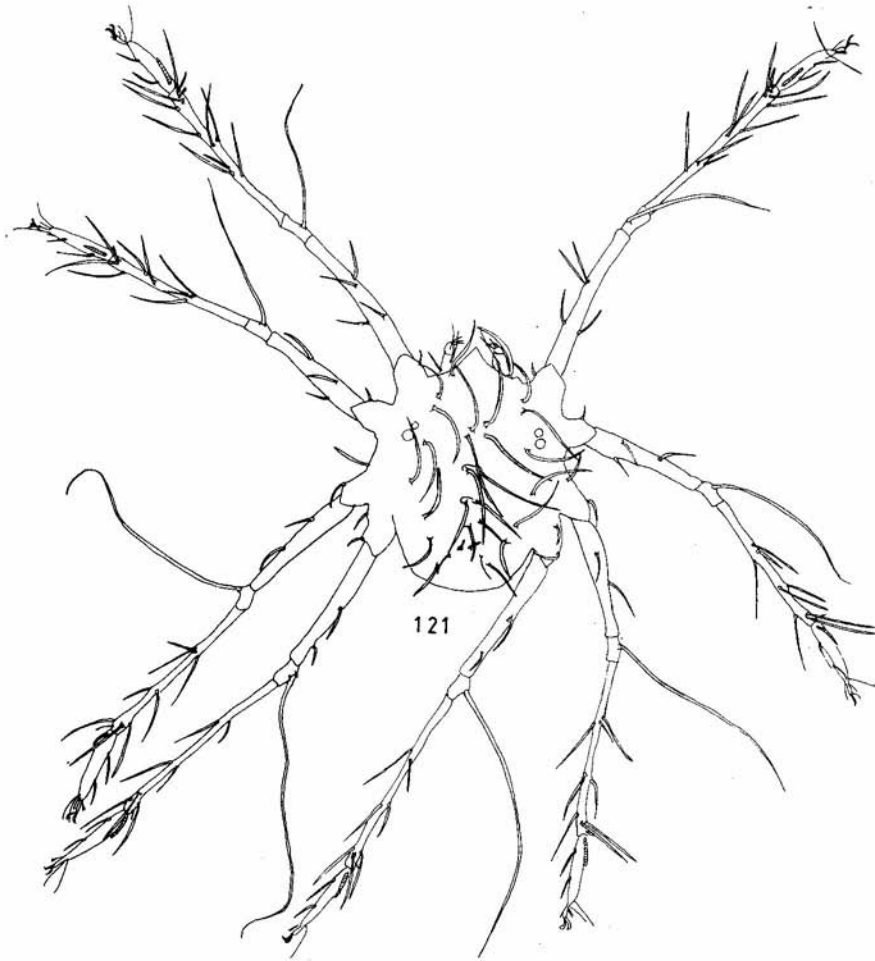
The species has long dorsal and genual setae.

Male: Body smaller than female, *mc*<sub>6</sub> reduced in length. Two solenidia distal on tibia I. Aedeagus visible.





117-120. *Neophyllobius parthenocissi* spec. nov., ♀. 117, pedipalp; 118, seta  $l_5$ ; 119, coxae I-II; 120, dorsal view

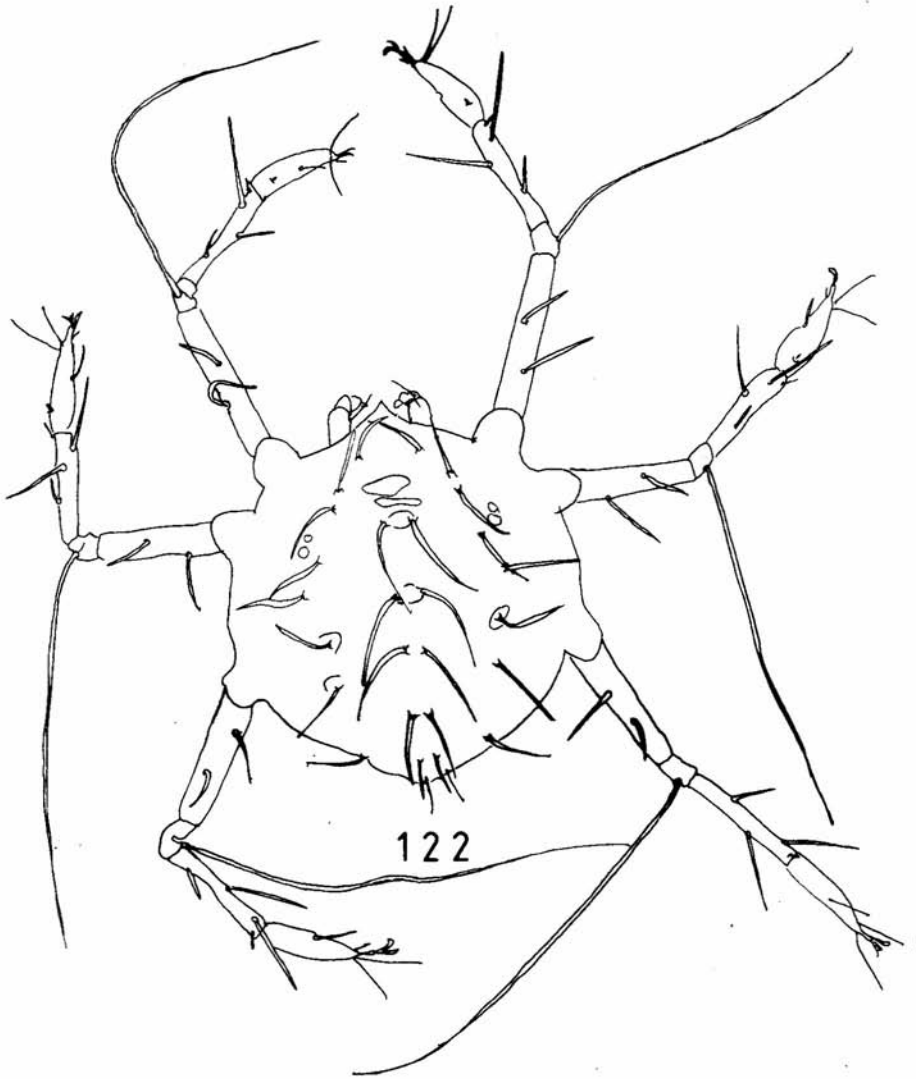


121. *Neophyllobius parthenocissi* spec. nov., ♂. Dorsal view

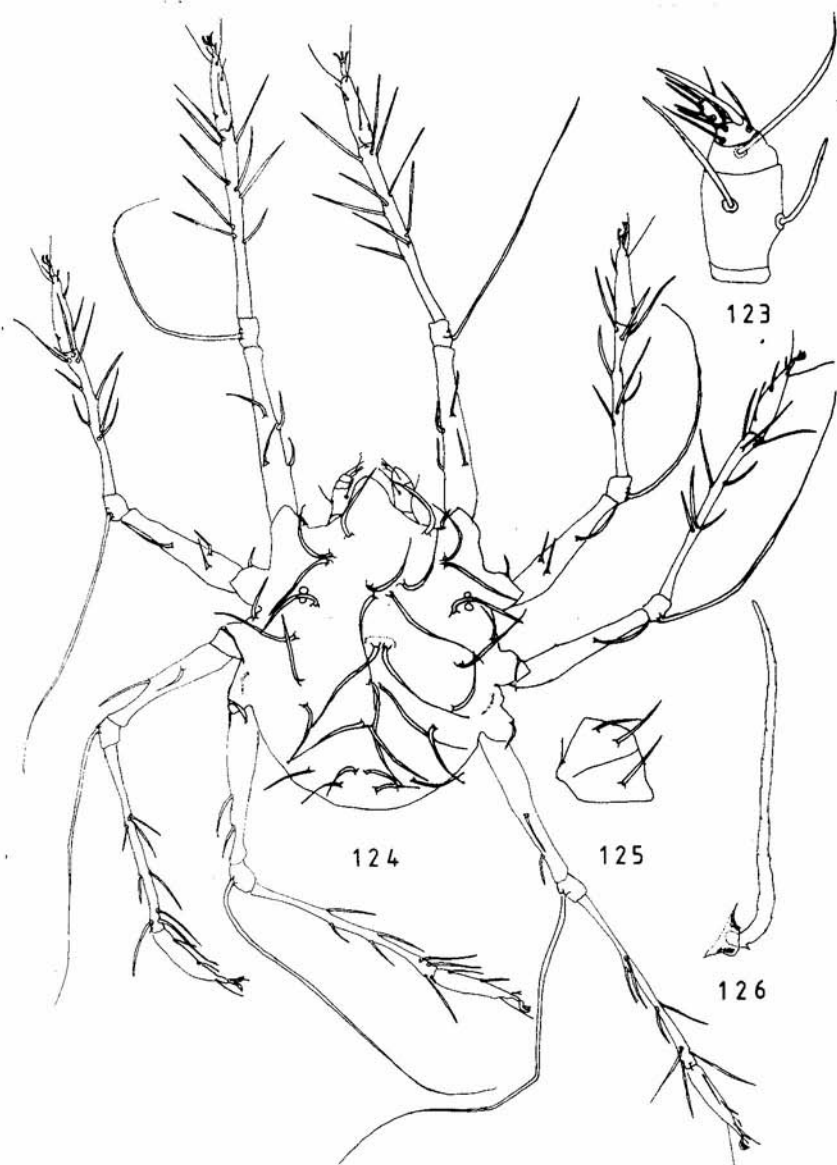
**Protonymph:** Six pairs of *mc* and nine pairs of *l* setae. Leg setation: coxae 3-1-2-0, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 5-5-5-3, tarsi 9-9-7-5. Genu setae whip-like.

**Larva:** Five pairs of *mc* and nine pairs of *l* setae. Leg setation: coxae 2-0-0, trochanters 0-0-0, femora 2-2-1, genua 1-1-1, tibiae 3-3-3, tarsi 7-7-5. Genu setae whip-like.

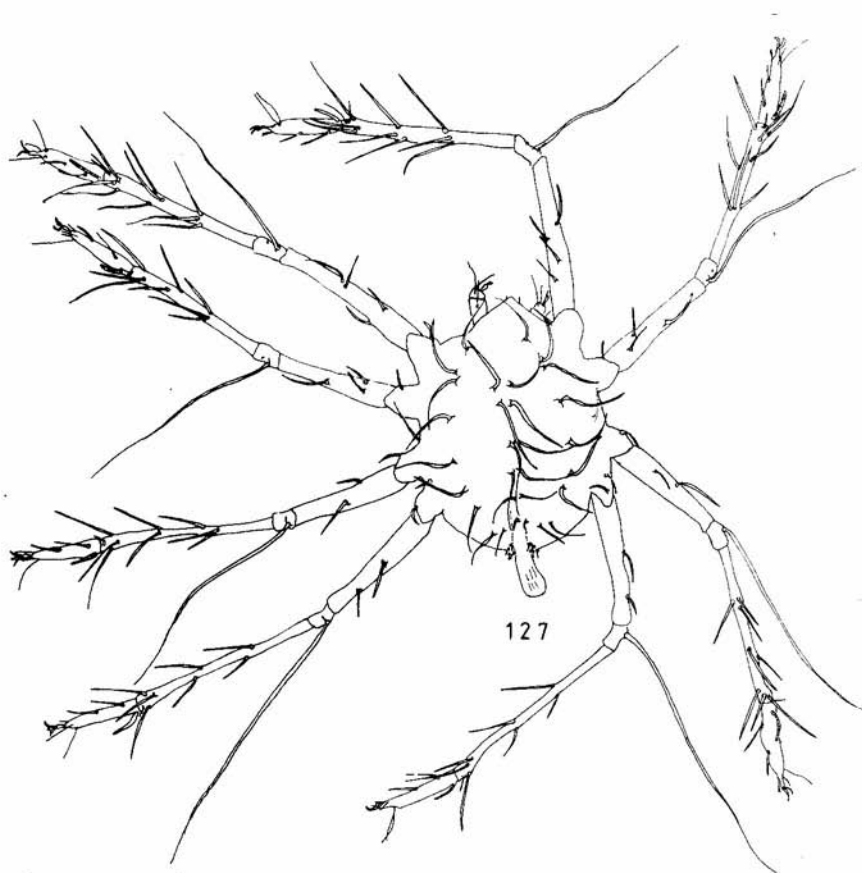
**Type material:** Holotype ♀, Israel, Rehovot, on Khaya bark, 22. ii.1968, U. GERSON (2132 HUI). Paratypes: Allotype ♂ (1952 HUI),



122. *Neophyllobius parthenocissi* spec. nov., larva. Dorsal view



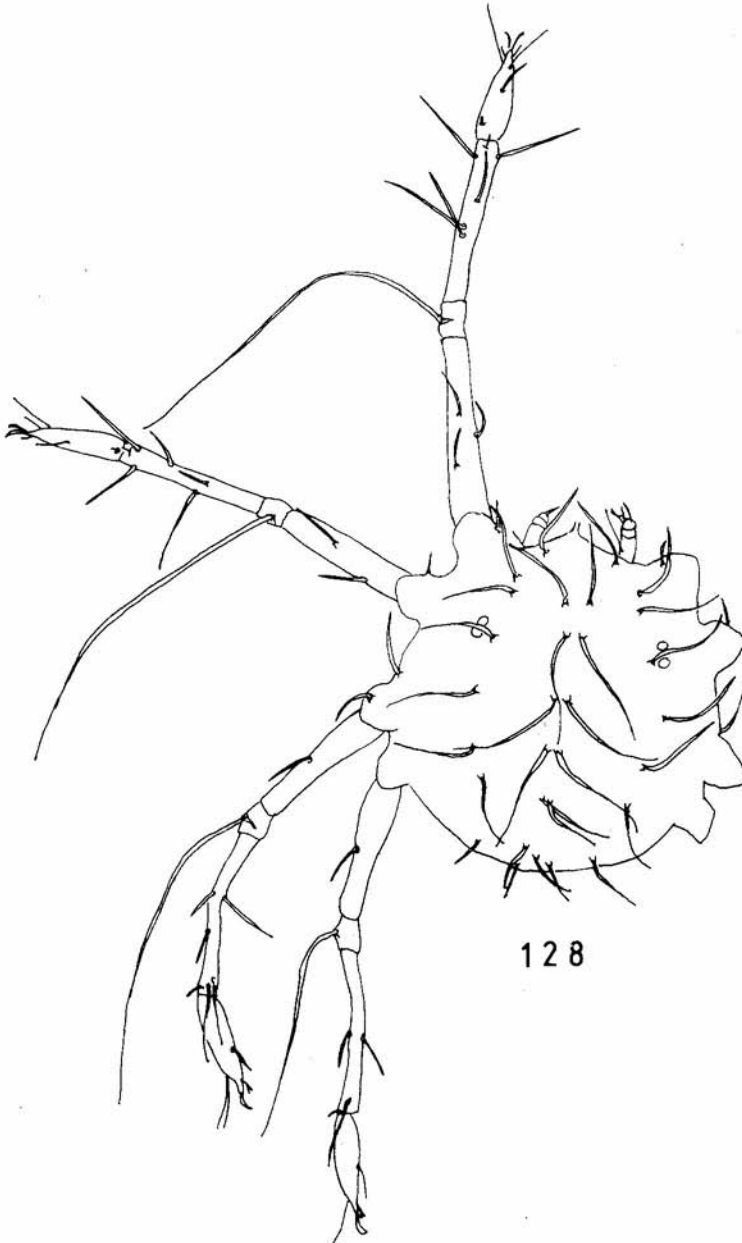
123-126. *Neophyllobius tenuipilis* spec. nov., ♀. 123, pedipalp; 124, dorsal view; 125, coxae I-II; 126, seta  $I_5$



127. *Neophyllobius tenuipilis* spec. nov., ♂. Dorsal view

1 ♀ (1497 ZMA), 1 ♀ (1950 ZMA), 1 larva (1943 HUJ), all Israel, Rehovot, on bark of *Pinus* spec., 2.ix.1966, U. GERSON (HUJ); 1 ♀, Israel, Nes Ziona, on bark of *Cupressus* spec., 16.vii.1966, U. GERSON (1812 HUJ); 1 protonymph, Israel Nes Ziona, on bark of pine tree, 31.x.1966, U. GERSON (1954 HUJ); 1 protonymph, Israel, Rehovot, on bark of *Gravilea* spec., 2.viii.1966, U. GERSON (1809 ZMA).

Remarks. *Neophyllobius tenuipilis* resembles *N. parthenocissi*, *N. nemoralis*, *N. podocarpi* and *N. platanobius*. It differs from *N. parthenocissi* by having the dorsal setae much smaller and the  $mc_4$  shorter than the  $mc_2$ , while the  $mc_4$  in *N. parthenocissi* is equal in length with the  $mc_2$ . The larva of *N. tenuipilis* has only one seta on femur III as the larva of *N.*



128. *Neophyllobius tenuipilis* spec. nov., protonymph., dorsal view



129

129. *Neophyllobius tenuipilis* spec. nov., larva, dorsal view

*parthenocissi* has 2 setae on femur III. The species differs from *N. nemoralis*, *N. podocarp*i and *N. platanobius* in having the  $mc_4$  as long or shorter than the  $mc_2$  while the  $mc_4$  in *N. nemoralis*, *N. podocarp*i and *N. platanobius* are much longer than the  $mc_2$ . Also the smaller dorsal setae.

No. 1954 was maintained in a laboratory for seven weeks feeding on scale insects crawlers (GERSON, pers. comm.)

*Neophyllobius femoralis* spec. nov.

(figs. 130-133)

Female: Body length 310  $\mu$ m, width 280  $\mu$ m. Length of legs: 435; 360; 430; 450  $\mu$ m. Six pairs of  $mc$ : 75; 115; 110; 110; 95; 30  $\mu$ m. Nine pairs of  $l$ : 70; 55; 55; ?; 90; 50; 60; 45; 35  $\mu$ m. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

The species has very long femur setae.

Male: Unknown.

Type material: Holotype ♀, Egypt, Fayoum, palm tree, 1982, E. A. GOMAA (ZMA).

- |     |  |                      |
|-----|--|----------------------|
| 33. | $Mc_3$ reach or pass bas of $mc_5$ . . . . .                     | 34                   |
|     | $Mc_3$ do not reach at all the bases of $mc_5$ . . . . .         | 42                   |
| 34. | $Mc_4$ do not reach margin of the dorsum . . . . .               | 35                   |
|     | $Mc_4$ reach margin of the dorsum . . . . .                      | 40                   |
| 35. | $Mc_4$ pass bases of $mc_6$ . . . . .                            | 36                   |
|     | $Mc_4$ do not pass bases of $mc_6$ . . . . .                     | 37                   |
| 36. | Dorsal setae broad with dark impression . . . . .                | <i>N. mangiferus</i> |
|     | Dorsal setae smaller and no dark impression; dorsum female small |                      |
|     | nearly as small as the male . . . . .                            | <i>N. theobromae</i> |
- (continued on p. 128)

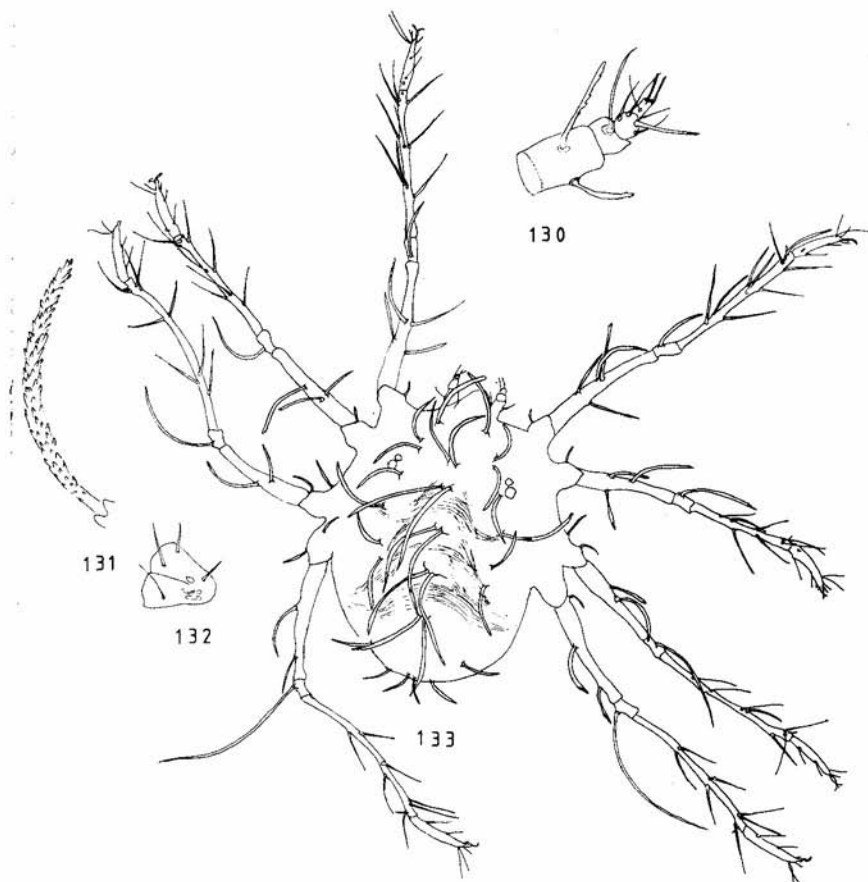
*Neophyllobius mangiferus* ZAHER & GOMAA

(figs. 134-139)

*Neophyllobius mangiferus*, ZAHER & GOMAA, 1979: 128-130; HASSAN, 1976: 49-62.

Female: Body length (325)  $\mu$ m, width (265)  $\mu$ m. Length of legs: (430); (380); (420); (450)  $\mu$ m. Six pairs of  $mc$ : (45); (75); (105); (95); (70);





130-133. *Neophyllobius femoralis* spec. nov., ♀. 130, pedipalp; 131, seta  $l_5$ ; 132, coxae I-II; 133, dorsal view

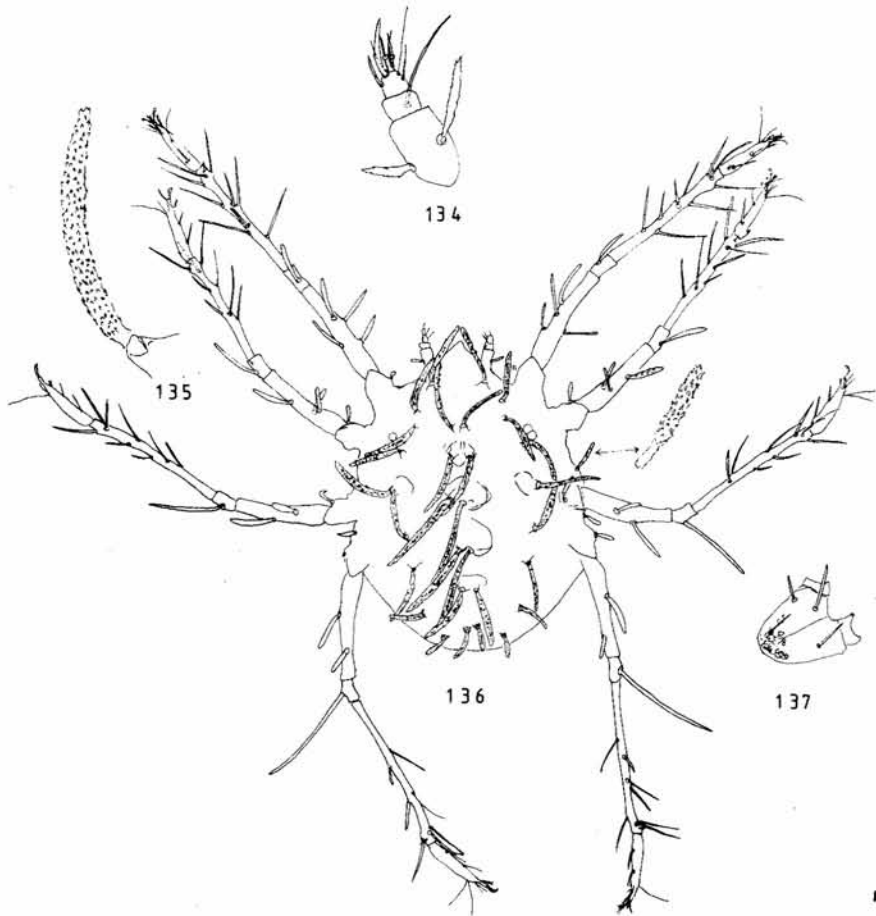
(30)  $\mu\text{m}$ . Nine pairs of  $l$ : (70); (55); (60); (60); (70); (60); (65); (35); (30)  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

The dorsal setae are occupied with small, fine, spinose prickles which give the setae a very dark impression.

Male: Unknown.

Protonymph: Not examined.

Larva: Not examined.

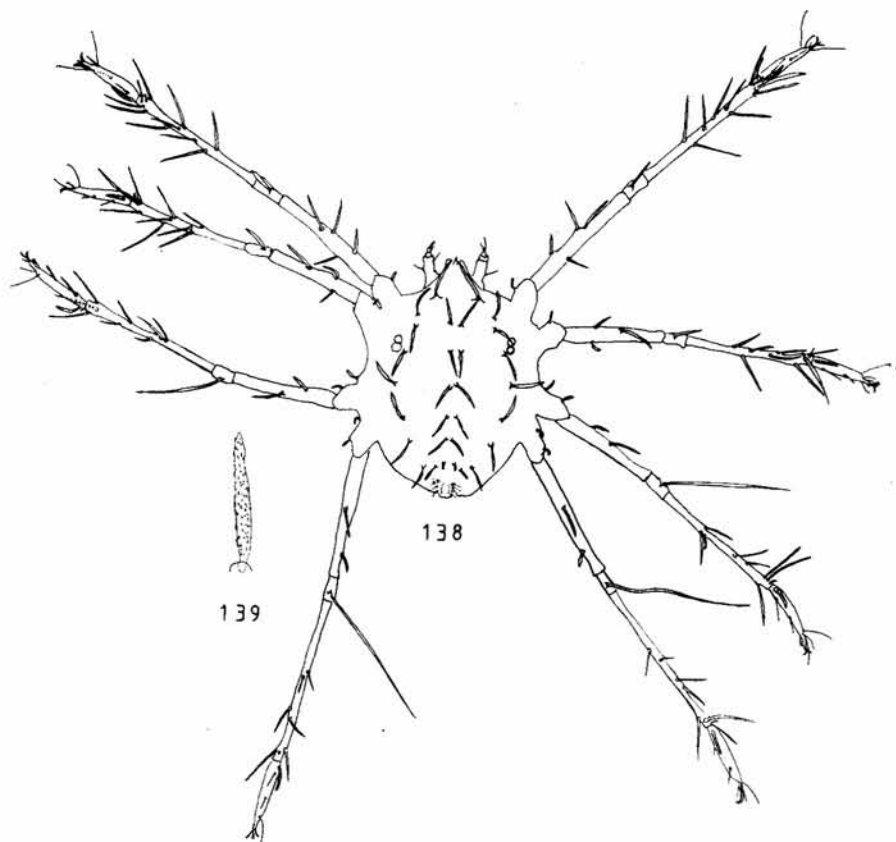


134-137. *Neophyllobius mangiferus* ZAHER & GOMAA, ♀. 134, pedipalp; 135, seta I<sub>5</sub>; 136, dorsal view; 137, coxae I-II

Material examined: Paratype ♀, Egypt, Giza, on *Mangifera indica*, E. A. GOMAA, 20.iv.1979, (FAUC); 2 ♀, Egypt, on *Citrus spec.*, 18.v.1983, M. J. J. MEYS, (ZMA).

Other published material: holotype ♀, Egypt, Eltahreer Province, Badr. on *Mangifera indica*, M. A. ZAHER & E. A. GOMAA (FAUC).

Remarks. Descriptions of protonymph and larva are given in HASSAN (1976). The tibia IV in the description of the female has seven setae instead of eight. No broad solenidion could be observed on genu III as is given in ZAHER & GOMAA (1979) fig. 3.

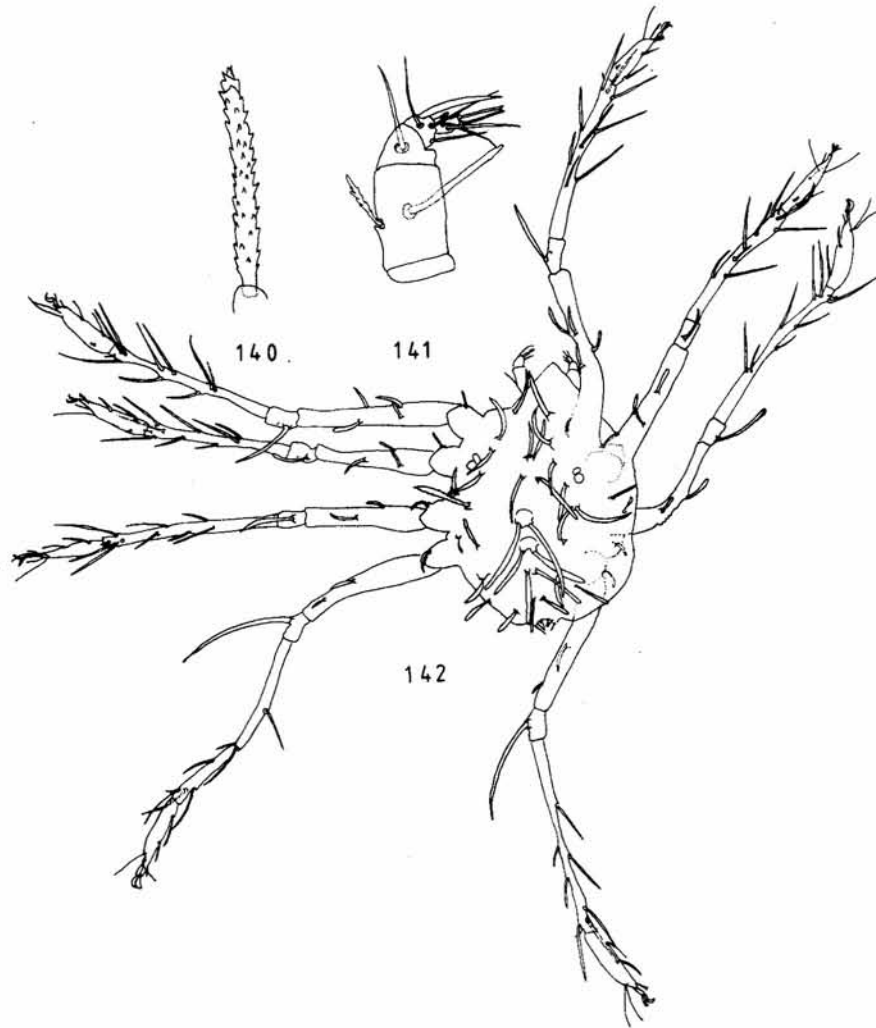


138-139. *Neophyllobius mangiferus* ZAHER & GOMAA, ♂. 138, dorsal view; 139, seta  $I_5$

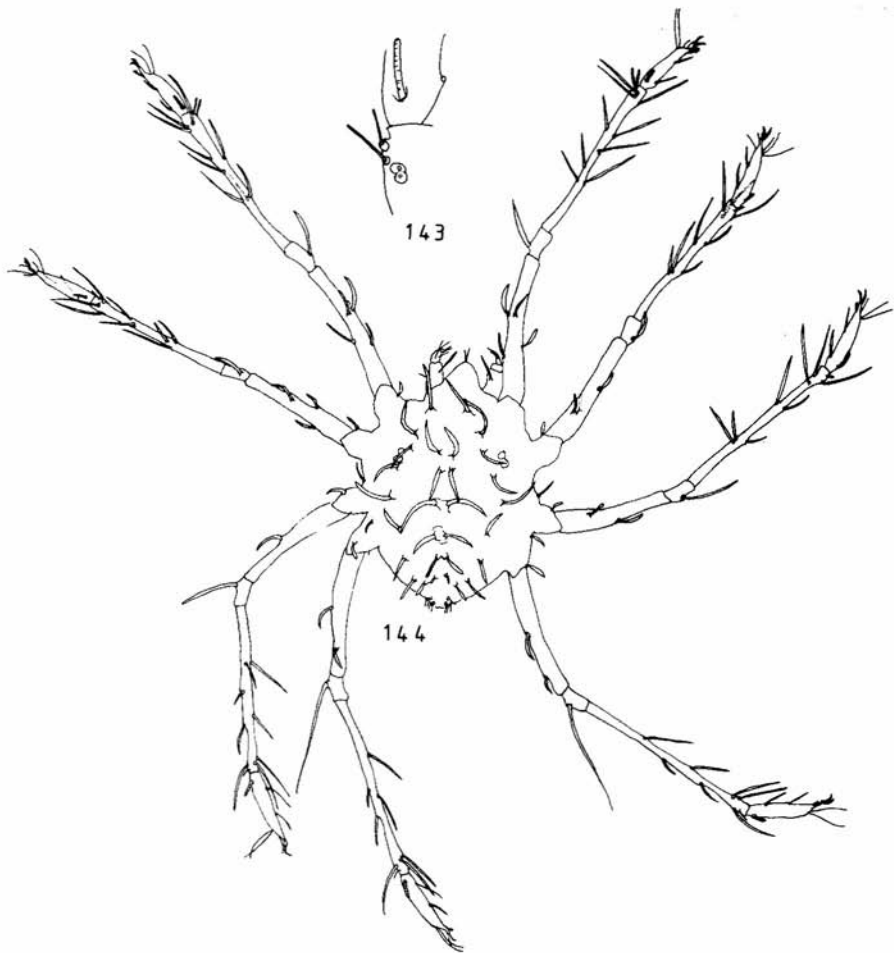
*Neophyllobius theobromae* spec. nov.

(figs. 140-146)

Female: Body length 230  $\mu\text{m}$ , width 185  $\mu\text{m}$ . Length of legs: 470; 395; 435; 485  $\mu\text{m}$ . Six pairs of *mc*: 45; 45; 75; 55; 50; 30  $\mu\text{m}$ . Nine pairs of *l*: 45; 45; 30; 35; 55; 30; 30; 30; 25  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia. Body is small in comparison with other species.



140-142. *Neophyllobius theobromae* spec. nov., ♀. 140, seta I; 141, pedipalp; 142, dorsal view

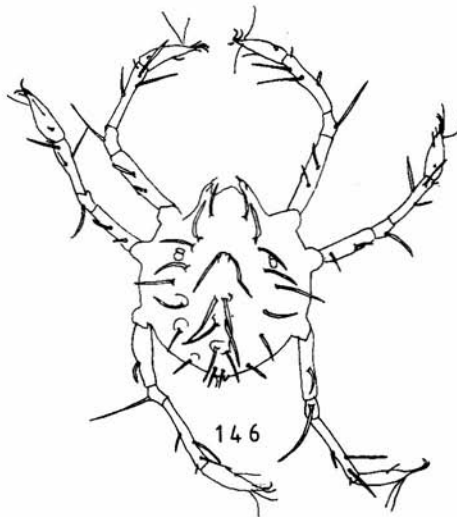
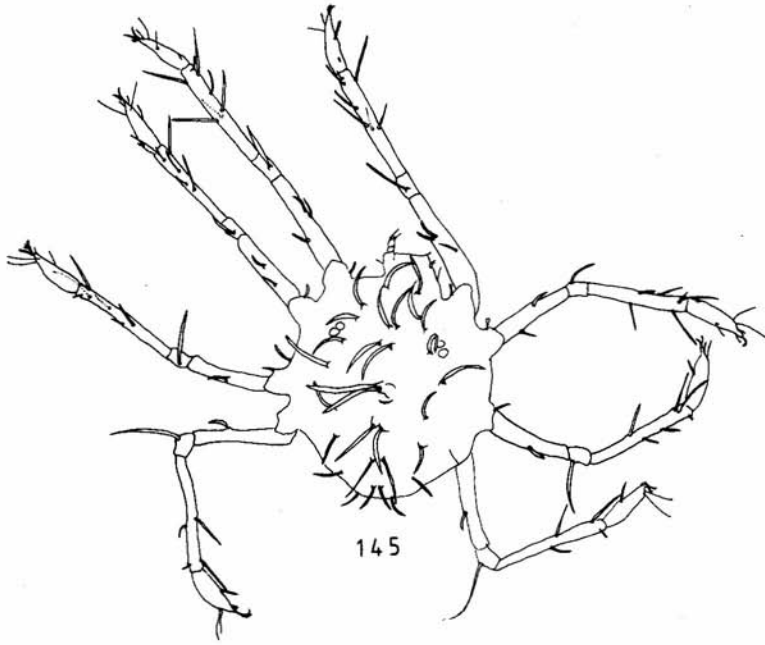


143-144. *Neophyllobius theobromae* spec. nov., ♂. 143, solenidia on tibia and coxa I; 144, dorsal view

Male: Body nearly as big as that of the female.  $Mc_6$  reduced in length. Two solenidia distal on tibia I.

Protonymph: Six pairs of *mc* and nine pairs of *l* setae. Leg setation: coxae 3-1-2-0, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 6-5-5-3, tarsi 9-9-7-5.

Larva: Five pairs of *mc* and nine pairs of *l* setae. Leg setation: coxae 1-0-0, trochanters 0-0-0, femora 2-2-1, genua 1-1-1, tibiae 3-3-3, tarsi 7-7-5. Genual setae not whip-like.



145-146. *Neophyllobius theobromae* spec. nov., protonymph. 145, dorsal view; larva. 146. dorsal view

Type material: Holotype ♀, Nicaragua, Nandaime, on cacao, 16.iv.1959, E. W. BAKER (No. 40 USNM). Paratypes: 1 allotype ♂, 2 protonymphs and 1 larva, all in the same slide as the holotype.

37.  $Mc_5$  pass easily bases of  $mc_6$  . . . . . 38  
 $Mc_5$  just reach bases of  $mc_6$  . . . . . *N. marginatus*
38.  $Mc_2$  reach easily bases of  $mc_3$  . . . . . 39  
 $Mc_2$  do not reach bases of  $mc_3$ ;  $mc_1$  do not reach bases of  $mc_3$ ;  
 femur I setae much shorter . . . . . *N. longulus*
39.  $Mc_1$  reach bases of  $mc_3$ ; first seta on femur I the shortest; third seta  
 on femur II the longest . . . . . *N. deleoni*  
 $Mc_1$  do not reach bases of  $mc_3$ ; third seta on femur I the shortest  
 seta; second seta on femur II the longest seta . . . *N. hispanicus*  
 (continued on p. 132)

### *Neophyllobius marginatus* DE LEON

(figs. 147-151)

*Neophyllobius marginatus* DE LEON, 1958: 178-180; VACANTE, 1984: 296

Female: Body length 365  $\mu$ m, width 335  $\mu$ m. Length of legs: 435, 385, 405, 450  $\mu$ m. Six pairs of  $mc$ : 65; 60; 105; 80; 70; 35  $\mu$ m. Nine pairs of  $l$ : 60; 55; 50; 55; 80; 40; 45; 40; 30  $\mu$ m. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Body smaller than female.  $Mc_6$  reduced in length. Two solenidia distal on tibia I.

Protonymph: Not examined.

Larva: Not examined.

Material examined: Holotype ♀, Mexico, Nay, Ixtlan del Rio, on composite, 24.iii.1957, D. DE LEON (1612-1 MCZ).

Other published material: Paratypes: 2 ♀, 2 ♂, 2 protonymphs and 1 larva with the same data as for the holotype; 1 ♀, Mexico, Nay, nine miles west of Tepic, 25.iii.1957, D. DE LEON. Mentioned from Italy on olivegroves (VACANTE).



147-150. *Neophyllobius marginatus* DE LEON, ♀. 147, pedipalp; 148, dorsal view; 149, seta  $l_5$ ; 150, coxae I-II

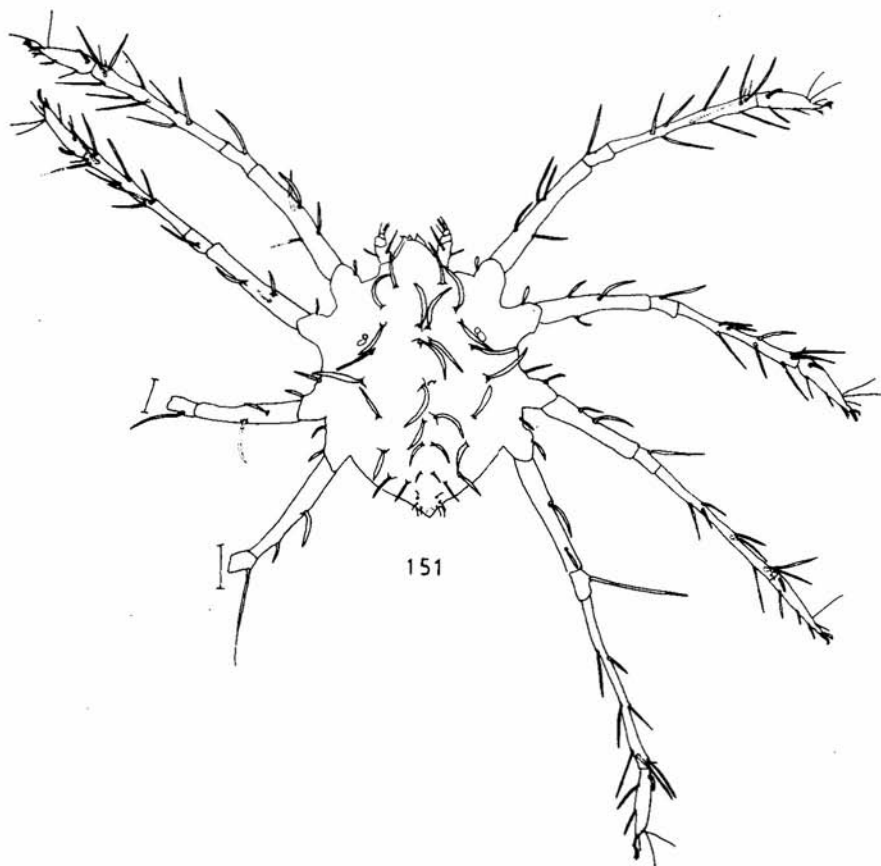
***Neophyllobius longulus* DE LEON**

(figs. 152-155)

*Neophyllobius longulus* DE LEON, 1958: 179-180.

Female: Body length 310  $\mu\text{m}$ , width 265  $\mu\text{m}$ . Length of legs: 485; 420; 470; 500  $\mu\text{m}$ . Six pairs of  $mc$ : 45; 45; 85; 55; 60; 30  $\mu\text{m}$ . Nine pairs of  $l$ : 60; 60; 35; 35; 70; 35; 40; 40; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2,





151. *Neophyllobius marginatus* DE LEON, ♂. Dorsal view

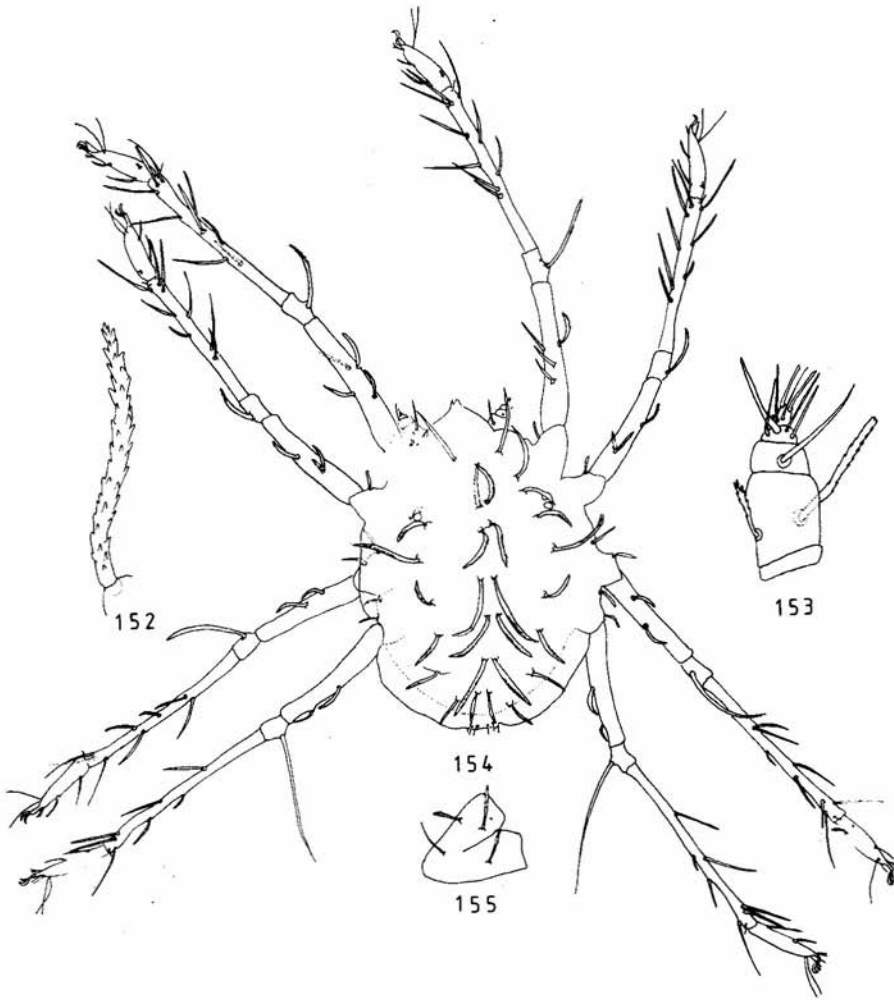
trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like, tarsus 2 + 2 eupathidia.

Male: Unknown.

Protonymph: Not examined.

Material examined: Holotype ♀, Mexico, Oax., Matias Romero, on *Calophyllum* spec., 30.i.1957, D. DE LEON (1449 LG-MCZ).

Other published material: Paratypes: ♀ and protonymph, with the same data as the holotype.



152-155. *Neophyllobius longulus* DE LEON, ♀. 152, seta  $l_5$ ; 153, pedipalp; 154, dorsal view; 155, coxae I-II

*Neophyllobius deleoni* nom. nov.

(figs. 156-159)

*Neophyllobius horridus* DE LEON, 1958: 178-179 (not Berlese, 1886).

Female: Body length 310  $\mu\text{m}$ , width 235  $\mu\text{m}$ . Length of legs: 485; 440; 470; 500  $\mu\text{m}$ . Six pairs of *mc*: 90; 85; 155; 90; 90; 40  $\mu\text{m}$ . Nine pairs of *l*: 60; 60; 50; 45; 80; 55; 60; 50; 40  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Type material: Holotype ♀, Mexico, Jal, on unknown host, 22.iii.1957, D. DE LEON (1600 MCZ).

Remarks. The name *N. horridus* was already used by BERLESE (1886) and is a synonym of *Tetranychopsis horridus* (CAN. & FANZ., 1876). As the species name *Neophyllobius horridus* is used for a second time by DE LEON 1958, it has to be renamed. The species is named after Dr. D. DE LEON, who found and described this species first.

*Neophyllobius hispanicus* spec. nov.

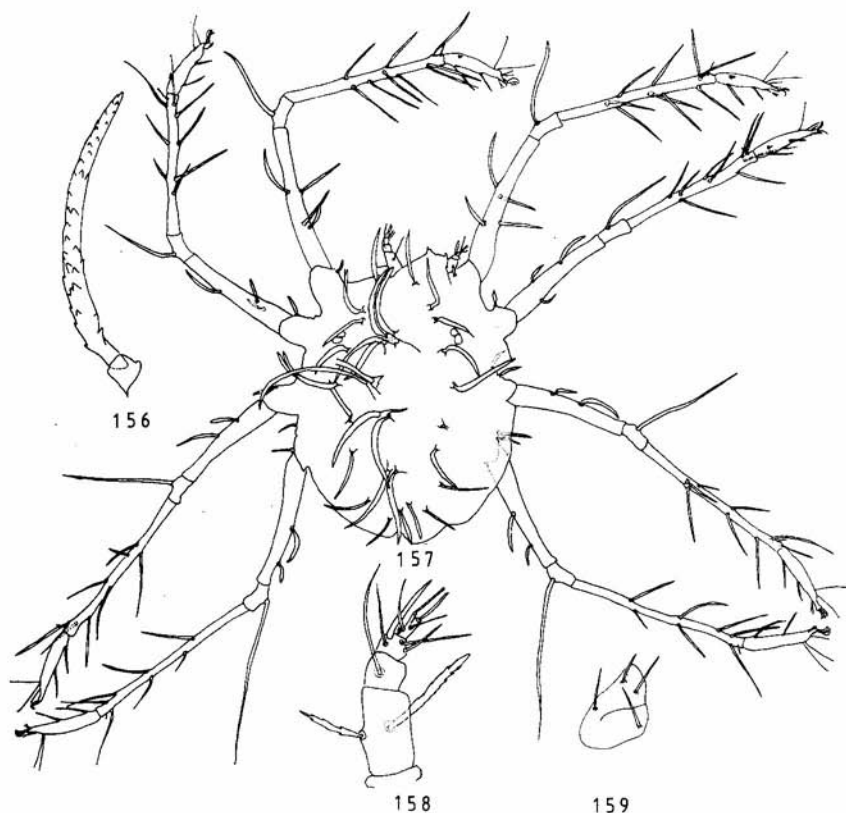
(figs. 160-163)

Female: Body length 300  $\mu\text{m}$ , width 260  $\mu\text{m}$ . Length of legs: 445  $\mu\text{m}$ , 380  $\mu\text{m}$ , 410  $\mu\text{m}$ , 445  $\mu\text{m}$ . Six pairs of *mc*: 40; 40; 85; 80; 60; 30  $\mu\text{m}$ . Nine pairs of *l*: 60; 50; 50; 50; 70; 50; 45; 30; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1, tarsus 2 + 2.

Male: Unknown.

Type material: Holotype ♀, Spain, ex orange leaves, F. GARCIA-MARI (VUP).

40. Most distal seta on femur I longer than the third one . . . . 41  
 Most distal seta on femur I shorter than the third one . . . . .  
 . . . . . *N. communis*



156-159. *Neophyllobius deleari* nom. nov., ♀. 156, seta  $l_5$ ; 157, dorsal view; 158, pedipalp; 159, coxae I-II

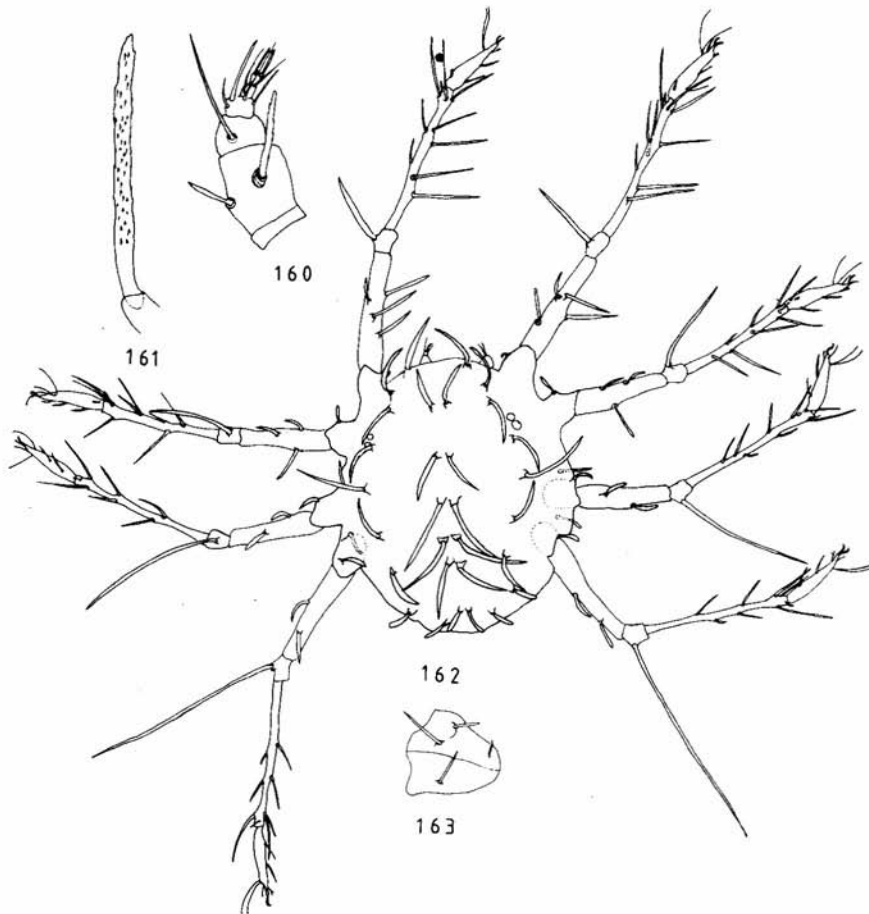
41.  $Mc_2$  shorter than  $mc_5$ ;  $mc_1$  shorter than  $mc_5$  . . . *N. lachishensis*  
 $Mc_2$  longer than  $mc_5$  . . . . . *N. levanticola*  
 (continued on p. 139)

***Neophyllobius communis* GERSON**

(figs. 164-167)

*Neophyllobius communis* GERSON, 1968: 432-434.

Female: Body length (300)  $\mu\text{m}$ , width (265)  $\mu\text{m}$ . Length of legs: (430-440); (385); (420); (435-470)  $\mu\text{m}$ . Six pairs of  $mc$ : (40-45); (55-60); (125);

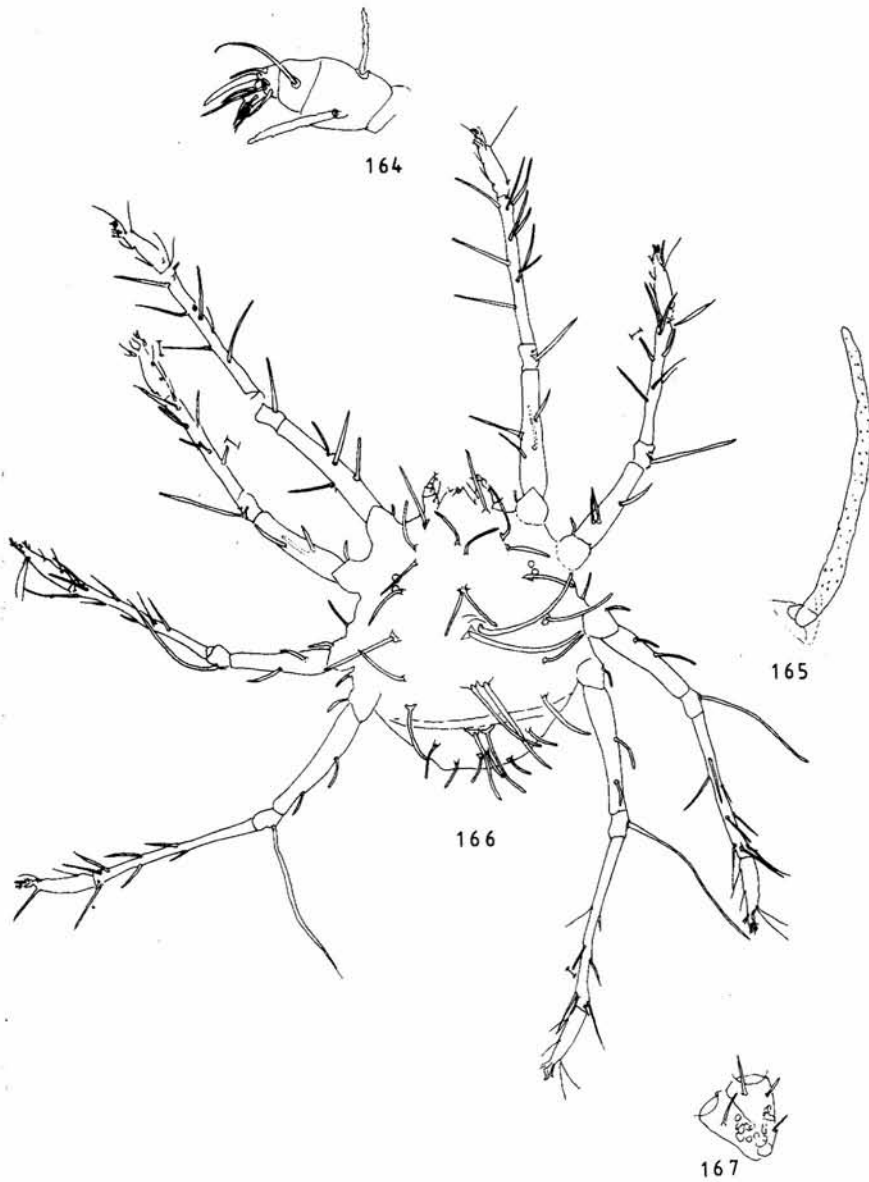


160-163. *Neophyllobius hispanicus* spec. nov., ♀. 160, pedipalp; 161, seta  $I_5$ ; 162, dorsal view; 163, coxae I-II

(120-155); (80-90); (25-35)  $\mu\text{m}$ . Nine pairs of  $l$ : (60-70); (55-55); (45-50); (45-55); (85); (45-55); (55-60); (30-35); (25-30)  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Material examined: Paratypes: ♀, Israel, Misgav Am, in leaf litter, 25.vii.1966, U. GERSON (1810 HUI); 1 ♀, Israel, Hagoshrim, leaf litter,



164-167. *Neophyllobius communis* GERSON, ♀. 164, pedipalp; 165, seta  $l_5$ ; 166, dorsal view; 167, coxae I-II

11.ix.1966, U. GERSON (1917 USNM); 1 ♀, Israel, Nes Ziona, pine litter, 30.ix.1965, U. GERSON (1394 HUJ); 1 ♀, Israel, Rehovot, pine litter, 23.x.1966, U. GERSON (1916 HUJ); 1 ♀, Israel, Nes Ziyiyona, on pine litter, 26.ix.1966, U. GERSON (1915 BMNH).

Other published material: Holotype ♀, Israel, Nes Ziyiyona, on pine litter, 31.x.1966, U. GERSON (HUJ). Paratypes: 2 ♀, 22.xi.1964; 1 ♀, 26.ix.1966, both on pine litter, Israel, Nes Ziyiyona, U. GERSON; and many additional ♀♀ not designated as type material at Nes Ziyiyona and Rehovot, on pine litter, throughout the year.

*Neophyllobius lachishensis* spec. nov.

(figs. 168-171)

Female: Body length 265 µm, width 250 µm. Length of legs: 500; 435; 480; 490 µm. Six pairs of *mc*: 55; 60; 125; 115; 85; 40 µm. Nine pairs of *l*: 60; 55; 55; 60; 80; 55; 60; 35; 30 µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Type material: Holotype ♀, Israel, Lachis, on pine litter, 23.xi.1965, U. GERSON (no. 1482 HUJ).

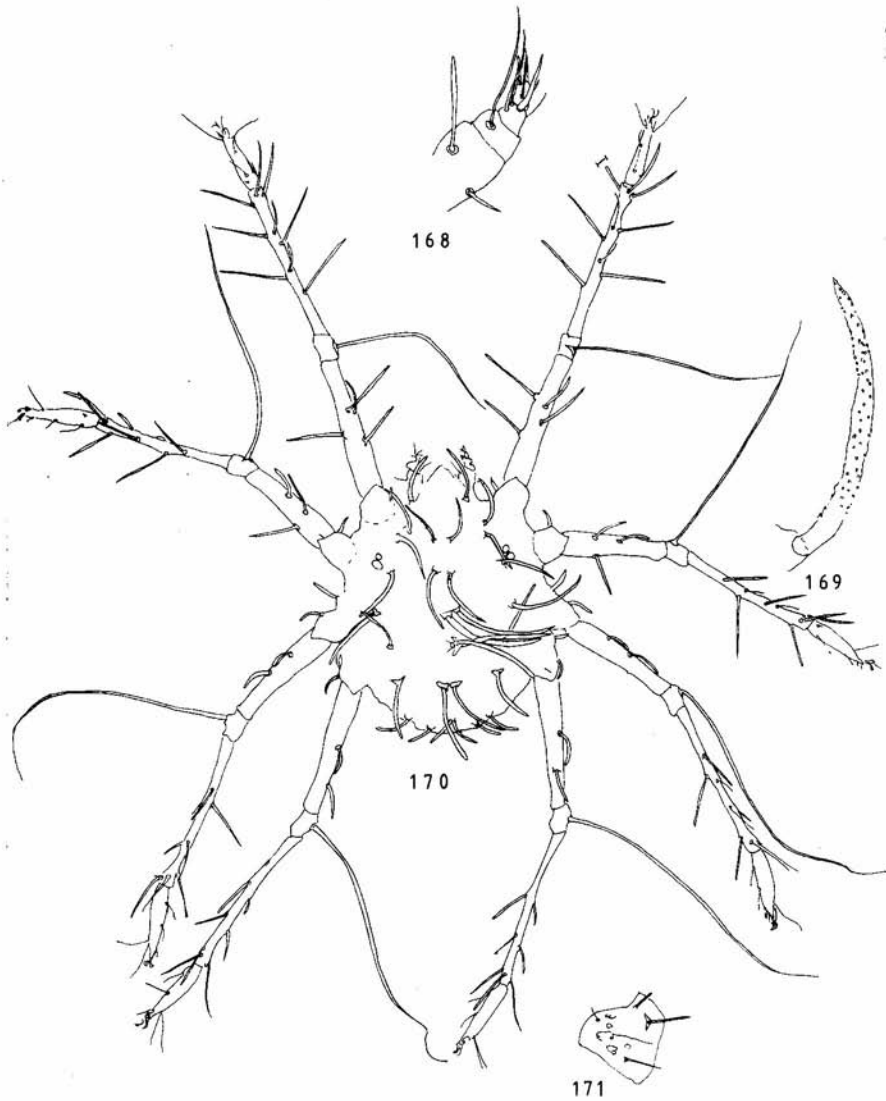
Remarks. The two pleural positioned setae on coxa I are very long. The *mc*<sub>1</sub> and *mc*<sub>2</sub> are longer than that of *N. communis*. The first (most distal seta) and second seta on femur I are long while the third seta is shorter and gives a curved impression, the fourth seta is long again.

*Neophyllobius levanticola* spec. nov.

(figs. 172-175)

Female: Body length 330 µm, width 285 µm. Length of legs: 570; 465; 530; 595 µm. Six pairs of *mc*: 80; 100; 140; 115; 80; 45 µm. Nine pairs of *l*: ?; 65; 70; 65; 85; 70; 70; 55; 45 µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.



168-171. *Neophyllobius lachishensis* spec. nov., ♀. 168, pedipalp; 169, seta  $I_3$ ; 170 dorsal view; 171, coxae I-II





172-175. *Neophyllobius levanticola* spec. nov., ♀. 172, palp-tibia and -tarsus; 173, dorsal view; 174, seta I<sub>5</sub>; 175, coxae I-II

Type material: Holotype ♀, Israel, Arad, under stone, 16.v.1957, U. GERSON (2081 HUI). Paratypes: 1 ♀, with the same data and place as the holotype (2083 HUI); 1 ♀, Israel, Devir, in litter, 22.vi.1967, U. GERSON (2079 HUI).

Remarks. The two pleural positioned setae on coxa I are very different in length, one is three times longer than the other.

*N. levanticola* looks like *N. communis* and *N. lachishensis* but the third seta on tibia III and the second seta on tibia IV are much longer as that of *N. communis* and *N. lachishensis*. Proximal seta on the palpfemur shorter than in *N. communis*.

42. The third seta on femur I shorter than 1/2 the length of the fourth  
 . . . . . 43  
 The third seta on femur I longer than 1/2 the length of the fourth  
 . . . . . 48
43. Most distal seta on femur I not reaching the genu border;  $mc_1$   
 reaching the marginal side of the dorsum . . . . . *N. lamimani*  
 Most distal seta on femur I passing the genu border;  $mc_1$  not  
 reaching the marginal side of the dorsum . . . . . 44

(continued on p. 141)

### *Neophyllobius lamimani* MCGREGOR

(figs. 176-179)

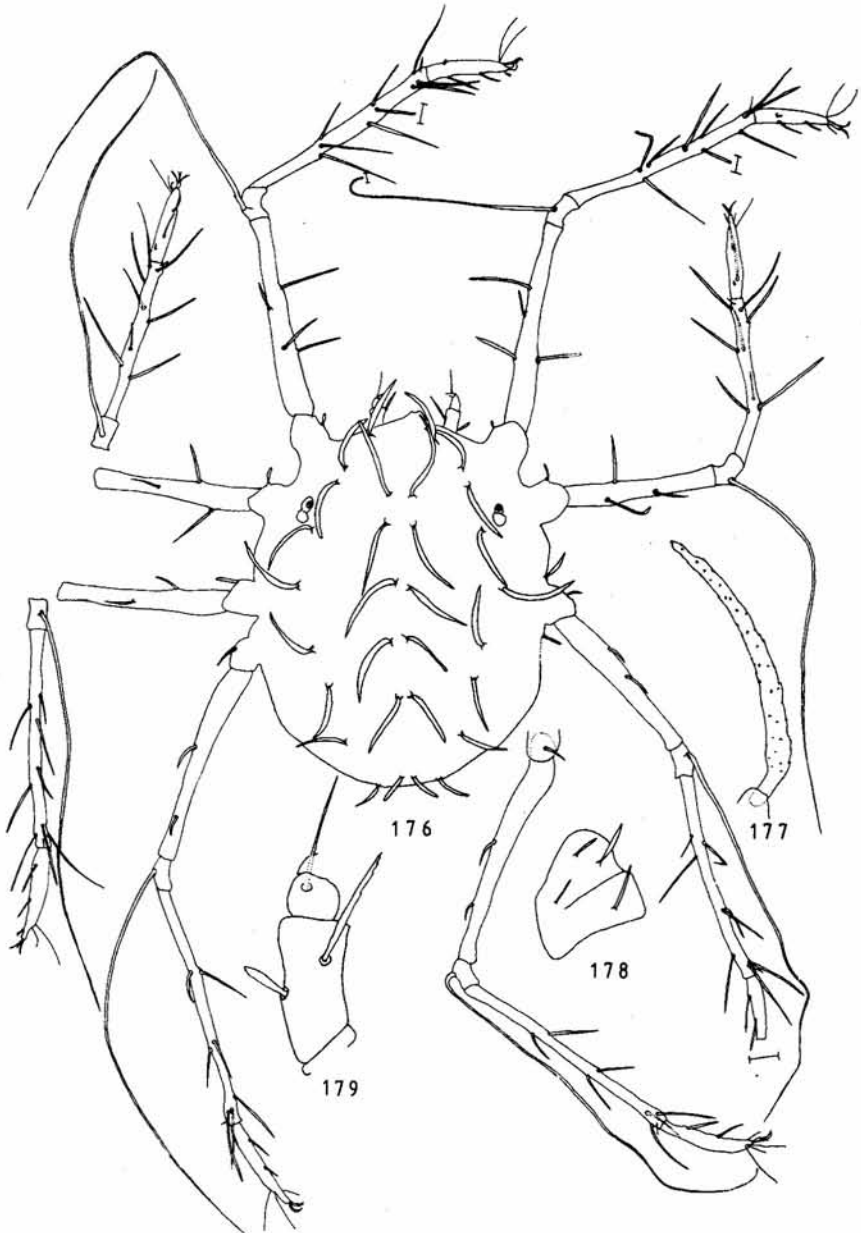
*Neophyllobius laminami* MCGREGOR, 1950: 62-63.

Female: Body length 405 µm, width 330 µm. Length of legs: 600; 515; 595; 655 µm. Six pairs of  $mc$ : 90/85; 85; 80; 75; 70; 35 µm. Nine pairs of  $l$ : 70; 55; 70; 60; 80; 60; 55; 50; 35 µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Material examined: Paratype ♀, USA, California, Fresno, lichen on fig tree, 30.vi.1936, E. W. BAKER (USNM).

Other published material: Holotype ♀, USA, California, Fresno, lichen on fig tree, grape and salt-grass, E. W. BAKER (Acad. Sciences no. 5695). Paratype ♀ (1749 USNM). Distribution: USA, California, Dinuba, Davis, Fresno and Planada.



176-179. *Neophyllobius lamimani* MCGREGOR, ♀. 176, dorsal view; 177, seta  $I_5$ ; 178, coxae I-II; 179, pedipalp

44. Most distal seta on femur I 3-4 times longer than the third seta . . . . . 45  
 Most distal seta on femur I shorter than 3 times the third seta . . . . . 47
45. Distal seta on femur II shorter than 1/3 of the length of the proximal one . . . . . *N. coxalis*  
 Distal seta on femur II longer than 1/3 of the length of the proximal one . . . . . 46
- (continued on p. 141)

***Neophyllobius coxalis* spec. nov.**

(figs. 180-183)

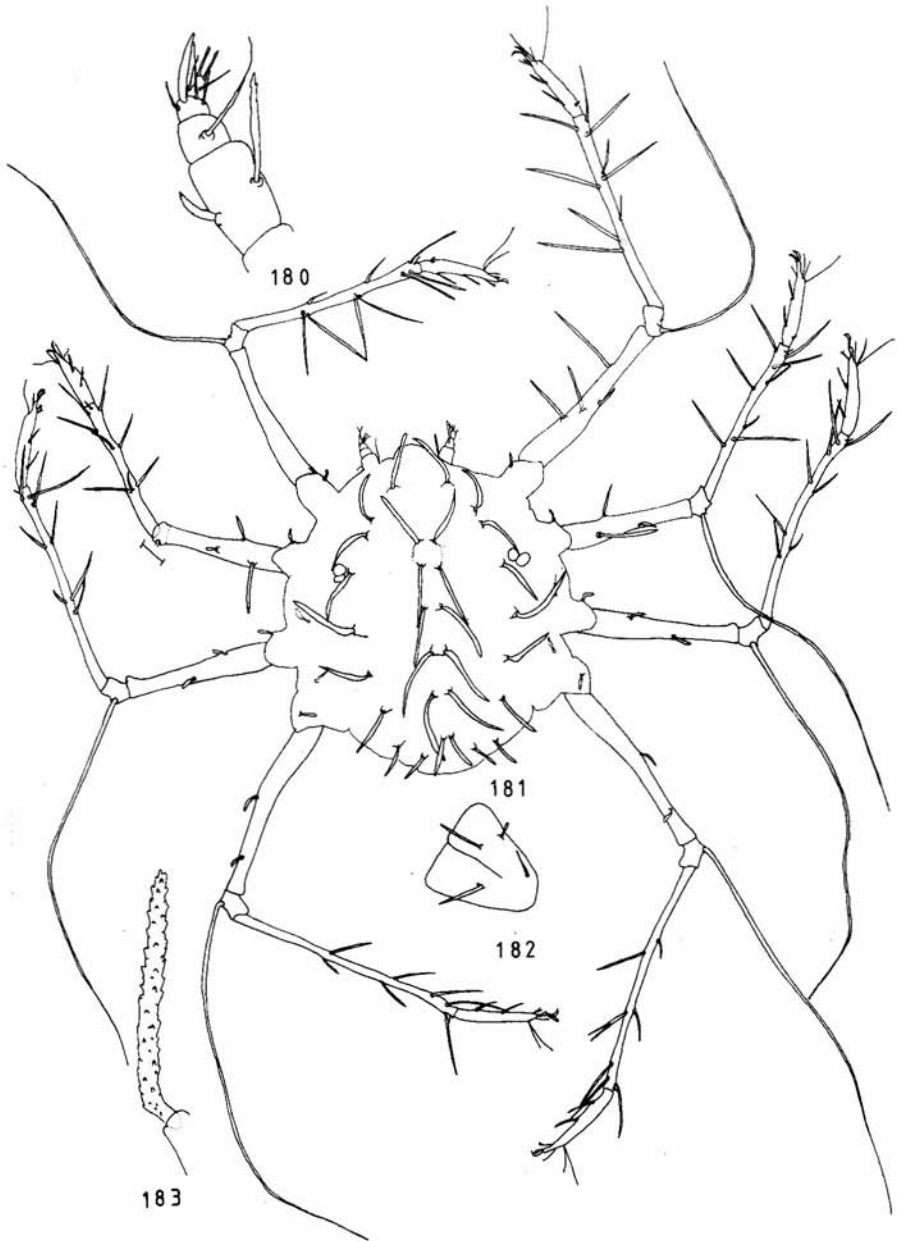
Female: Body length 355  $\mu$ m, width 310  $\mu$ m. Length of legs: 575; 390; 560; 720  $\mu$ m. Six pairs of *mc*: 60; 60; 75; 75; 70; 40  $\mu$ m. Nine pairs of *l*: 60; 55; 55; 55; 70; 55; 55; 35; 30  $\mu$ m. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Type material: Holotype ♀, USA, Colorado,, El Paso Country, on litter and trash of *Atriplex canescens*, 7.xii.1973, C. R. MAPPE (UMC). Paratypes: 2 ♀, same data as for the holotype (UMC).

Remark: The pleural positioned setae on coxa I are different in length.

46. *Mc*<sub>2</sub> reach just halfway bases of *mc*<sub>3</sub>; third seta on tibia I close to seta one and two; *mc*<sub>4</sub> longer than *mc*<sub>5</sub> . . . . . *N. arenarius*  
*Mc*<sub>2</sub> reach just till bases of *mc*<sub>3</sub>; third seta on tibia I far away from seta one and two; *mc*<sub>4</sub> as long as *mc*<sub>5</sub> . . . . . *N. oregonensis*
47. *Mc*<sub>2</sub> do not reach the bases of *mc*<sub>3</sub>; distance between bases of *mc*<sub>4</sub> and *mc*<sub>5</sub> shorter than normal . . . . . *N. danthoniae*  
*Mc*<sub>2</sub> reach bases of *mc*<sub>3</sub>; *mc*<sub>4</sub> not based close to *mc*<sub>5</sub> . . . . . *N. coloradensis*
- (continued on p. 147)



180-183. *Neophyllobius coxalis* spec. nov., ♀. 180, pedipalp; 181, dorsal view; 182, coxae I-II; 183; seta  $I_5$

*Neophyllobius arenarius* spec. nov.

(figs. 184-187)

Female: Body length 295  $\mu\text{m}$ , width 255  $\mu\text{m}$ . Length of legs: 560; 470; 515; 600  $\mu\text{m}$ . Six pairs of *mc*: 35; 35; 40; 45; 45; 25  $\mu\text{m}$ . Nine pairs of *l*: 45; 40; 40; 40; 55; 40; 40; 25; 25  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Type material: Holotype ♀, USA, Florida, Winter Haven, on sand pine can traps, 13.v.1970, M. H. MUMA (DCDG).

*Neophyllobius oregonensis* spec. nov.

(figs. 188-191)

Female: Body length 335  $\mu\text{m}$ , width 315  $\mu\text{m}$ . Length of legs: 560; 475; 530; 595  $\mu\text{m}$ . Six pairs of *mc*: 60; 60; 65; 80; 65; 35  $\mu\text{m}$ . Nine pairs of *l*: 65; 50; 55; 60; 75; 60; 60; 55/60; 55  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

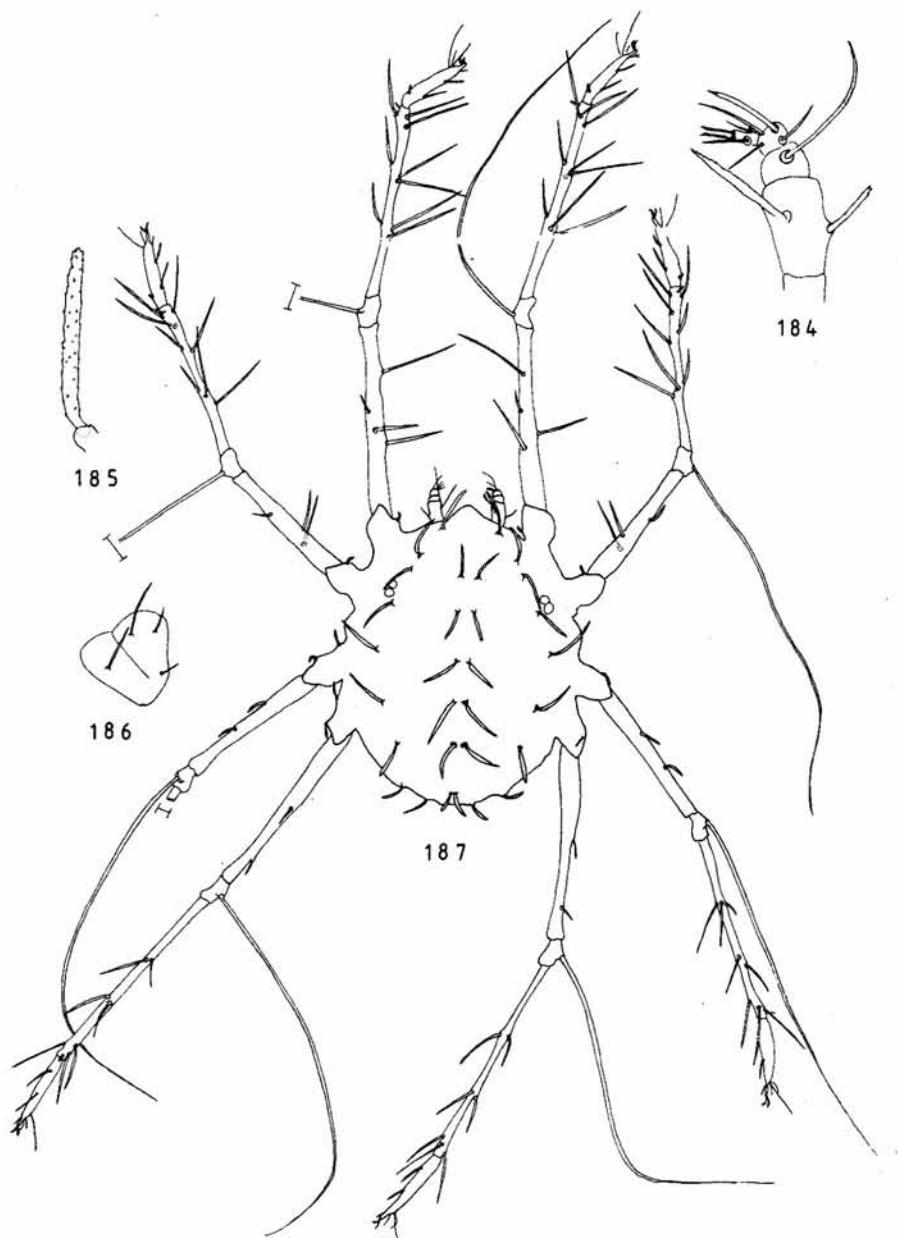
Type material: Holotype ♀, USA, Criterion Pass 3000, Wasco Co, on ex grass, 10.vi.1971, P. OMAN (ZMA).

Remark: The third seta on femur I is the shortest and the fourth the longest seta. First seta on femur II is much longer than the other setae. The proximal setae pair on the distal end of the tarsus are different in length.

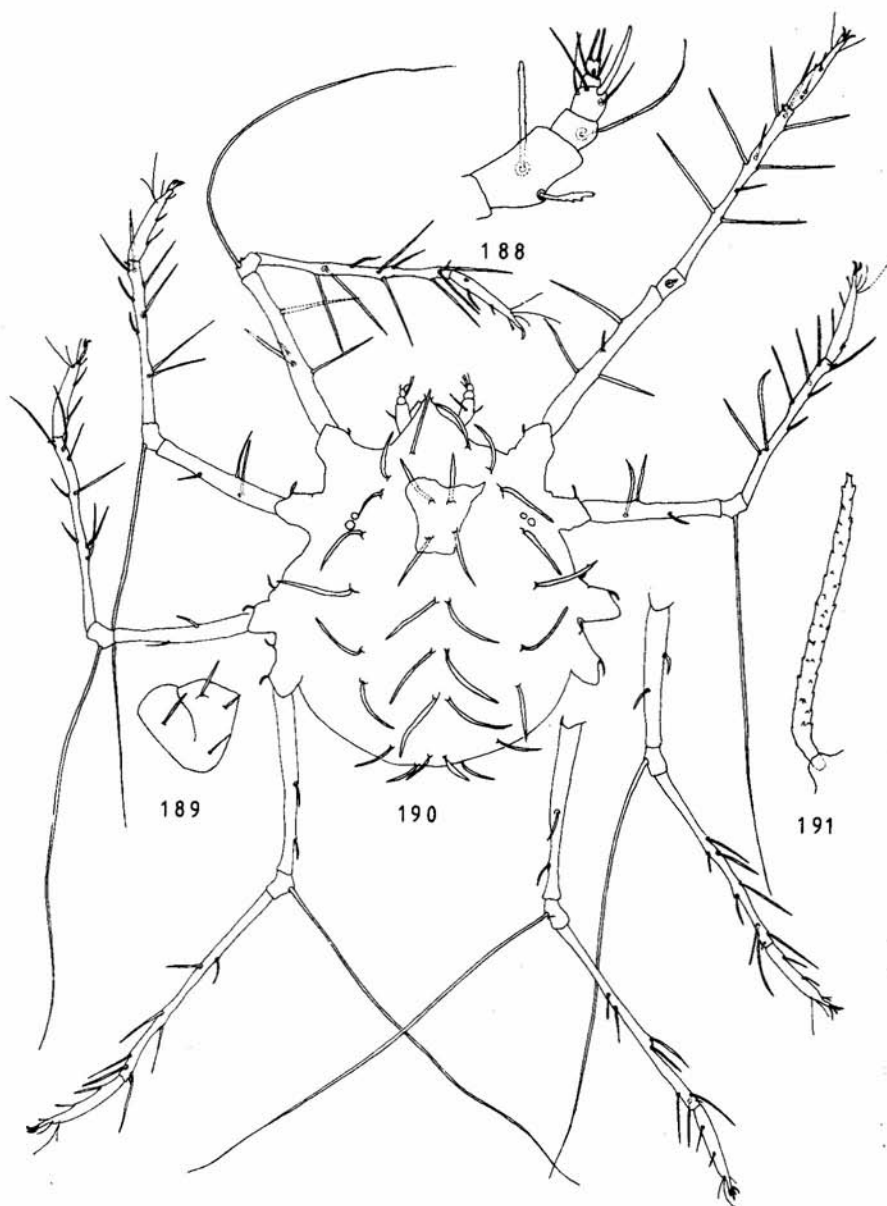
*Neophyllobius danthoniae* spec. nov.

(figs. 192-195)

Female: Body length 320  $\mu\text{m}$ , width 270  $\mu\text{m}$ . Length of legs: 550; 450; 510; 560  $\mu\text{m}$ . Six pairs of *mc*: 40; 40; 55; 60; 55; 35  $\mu\text{m}$ . Nine pairs of *l*: 60;



184-187. *Neophyllobius arenarius* spec. nov., ♀. 184, pedipalp; 185, seta  $l_5$ ; 186, coxae I-II; 187, dorsal view



188-191. *Neophyllobius oregonensis* spec. nov., ♀. 188, pedipalp; 189, coxae I-II; 190, dorsal view; 191, seta I<sub>5</sub>





192-195. *Neophyllobius danthoniae* spec. nov., ♀. 192, pedipalp; 193, coxae I-II; 194; seta  $I_5$ ; 195, dorsal view

45; 45; 45; 60; 50; 55; 40; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Type material: Holotype ♀, USA, Missouri, 18 Mi. E. ECT. RTS 2892, North of Vichy, on *Danthonia spicata*, 12.ix.1973, S. E. THEWKE (set 730912-3 UMC).

*Neophyllobius coloradensis* spec. nov.

(figs. 196-200)

Female: Body length 360  $\mu\text{m}$ , width 270  $\mu\text{m}$ . Length of legs: 560; 405; 530; 640  $\mu\text{m}$ . Six pairs of *mc*: 55/75; 80; 80; 80; 80; 45  $\mu\text{m}$ . Nine pairs of *l*: 60; 55; 55; 60; 80; 60; 55; 45; 35  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

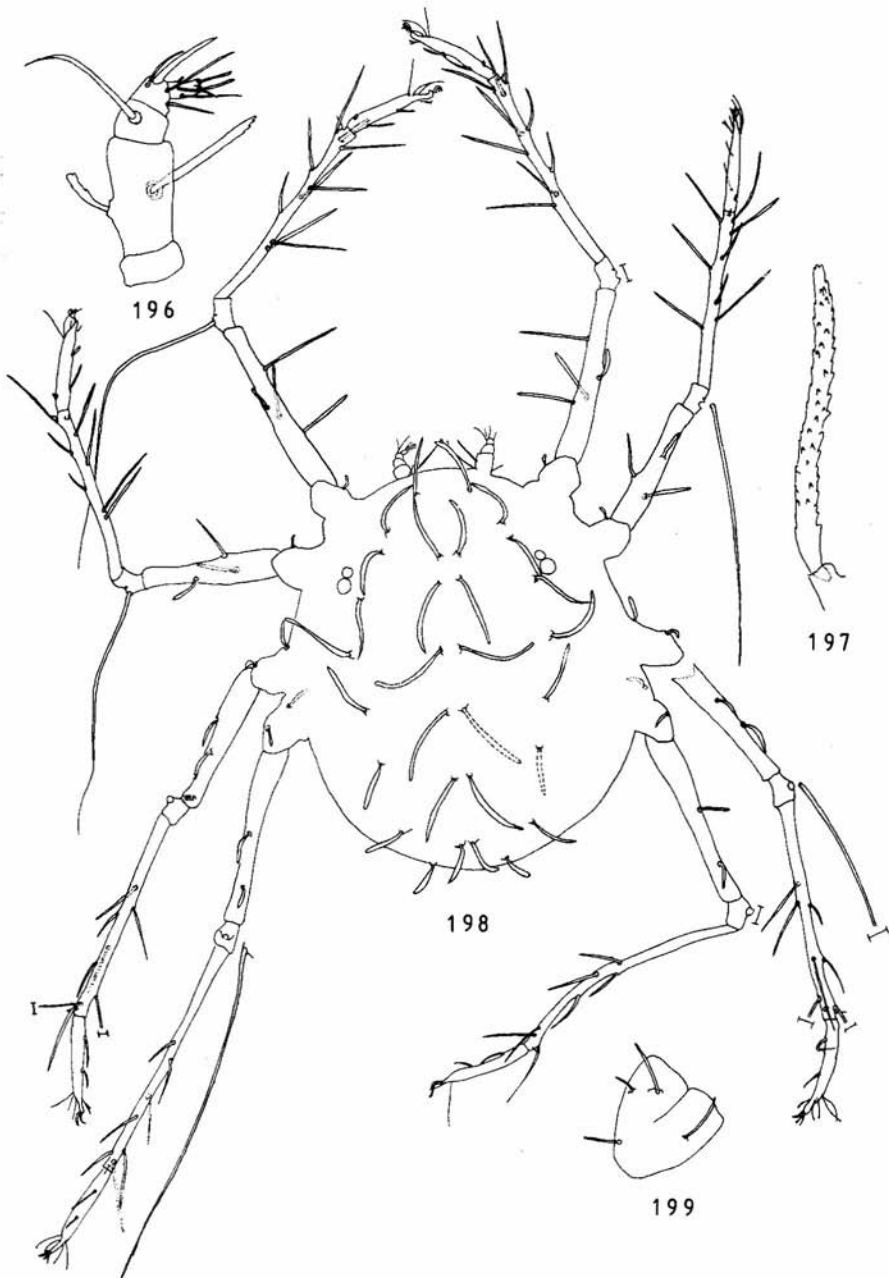
Protonymph: Six pairs of *mc* and nine pairs of *l*. Leg setation: coxae 3-1-2-0, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 6-6-5-3, tarsi 9-9-7-5.

Type material: Holotype ♀, USA, Colorado, Nunn, pawnee grass land, pasturage, 26.vi.1971 (UMC). Paratype: 1 ♀ and one protonymph, with the same data as for the holotype.

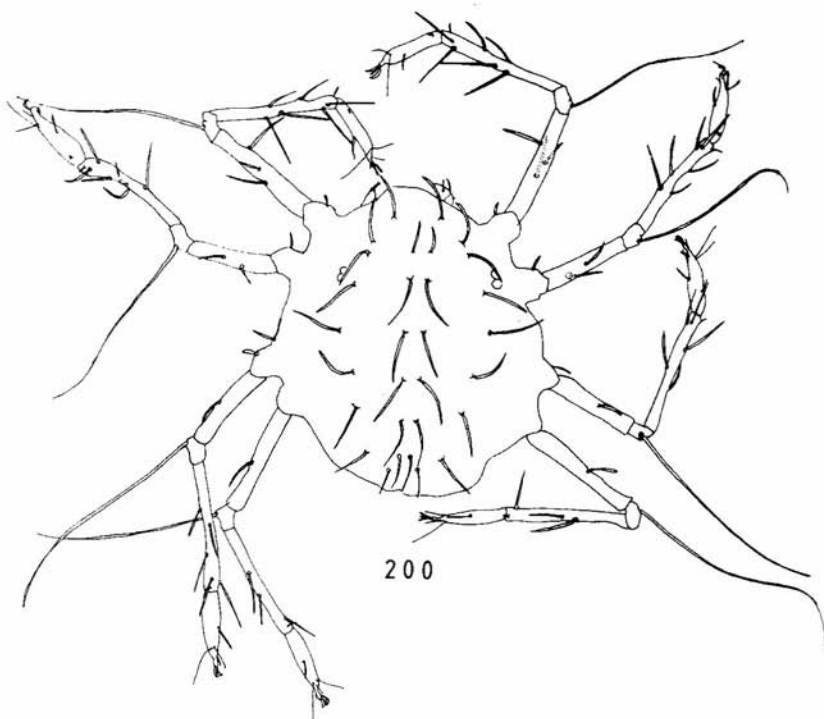
Remarks. In both specimens the *mc*<sub>1</sub> seta on the right side is considerably longer than that on the left side. On the left tarsus II there is an extra seta.

48. Distal femur I seta passes genu border . . . . . 49  
 Distal femur I seta just reaches or, are not reaching the genu border  
 at all . . . . . 54
49. Third seta on femur I as long or longer than the fourth seta  
 . . . . . 53  
 Third seta on femur I shorter than the fourth, but longer than 1/2  
 the length of the fourth . . . . . 50

(continued on p. 149)



196-199. *Neophyllobius coloradensis* spec. nov., ♀. 196, pedipalp; 197, seta  $I_5$ ; 198, dorsal view; 199, coxae I-II



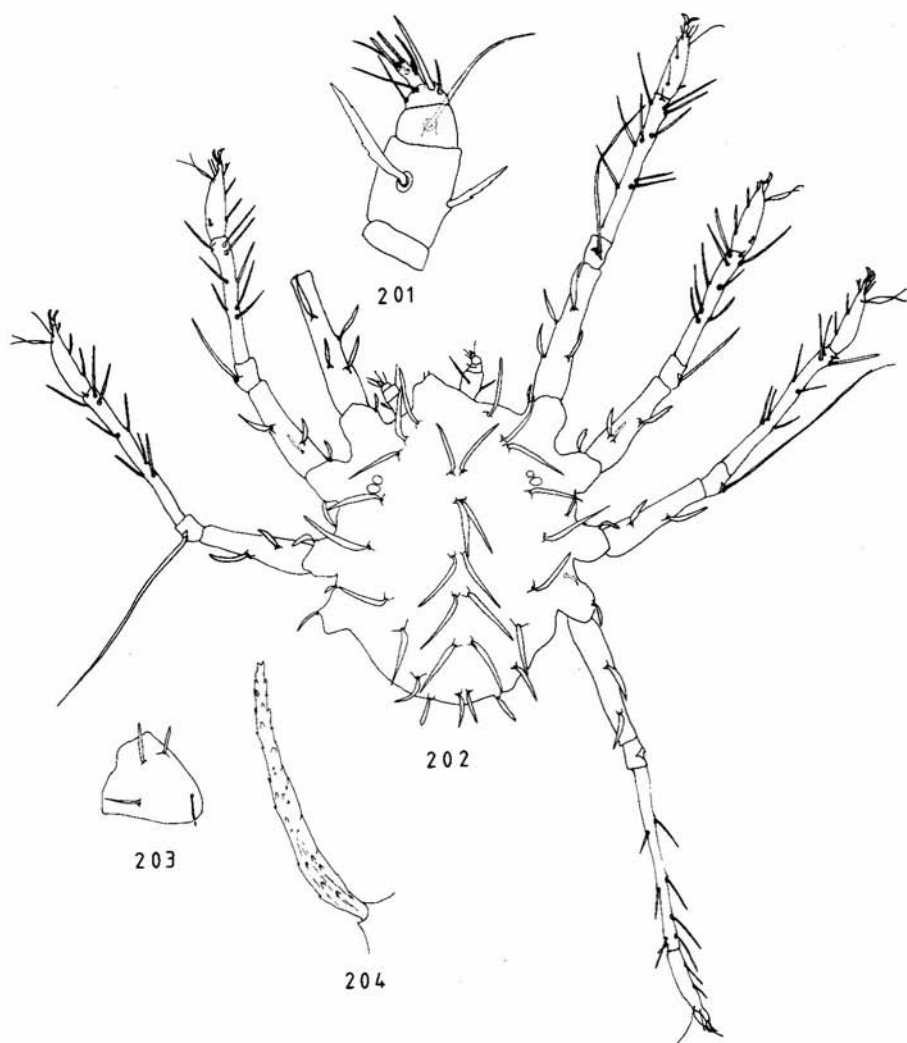
200. *Neophyllobius coloradensis* spec. nov., protonymph. Dorsal view

50.  $Mc_3$  longer than  $l_7$  . . . . . 51  
 $Mc_3$  shorter than or as long as  $l_7$  . . . . . 52
51. Second seta on femur I shorter than the third one; femur I setae more lanceolate . . . . . *N. parisianus*  
 Second seta on femur I longer than the third one; femur I setae more whip-like . . . . . *N. burrellis*
52.  $Mc_2$  do not reach bases of  $mc_3$  . . . . . *N. ponderosus*  
 $Mc_2$  just reach or pass bases of  $mc_3$  . . . . . *N. dickansoni*  
 (continued on p. 157)

***Neophyllobius parisianus* spec. nov.**

(figs. 201-204)

Female: Body length 345  $\mu$ m, width 260  $\mu$ m. Length of legs: 485, 420, 450, 525  $\mu$ m. Six pairs of  $mc$ : 65; 65; 70; 70; 65; 35  $\mu$ m. Nine pairs of  $l$ : 65;



201-204. *Neophyllobius parisianus* spec. nov., ♀. 201, pedipalp; 202, dorsal view; 203, coxae I-II; 204, seta  $I_5$

55; 60; 60; 80; 60; 55; 45; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Type material: Holotype ♀, France, Versailles, Av. de Paris, on *Platanus* spec., 4.x.1967, G. L. VAN EYNDHOVEN (ZMA).

***Neophyllobius burrellis* MCGREGOR**

(figs. 205-208)

*Neophyllobius burrellis* MCGREGOR, 1950: 59-60.

Female: Body length 375  $\mu\text{m}$ , width 300  $\mu\text{m}$ . Length of legs: 530; 420; 485; 560  $\mu\text{m}$ . Six pairs of *mc*: 45; 55; 60; 80; 90; 40  $\mu\text{m}$ . Nine pairs of *l*: 60; 55; 55; 55; 85; 60; 55; 35; 25  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

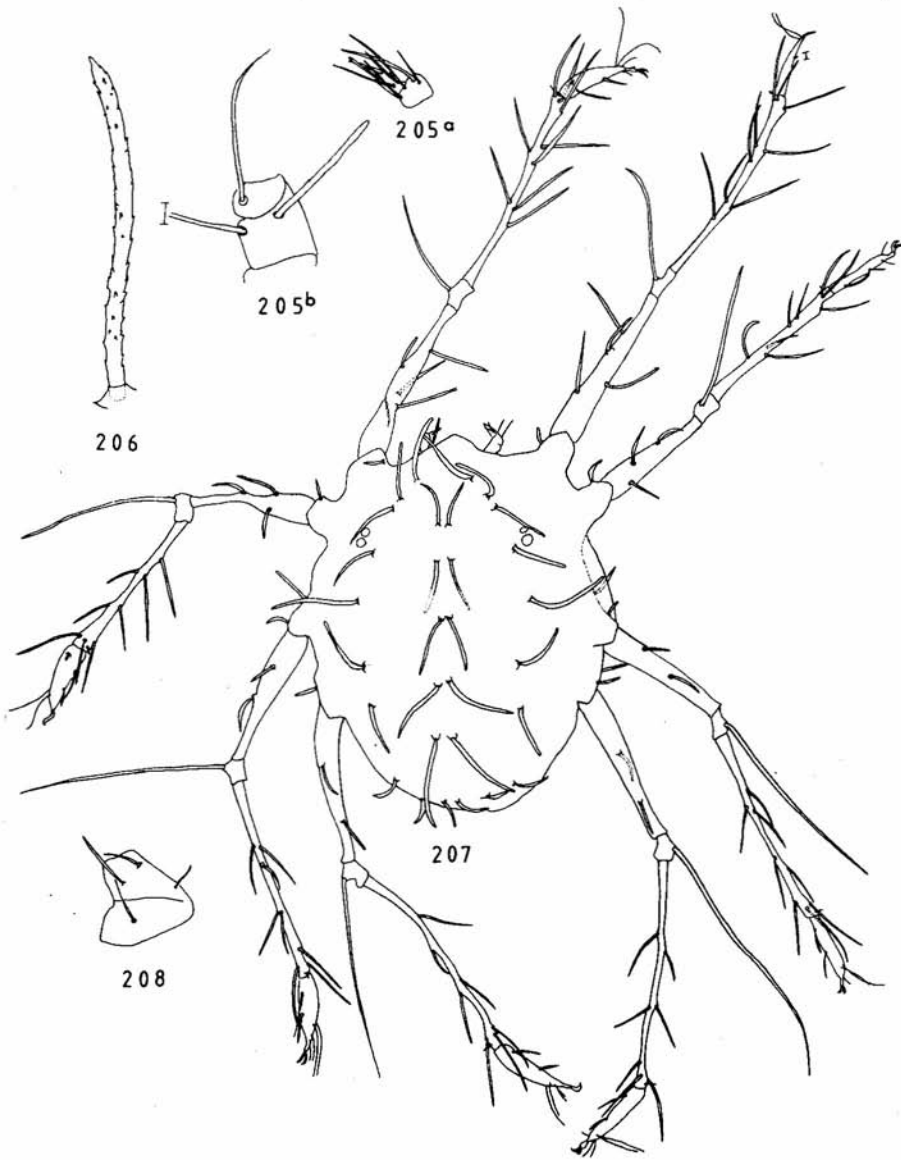
Type material: Holotype ♀, USA, Washington, Yakima, on apple bark, 13.vi.1949, R. W. BURELL (1896 USNM 10 Lot 49-14679).

***Neophyllobius ponderosus* spec. nov.**

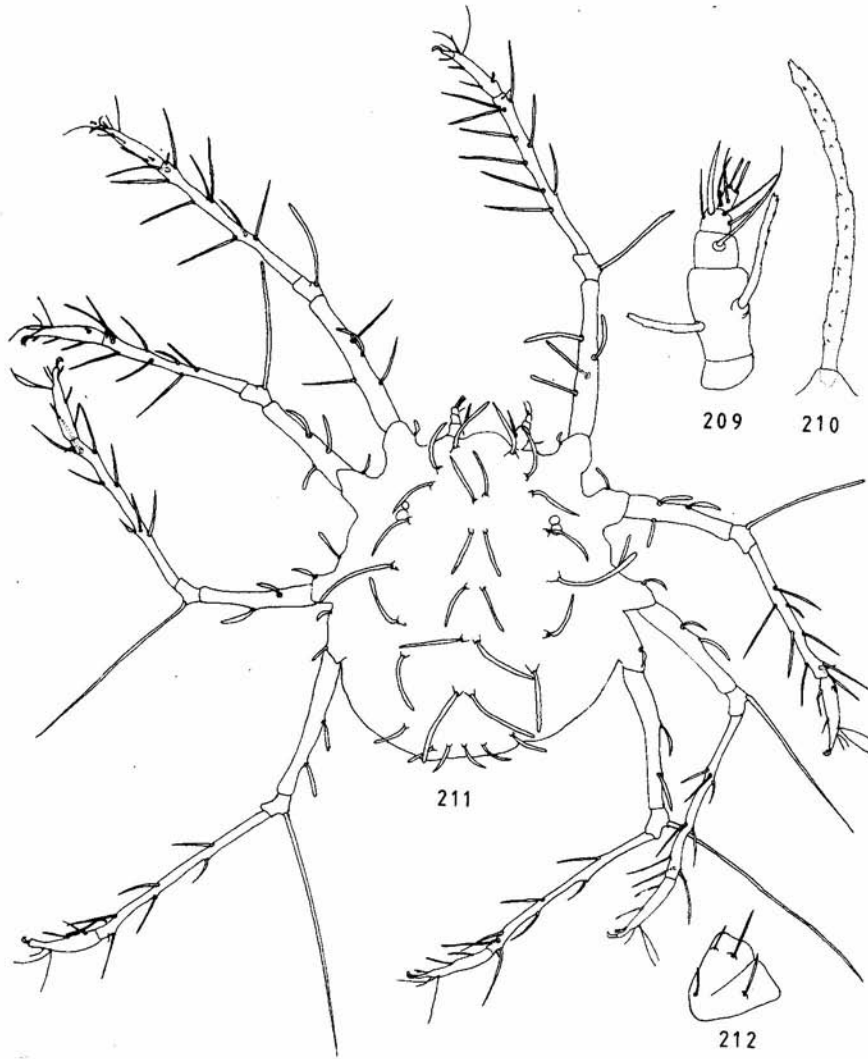
(figs. 209-214)

Female: Body length 295(345-365)  $\mu\text{m}$ , width 265(295-345)  $\mu\text{m}$ . Length of legs: 460(515-520); 375(415-535); 410(450-460); 470(530-540)  $\mu\text{m}$ . Six pairs of *mc*: 40(55); 40(55); 45(55); 55(70-75); 65(75-85); 30(35)  $\mu\text{m}$ . Nine pairs of *l*: 50(55-60); 45(50-55); 45(55); 45(55); 60(80-90); 45(55); 50(60); 35(35-40); 30(30)  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.



205-208. *Neophyllobius burrellis* MCGREGOR, ♀. 205 a-b, pedipalp; 206, seta  $l_5$ ; 207, dorsal view; 208, coxae I-II



209-212. *Neophyllobius ponderosus* spec. nov., ♀. 209, pedipalp; 210, seta  $l_5$ ; 211 dorsal view; 212, coxae I-II



Protonymph: Six pairs of *mc* and nine pairs of *l*. Leg setation: coxae 3-1-2-0, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 6-6-6-3, tarsi 9-9-7-5.

Larva: Five pairs of *mc* and nine pairs of *l*. Leg setation: coxae 2-0-0, trochanters 0-0-0, femora 2-2-1, genua 1-1-1, tibiae 3-3-3, tarsi 7-7-5.

Type material: Holotype ♀, USA, Oregon, Harney Co, Poison Creek Rd., 13 mi. n. of Burns 5300, on ex aspen and ponderosa pine duff., 17.vii.1972, E. M. BENEDICT (E-148) (ZMA). Paratypes: 1 ♀ with the same data as for holotype: 1 larva, USA, Oregon, Harney Co., Malheur national forest, 16 mi. n. of Burns, ex. loosened ponderosa pine bark E. M. BENEDICT (E-145) (ZMA); 1 ♂ and 3 protonymphs, USA, Wyoming, 30 mi. SW wheatland, bl. locust bark, 15.i.1972, I. J. SMITH (set. 720115-2 UMC).

*Neophyllobius dickansonii* spec. nov.

(figs. 215-218)

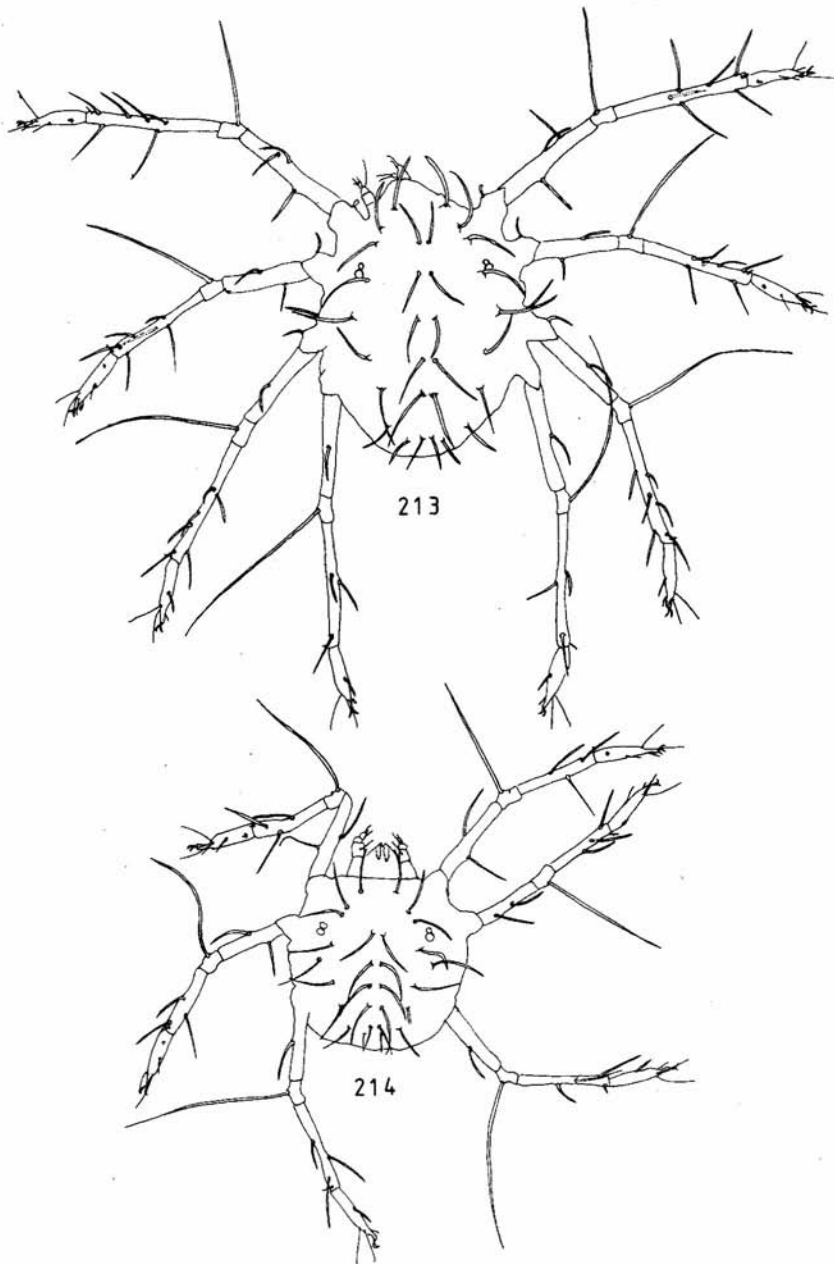
Female: Body length 290(345-360) µm, width 235(295-310) µm. Length of legs: 500(500-520); 415(425-435); 450(460-500); 505(530-540) µm. Six pairs of *mc*: 50(55); 55(55-60); 55(55-60); 65(70-80); 80(85); 35(35) µm. Nine pairs of *l*: 60(60-65); 55(50-60); 55(55-60); 60(55-60); 80(85-90); 55(55-65); 60(70); 35(35-40); 25(30-35) µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

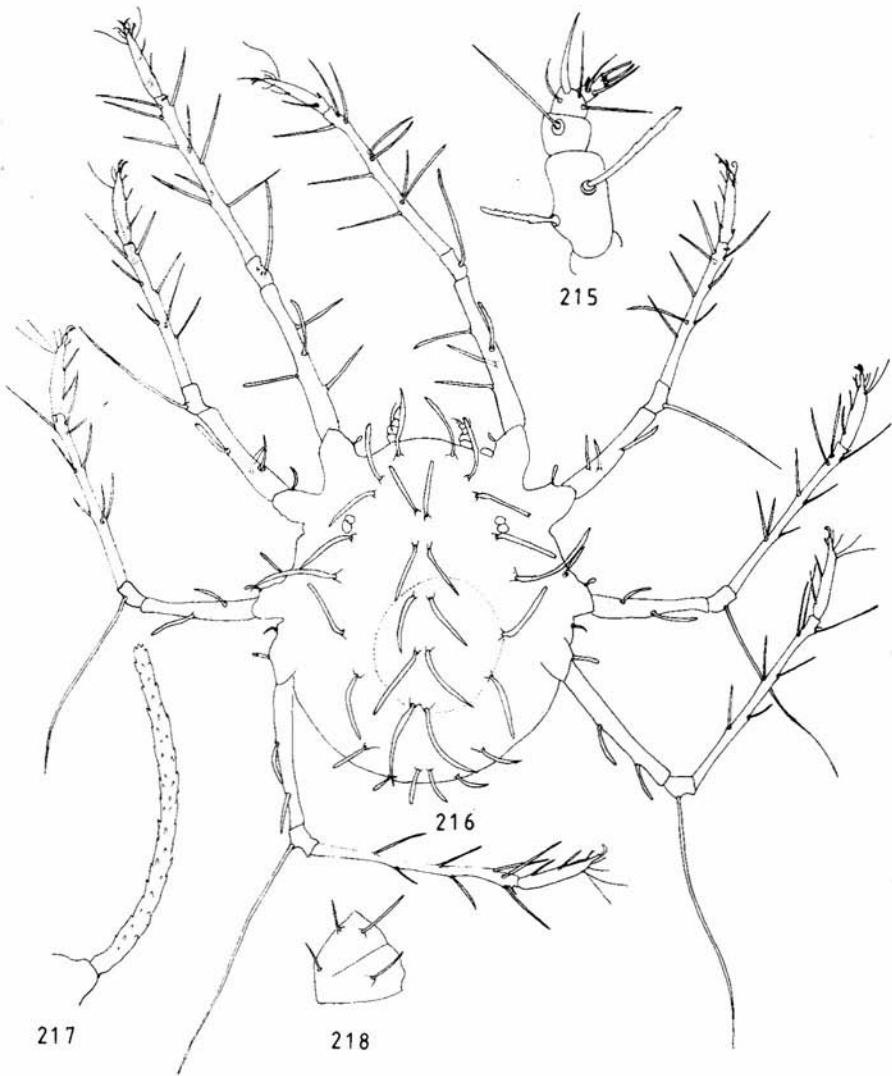
Type material: Holotype ♀, USA, Oregon, Klamath Co, 1 mi. sw. Chiloquin, on Manzanita litter, 6.iv.1961, E. A. DICKANSON (4200) (ZMA). Paratypes: 3 ♀, with the same data as the holotype (ZMA).

Remark: This species is also figured in KRANTZ, 1970: p. 216 fig. 88-1; KRANTZ, 1978: p. 332 fig. 77-1; also on frontpage of "Acarology Newsletter" of the Acarological Society of India 1975, edited by Dr. G. P. CHANNABASAVANNA (Personal communication 1984).

This species is named after E. A. DICKANSON.



213-214. *Neophyllobius ponderosus* spec. nov., protonymph. 213, dorsal view; larva. 214, dorsal view



215-218. *Neophyllobius dickansoni* spec. nov., ♀. 215, pedipalp; 216, dorsal view; 217, seta  $l_5$ ; 218, coxae I-II

53. Genu III setae reaching or just passing first row of tibia setae; distal setae on femur III reach genu border . . . . . *N. sturmerwoodi*

Genu III setae longer than tarsus border; distal seta on femur III does not reach genu border . . . . . *N. aesculi*  
(continued on p. 161)

***Neophyllobius sturmerwoodi* spec. nov.**

(figs. 219-224)

Female: Body length 350(328-429)  $\mu\text{m}$ , width 278(265-359)  $\mu\text{m}$ . Length of legs: 415(400-484); 345(380-415); 375(415-450); 440(460-500)  $\mu\text{m}$ . Six pairs of *mc*: 60(60-80); 65(65-90); 65(60-80); 65(70-90); 60(60-75); 35(30-50)  $\mu\text{m}$ . Nine pairs of *l*: 60(60-80); 55(55-70); 65(60-80); 55(50-80); 75(70-95); 45(45-70); 55(55-70); 40(45-60); 35(35-45)  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Protonymph: Six pairs of *mc*. Nine pairs of *l*. Leg setation: coxae 3-1-2-0, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 5-5-5-3, tarsi 9-9-7-5.

Larva: Five pairs of *mc*. Nine pairs of *l*. Leg setation: coxae 2-0-0, trochanters 0-0-0, femora 2-2-1, genua 1-1-1, tibiae 3-3-3, tarsi 7-7-5.

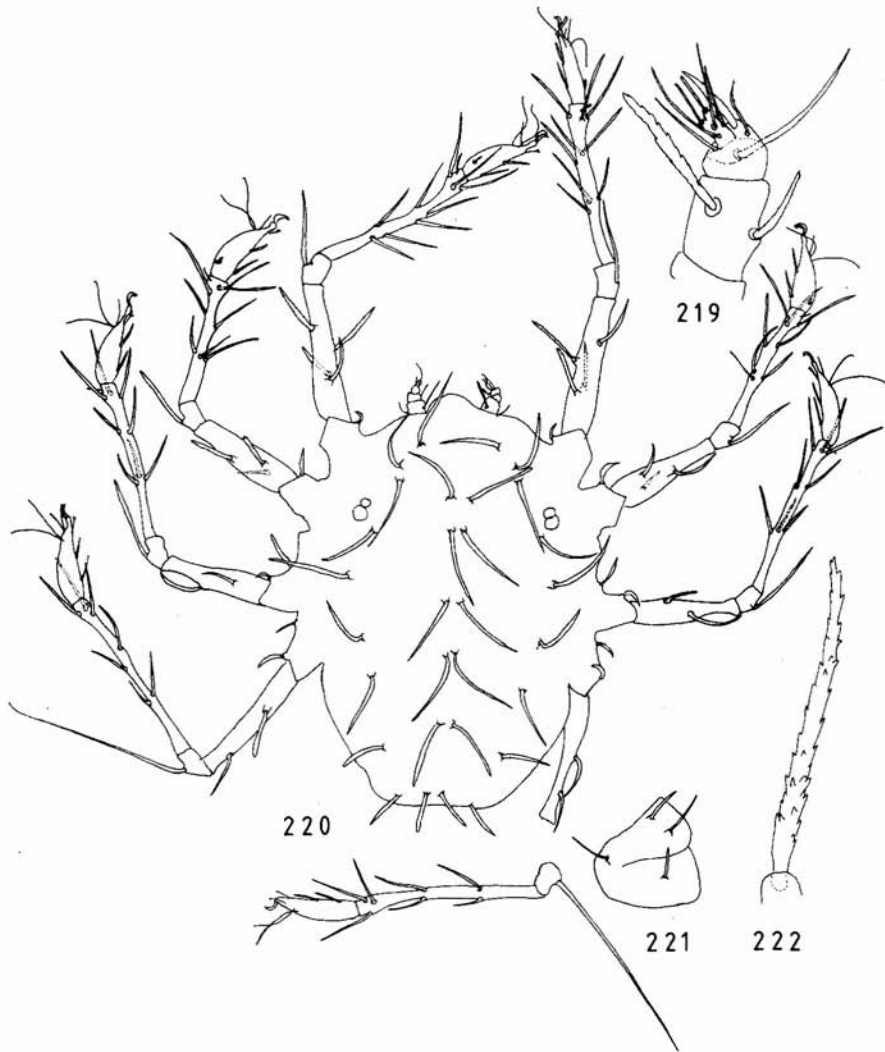
Type material: Holotype ♀, New Zealand, Woolston Church, Davis Gelatine Orchard, 9.vi.1960, G. F. THIELE (UNSW). Paratypes: 5 ♀ and 3 protonymphs, 3.vi.1960; 4 ♀ and 2 larvae, 1.vii.1960; 2 ♀ and 2 protonymphs, 9.vi.1960. All from the same place and host as the holotype (UNSW); 1 ♀, France, St. Genis-Laval (Rhône), on *Prunus malinus*, 26.ii.1959, Milaire (leg. R. V. LYON) (ZMA).

***Neophyllobius aesculi* BOLLAND**

(figs. 225-228)

*Neophyllobius aesculi* BOLLAND, 1983: 42-47.

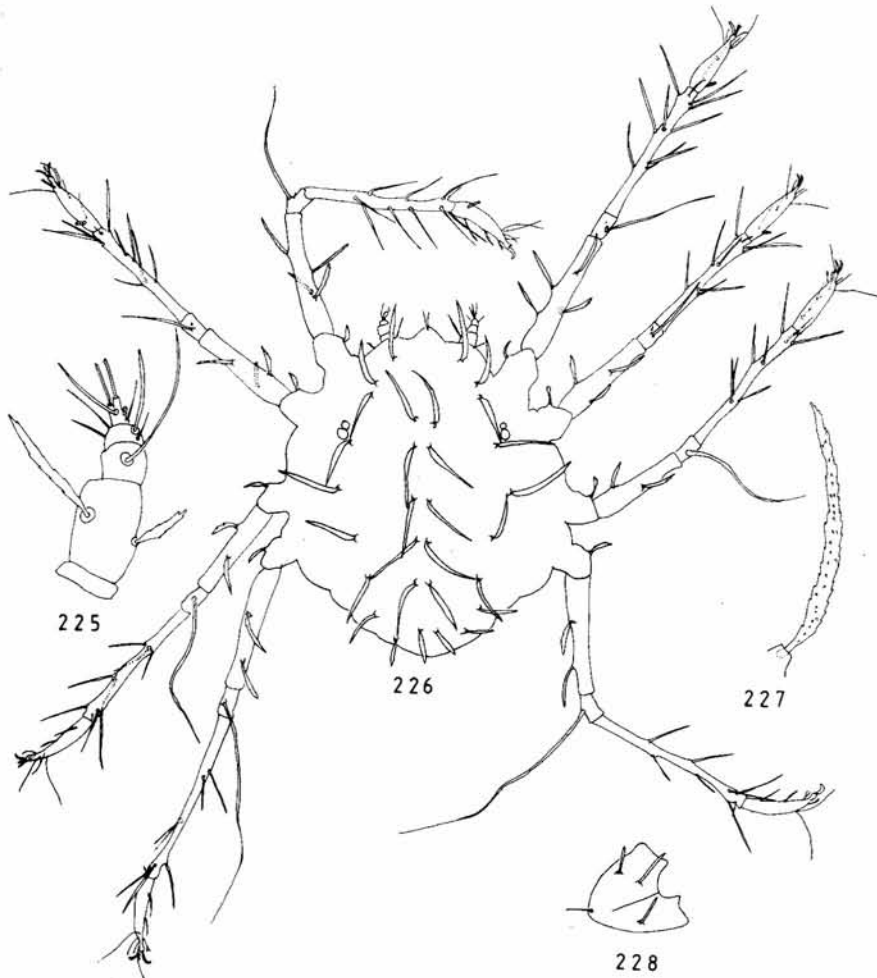
Female: Body length 340  $\mu\text{m}$ , width 280  $\mu\text{m}$ . Length of legs: 445; 385; 425; 470  $\mu\text{m}$ . Six pairs of *mc*: 60; 70; 60; 65; 60; 35  $\mu\text{m}$ . Nine pairs of *l*: 60; 55; 55; 55; 70; 55; 55; 40; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2,



219-222. *Neophyllobius sturmerwoodi* spec. nov., ♀. 219, pedipalp; 220, dorsal view; 221, coxae I-II; 222, seta  $I_5$



223-224. *Neophyllobius sturmerwoodi* spec. nov., protonymph. 223, dorsal view; larva. 224, dorsal view



225-228. *Neophyllobius aesculi* BOLLAND, ♀. 225, pedipalp; 226, dorsal view; 227, seta  $I_5$ ; 228, coxae I-II

trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Body smaller than that of the female.  $Mc_6$  reduced in length.

Deutonymph: Looks like adult, but special the genu setae I and II longer.

Protonymph: Six pairs of  $mc$  and nine pairs of  $l$ . Leg setation: coxae

3-1-2-0, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 5-5-5-3, tarsi 9-9-7-5.

Larva: Five pairs of *mc* and nine pairs of *l*. Leg setation: coxae 2-0-0, trochanters 0-0-0, femora 2-2-1, genua 1-1-1, tibiae 3-3-3, tarsi 7-7-5.

Material examined: Holotype ♀, The Netherlands, Amsterdam, on *Aesculus hippocastanum*, 1977, H. R. BOLLAND (ZMA 1977/B1). Paratypes: Allotype ♂, 1 ♀, 4 protonymphs, 6 chrysalids and one larva (ZMA 1977/B1, 1977/B2). Also many other specimens in author's collection.

New records are: 1 female, België, Tervuren, on *Aesculus* spec., 11.v.1967, G. L. v. EYNDHOVEN (ZMA); 2 ♀, and 6 larvae, België, Oudenaerde, on *Platanus woeker*, 10.v.1967, G. L. v. EYNDHOVEN (ZMA); 2 ♀, 1 ♂, 1 protonymph and 1 larva, France, Paris, P. d. Montsouris, 5.x.1967, G. L. v. EYNDHOVEN (ZMA).

54. None of the *mc* setae reach bases of next *mc* setae; all dorsal and femur setae short and small and equal in length; genu setae passing tarsus end . . . . . *N. tamarindi*

Some or all *mc* setae reach bases of the next *mc* setae . . . 55

(continued on p. 162)

### *Neophyllobius tamarindi* spec. nov.

(figs. 229-232)

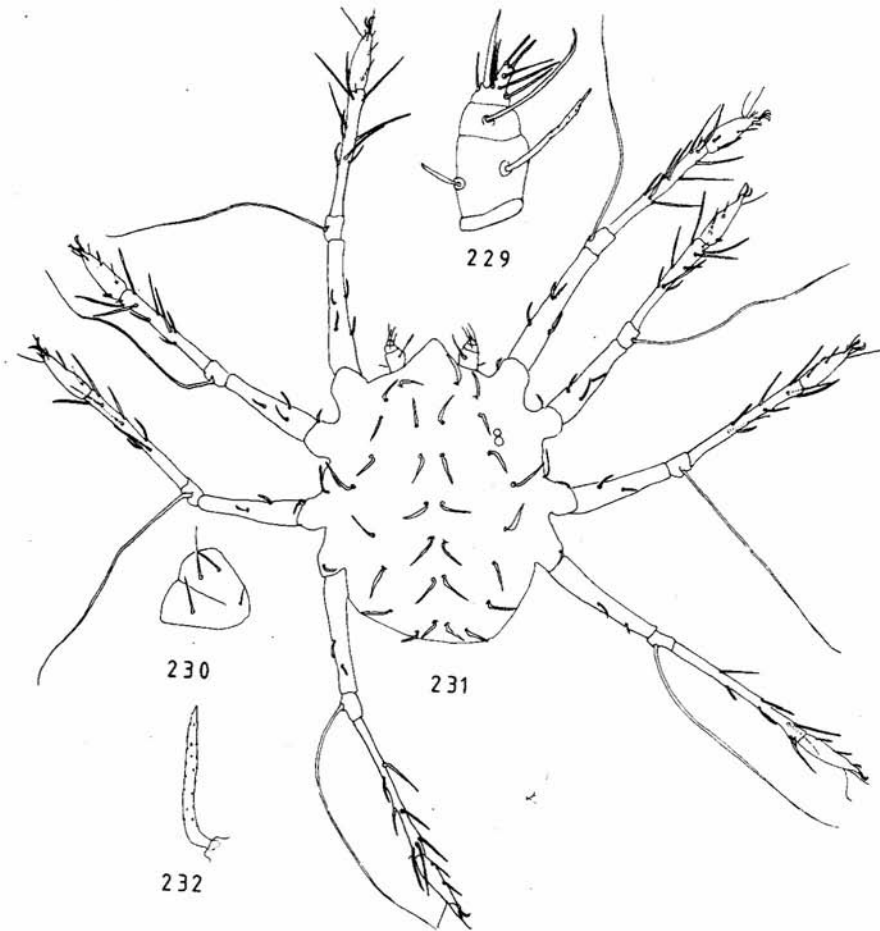
Female: Body length 295(265) µm, width 225 µm. Length of legs: 400; 345; 365; 415 µm. Six pairs of *mc*: 30(30); 30(30); 30(30); 35(30); 35(30); 20(25) µm. Nine pairs of *l*: 35(35); 25(30); 30(25); 30(25); 35(35); 35(25); 35(25); 30(30); 20(20) µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Body setae are very small and flagellate. Femur setae are short.

Male: Unknown.

Type material: Holotype ♀, USA, Florida, on big Pine Key, on *Tamarindus indica*, 7.iv.1971, W. H. PIERCE (DCDG). Paratype: 1 ♀, with the same data as the holotype (DCDG).





229-232. *Neophyllobius tamarindi* spec. nov., ♀. 229, pedipalp; 230, coxae I-II; 231, dorsal view; 232, seta  $I_5$

55. Some  $mc$  setae reach the bases of the next  $mc$  setae and are longer than the other  $mc$  setae, i.e.  $mc_4$  or  $mc_4$  and  $mc_5$  . . . . . 56  
 Nearly all or all  $mc$  setae bases of the next  $mc$  setae . . . . . 58
56.  $Mc_4$  and  $mc_5$  only longest  $mc$  setae; dorsal setae rounded at the top . . . . . *N. conocarpi*  
 Only  $mc_4$  setae longest  $mc$  setae . . . . . 57

(continued on p. 163)

*Neophyllobius conocarpi* spec. nov.

(figs. 233-237)

*Neophyllobius equalis*: MUMA, 1975: 49-50. (misidentification).

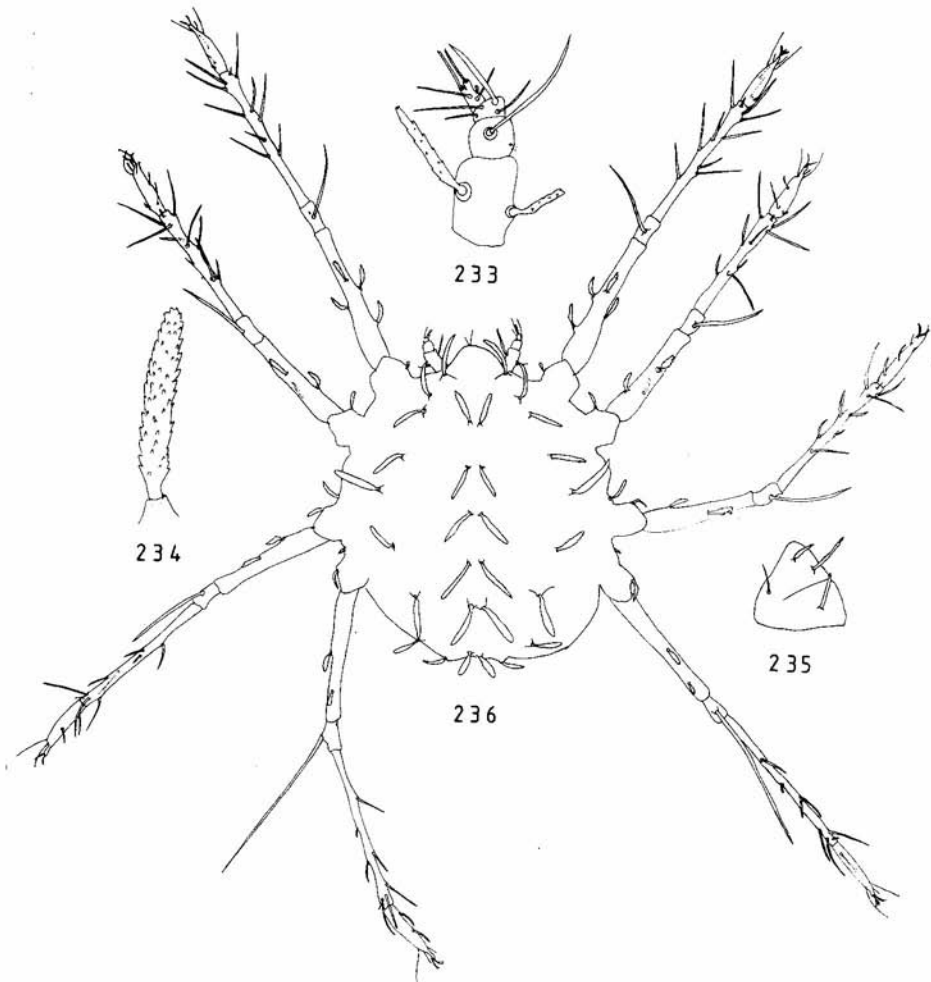
Female: Body length 265(280-295)  $\mu\text{m}$ , width 280(240-265)  $\mu\text{m}$ . Length of legs: 420(390-410); 360(350-355); 390(355-390); 430(395-425)  $\mu\text{m}$ . Six pairs of *mc*: 35(30-35); 35(30-35); 40(35-30); 45(35-35); 45(35-40); 25(22-?)  $\mu\text{m}$ . Nine pairs of *l*: 35(30-35); 35(30-35); 35(30-30); 35(30-30); 50(35-45); 30(30-30); 40(30-30); 30(25-30); 20(22-?)  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Type material: Holotype ♀, Florida, USA, on orange/WHT, Blk XX C. E. S., 27.vi.1960, J. A. M. Paratypes: 1 ♀, USA, Florida, Garden Key, Dry Tortugas, on *Cordia sebesten*, 10.v.1961, H. A. DENMARK (DCDG); 1 ♀, USA, Florida, Garden Key, on *Conocarpus erectus* L., 8.v.1961, H. A. DENMARK (DCDG); 1 ♀, USA, Florida, on orange/WHT, Blk XX C. E. S., 30.vi.1960, J. A. M. (DCDG); 1 ♀, USA, Florida, Lake Alfred, Blk XX, 26.ii.1964; 1 allotype ♂, USA, Florida, Garden Key, Dry Tortugas, on *Conocarpus erectus*, 8.v.1961, H. A. DENMARK (DCDG); 1 protonymph, USA, Florida, Lake Alfred, on *Citrus* leaf, 26.v.1954, J. MURPHY (DCDG); 1 protonymph, USA, Florida, Weirsdale, on orange/W. stripe, 20.ix.1959, J. A. M. (DCDG); 1 protonymph USA, Florida, Regers, Clermont, on orange, 24.xi.1959, J. A. M. (DCDG); 1 larva, USA, Florida, Weirsdale, on scaley leaves, 15.vi.1955, H. L. GREENE (DCDG/ 136-33).

Remark: MUMA's identification of *N. equalis*, is not correct because the dorsal setae are much shorter and not so strong dentated as in the type species of *N. equalis* MCGREGOR.

57. Femur setae very short; femur I setae 3 and 4 nearly in on level; marginal coxa I seta 1c more than two times longer than 1b (7:16); genu I seta passes tibia- and genu II and IV setae passing tarsi ends  
 ..... *N. lorioi*  
 Femur setae longer; marginal coxa I seta 1c nearly as long as 1b (12:15); none of the genu setae reaching tibia end .....  
 ..... *N. acaciae*  
 (continued on p. 167)



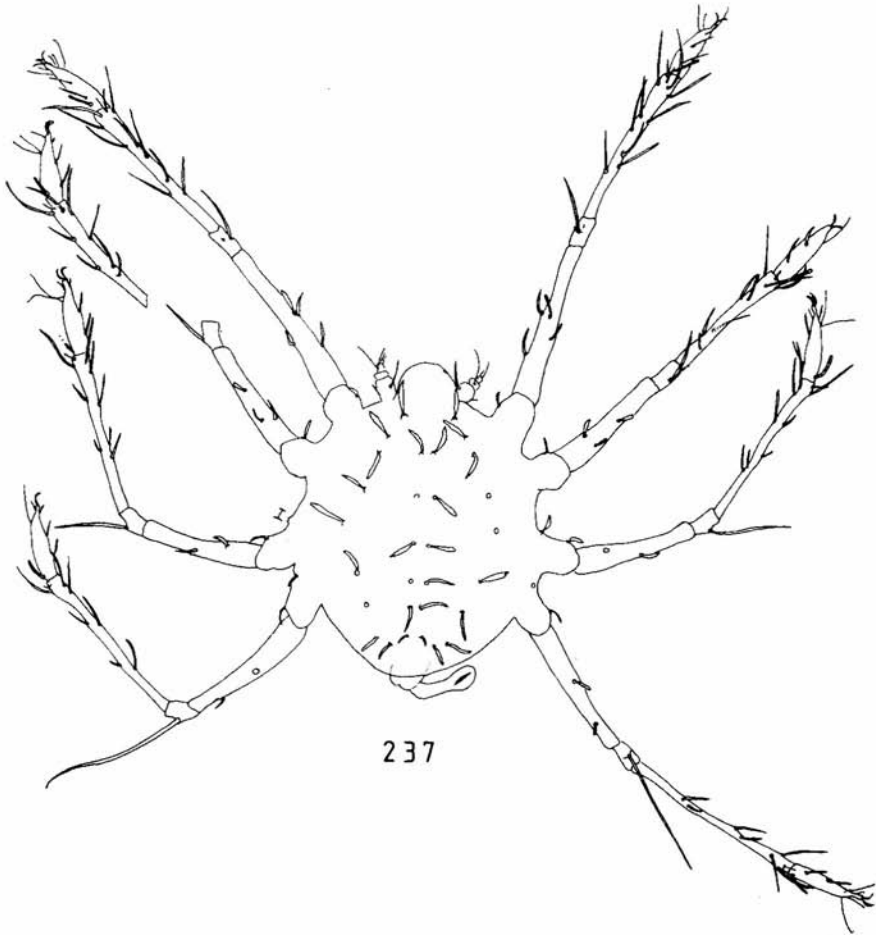
233-236. *Neophyllobius conocarpi* spec. nov., ♀. 233, pedipalp; 234, seta  $l_5$ ; 235, coxae I-II; 236, dorsal view

***Neophyllobius lorioi* SMILEY & MOSER**

(figs. 238-241)

*Neophyllobius lorioi* SMILEY & MOSER, 1968: 309-313.

Female: Body length 360  $\mu$ m, width 270  $\mu$ m. Length of legs: 420; 390; 405; 435  $\mu$ m. Six pairs of *mc*: 45; 45; 45; 55; 45; 25  $\mu$ m. Nine pairs of *l*: 45; 40; 40; 40; 45; 40; 40; 35; 25  $\mu$ m. Leg setation: coxae 3-1-2-2,



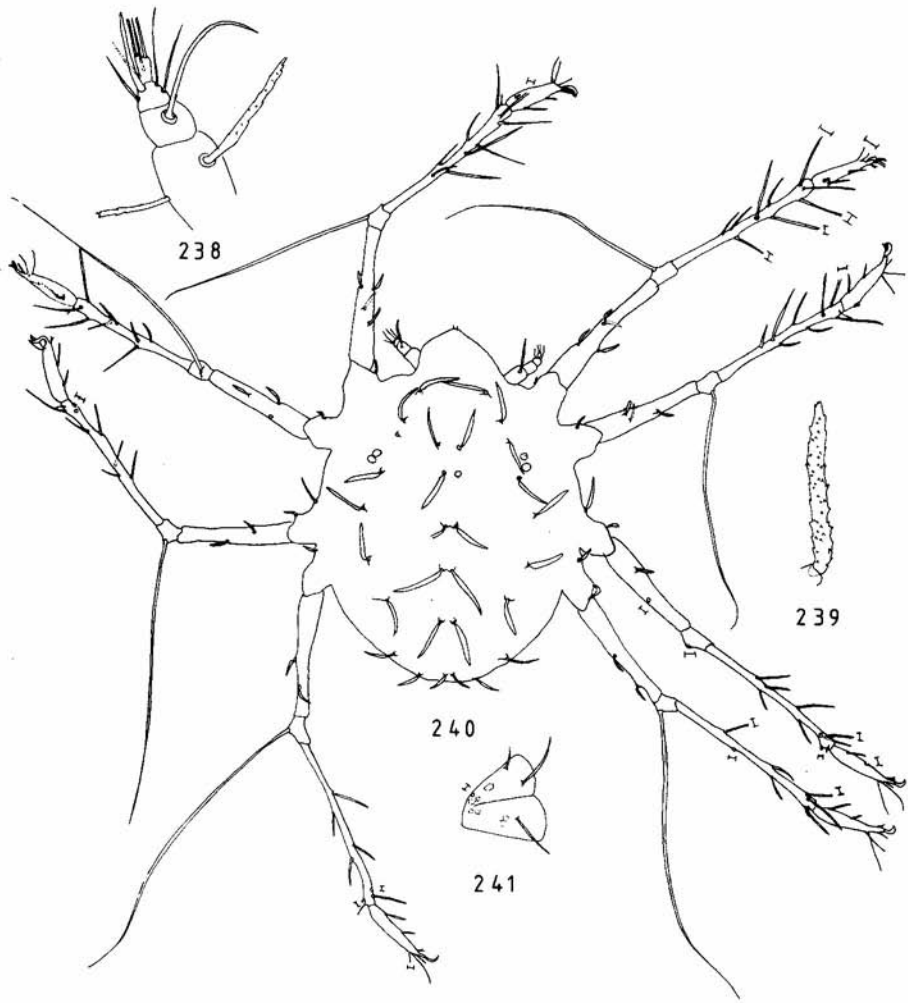
237. *Neophyllobius conocarpi* spec. nov., ♂. Dorsal view

trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

The two pleural positioned coxa I setae, 1b and 1c are very different in length. The femur setae are very short.

Male: Unknown.

Material examined: Paratype ♀, USA, Louisiana, Elizabeth, beetle boring dust of *Pinus taeda*, 1.vi.1966, J. C. MOSER 10-806 (3254 USNM).



238-241. *Neophyllobius lorioi* SMILEY & MOSER, ♀. 238, pedipalp; 239, seta  $l_3$ ; 240, dorsal view; 241, coxae I-II

Other published material: Holotype ♀, USA, Louisiana, Pineville, on bark of *Pinus taeda*, 17.i.1966, (3254 USNM). Paratype: 1 ♀, under looser inner bark of *Pinus taeda*, 20.iv.1966.

*Neophyllobius acaciae* spec. nov.

(figs. 242-245)

Female: Body length 395(360-435) µm, width 345(280) µm. Length of legs: 530(500-505); 465(430); 500(435-480); 540(510-530) µm. Six pairs of *mc*: 45(45-55); 45(45-55); 45(45-55); 55(55); 45(40-50); 30(30-35) µm. Nine pairs of *l*: 55(55); 50(40-55); 50(45-55); 50(45-55); 55(60); 45(45-50); 45(40-50); 30(30-35); 30(25-30) µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Type material: Holotype ♀, RSA, Nelspruit, on unknown tree, 7.vii.1966, L. ERASMUS (AcY 67/27-3272 PPRI). Paratypes: 1 ♀, RSA, Letsetele Vallei, on *Acacia ataxantha* D. C., 16.i.1964, M. K. P. MEYER (AcY 68/707-3741 PPRI); 1 ♀, RSA, Mafeking, on *Acacia karroo*, 13.ix.1968, D. v. ROOYEN (AcY 68/707-3741 PPRI); 1 ♀, RSA, naby Gravelotte river, on *Acacia nigrescens*, 25.v.1983, E. A. UECKERMANN (AcY-7230 PPRI).

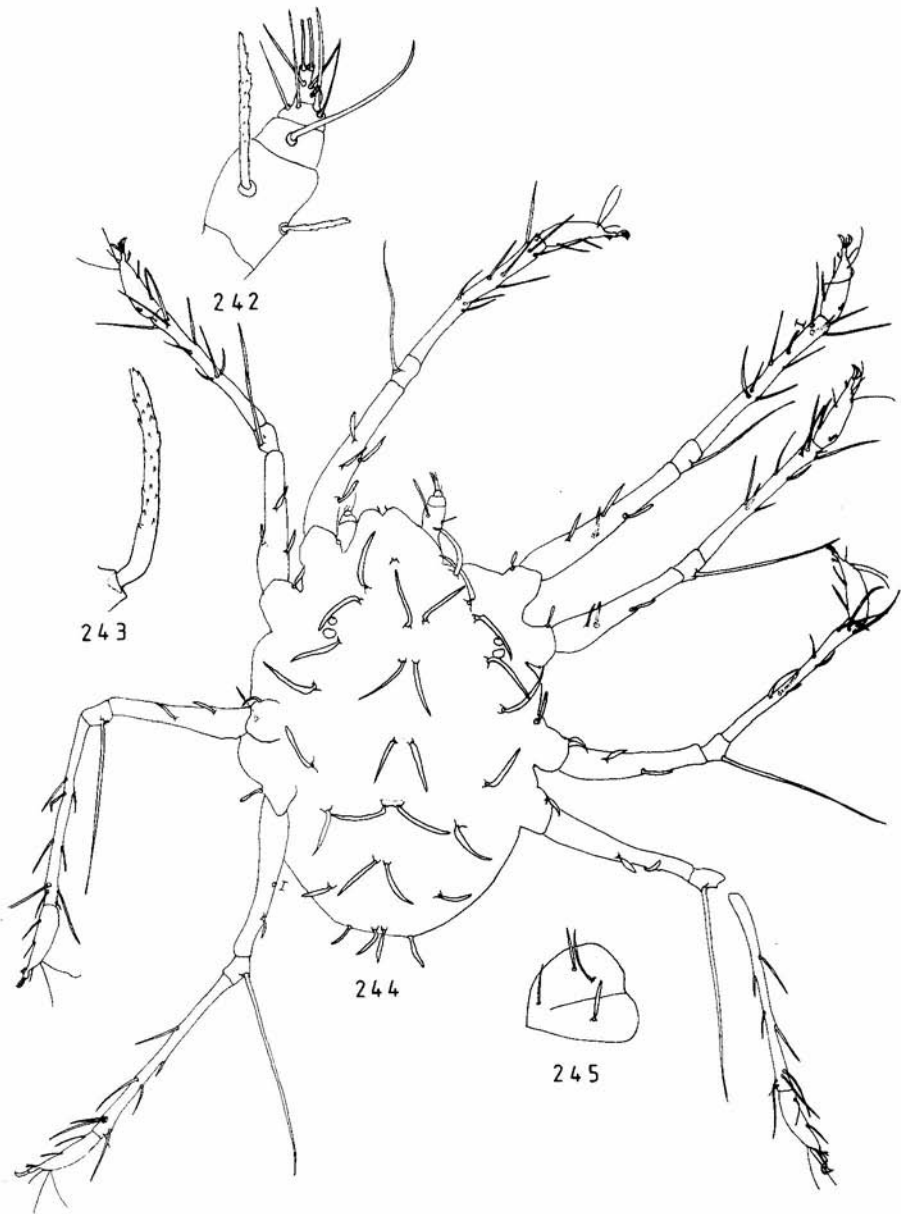
58. Femur I-IV strongly serrulate at their proximal posterior margins  
 ..... *N. lobatus*  
 Femur I-IV not strongly serrulate at their bases ..... 59  
 (continued on p. 170)

*Neophyllobius lobatus* DE LEON

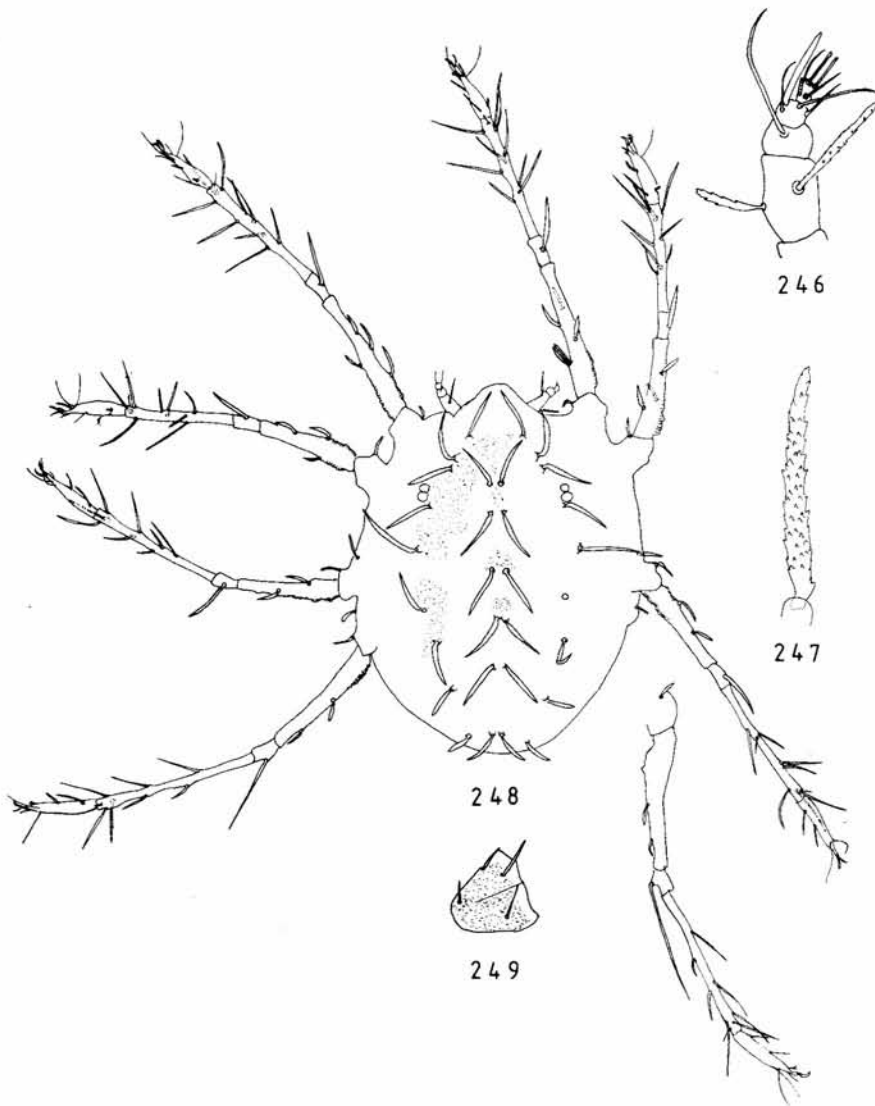
(figs. 246-249)

*Neophyllobius lobatus* DE LEON, 1958: 177-179.

Female: Body length 330 µm, width 270 µm. Length of legs: 360; 310; 335; 405 µm. Six pairs of *mc*: 45; 45; 45; 45; 45; 30 µm. Nine pairs of *l*: 45; 45; 45; 60; 40; 45; 30; 20 µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae



242-245. *Neophyllobius acaciae* spec. nov., ♀. 242, pedipalp; 243, seta  $I_5$ ; 244, dorsal view; 245, coxae I-II



246-249. *Neophyllobius lobatus* DE LEON, ♀. 246, pedipalp; 247, seta  $l_5$ ; 248, dorsal view; 249, coxae I-II



9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

The posterior margins of the femur are strongly serrulate. The dorsum has a spickled character enclosed by the rough striation.

Male: Unknown.

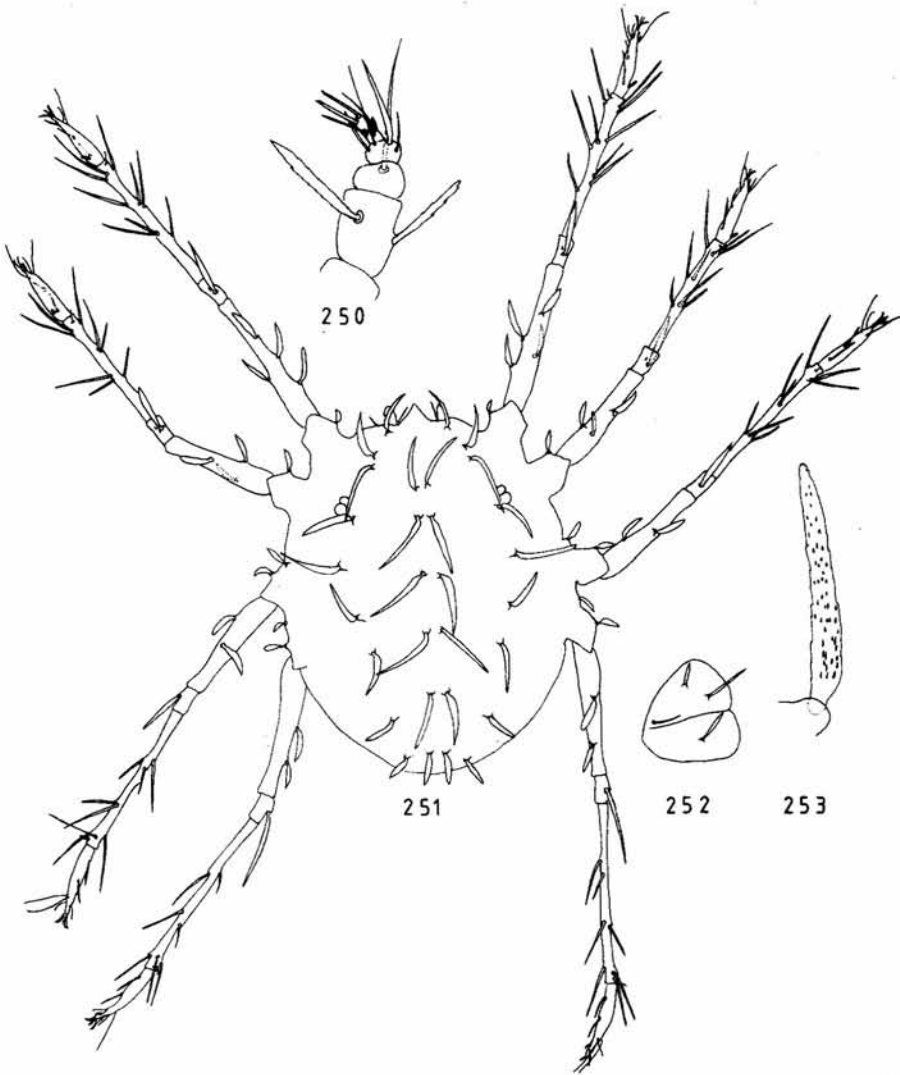
Material examined: Holotype ♀, Mexico, Nay., San Blas, on *Guasa molleta*, 11.iv.1958 D. DE LEON (1680-K MCZ).

59. Femur I setae 3 and 4 not based on one or nearly one level . . . . . 60  
 Femur I setae 3 and 4 based on one or nearly one level . . . . . 60
60. Genu I-III setae and femur I-IV setae, strongly lanceolate . . . . . 61  
 Genu I-III setae not lanceolate . . . . . 62
61. Distal seta on femur IV not passing genu border; coxal seta 1c 2x the length of 1b . . . . . *N. ceratoniae*  
 Distal seta on femur IV passing genu border; coxal seta 1c shorter than 2x the length of 1b . . . . . *N. lanceolatus*
62. Genu I setae not reaching second row of tibia setae . . . . . 63  
 Genu I setae reaching or longer than second row of tibia setae . . . . . 66
63. Genu II setae not reaching second row of tibia setae . . . . . 64  
 Genu II setae reaching second row of tibia setae . . . . . *N. binisetosus*
64. Genu III setae not whip-like and plumed at the top . . . . .  
 . . . . . *N. atriplicis*  
 Genu III setae whip-like . . . . . 65
65. Genu II setae not reaching the first row of tibia setae;  $mc_{3-4-5}$  much longer than the other  $mc$  setae; coxa seta 1c much shorter than 1b (4:9) . . . . . *N. ambulans*  
 Genu II setae reaching at least the first row of tibia setae;  $mc_{3-4}$  much longer than the other  $mc$  setae; coxa I seta 1c:1b = 5:7 . . . . . *N. cavumarboris*  
 . . . . . (continued on p. 181)

*Neophyllobius ceratoniae* spec. nov.

(figs. 250-254)

Female: Body length 320 µm, width 265 µm. Length of legs: 450; 390; 420; 460 µm. Six pairs of  $mc$ : 55; 60; 60; 60; 55; 30 µm. Nine pairs of  $l$ : 45(50); 45; 60; 55; 65(70); 45; 45; 30; 30 µm. Leg setation: coxae



250-253. *Neophyllobius ceratoniae* spec. nov., ♀. 250, pedipalp; 251, dorsal view; 252, coxae I-II; 253, seta  $l_3$



254. *Neophyllobius ceratoniae* spec. nov., ♂. Dorsal view

3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Body smaller;  $mc_6$  reduced in length. Two solenidia on the distal end of tibia I.

Deutonymph: Looks like adult female, but the seta on genu IV is much longer and whip-like.

Type material: Holotype ♀, Spain, Valencia, on *Ceratonia siliqua*, 1.vi.1953, H. Y. GOULDMAN (Lot 53-6807 USNM). Paratypes: 1 ♀, 2 ♂, (1 just hatched), 1 deutonymph, all with the same data as for the holotype (USNM).

*Neophyllobius lanceolatus* spec. nov.

(figs. 255-258)

Female: Body length 362  $\mu\text{m}$ , width 296  $\mu\text{m}$ . Length of legs: 410; 360; 390; 434  $\mu\text{m}$ . Six pairs of *mc*: 55; 55; 60; 70; 60; 35  $\mu\text{m}$ . Nine pairs of *l*: 55; 55; 50; 50; 70; 50; 55; 35; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia. All dorsal, femur and genu setae lanceolate.

Male: Unknown.

Type material: Holotype ♀, France, Montpellier, on *Platanus acerifolia*, 26.xi.1986, H. R. BOLLAND (ZMA).

*Neophyllobius binisetosus* spec. nov.

(figs. 259-262)

Female: Body length 290  $\mu\text{m}$ , width 230  $\mu\text{m}$ . Length of legs: 545; 450; 490; 560  $\mu\text{m}$ . Six pairs of *mc*: 50; 50; 55; 75; 70; 35  $\mu\text{m}$ . Nine pairs of *l*: 65; 55/60; 55; 55; 85/95; 60; 65/70; 35; 35  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia. The *mc*<sub>1</sub> setae are based on one tubercle.

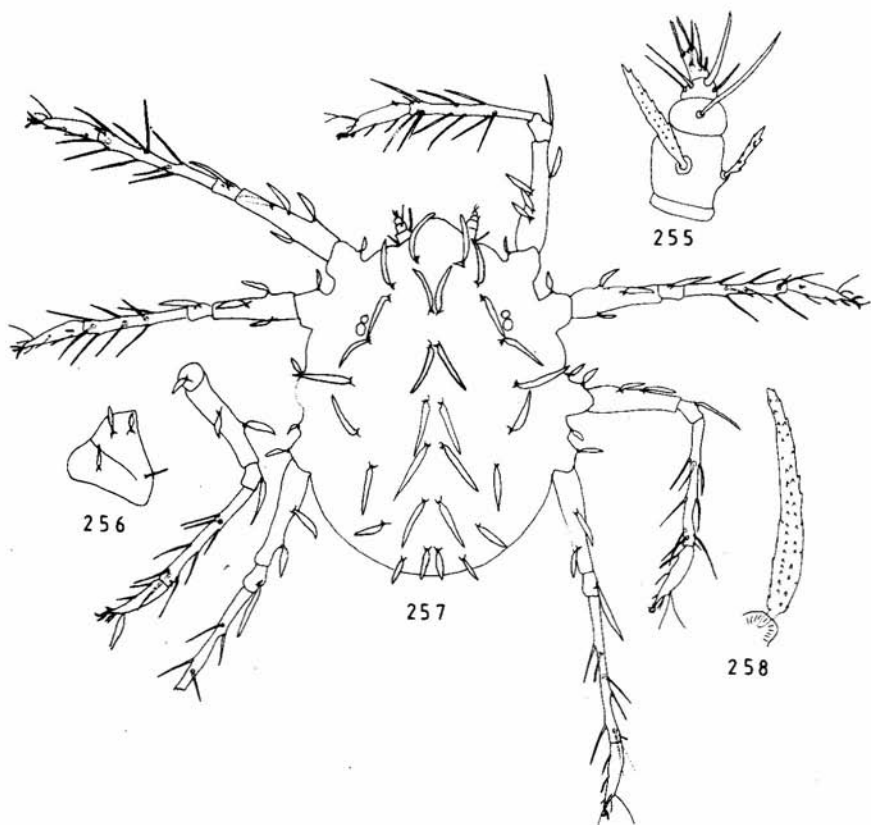
Male: Unknown.

Type material: Holotype ♀, USA, Oregon, Benton Co, 3.5 m. N. E. Summit, moss-straw litter, 5.iii.1959, J. D. LATTIN (700" ZMA).

*Neophyllobius atriplicis* spec. nov.

(figs. 263-267)

Female: Body length 365  $\mu\text{m}$ , width 295  $\mu\text{m}$ . Length of legs: 485; 410; 420; 475  $\mu\text{m}$ . Six pairs of *mc*: 55; 60; 65; 65; 75; 35  $\mu\text{m}$ . Nine pairs of *l*: 55; 55; 55; 55; 75; 60; 60; 40; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

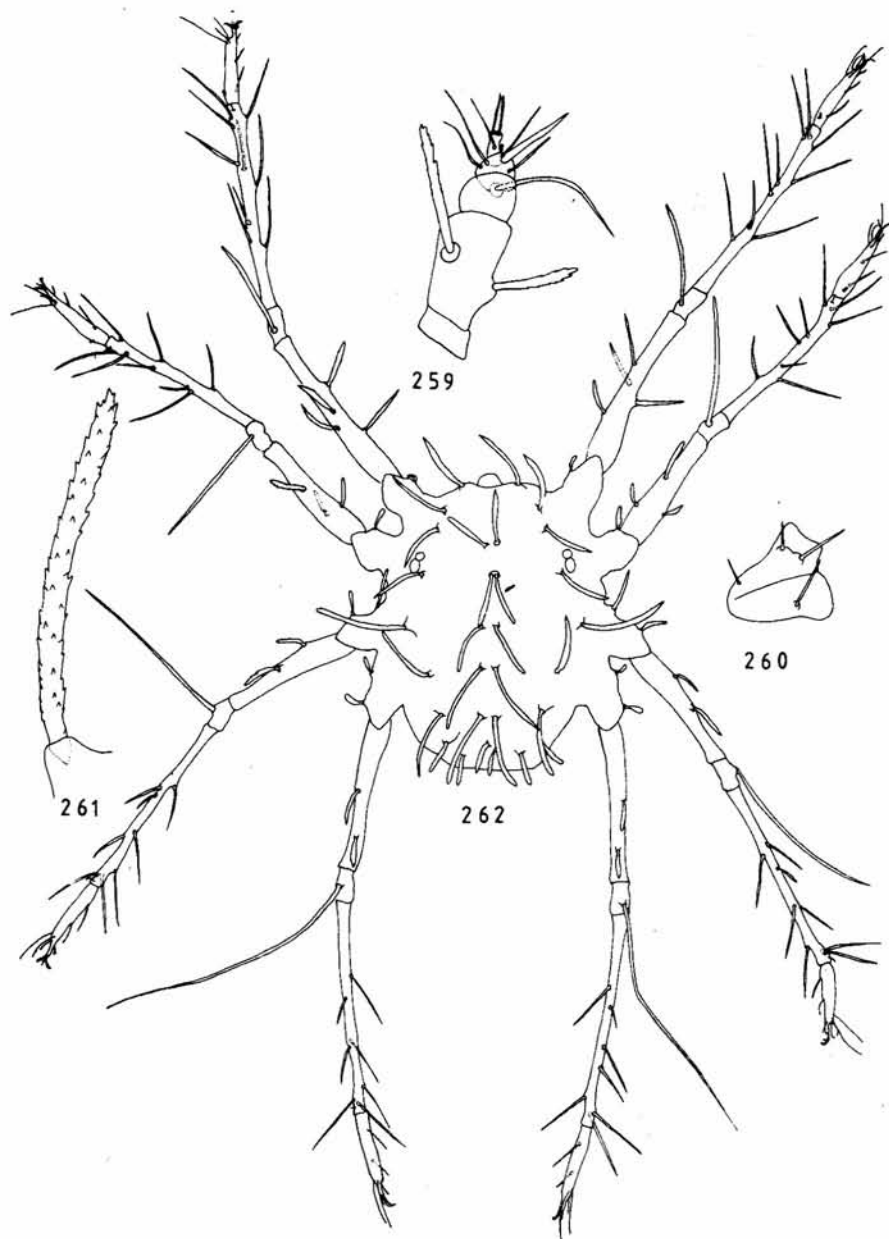


255-258. *Neophyllobius lanceolatus* spec. nov., ♀. 255, pedipalp; 256, coxae I-II; 257, dorsal view; 258, seta  $l_5$

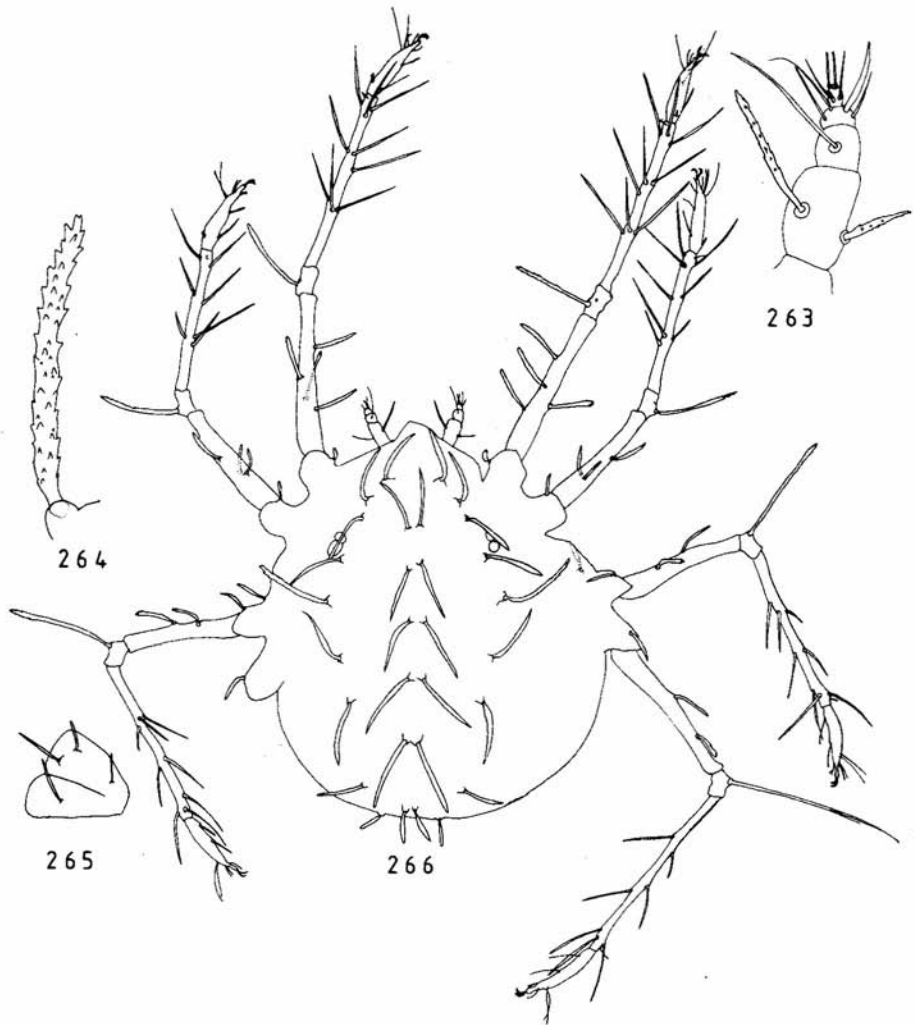
Male: Unknown.

Protonymph: Six pairs of *mc* and nine pairs of *l* setae. Leg setation: coxae 3-1-2-0, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 6-6-6-3, tarsi have midventral one seta. Distal parts of tarsi indistinct.

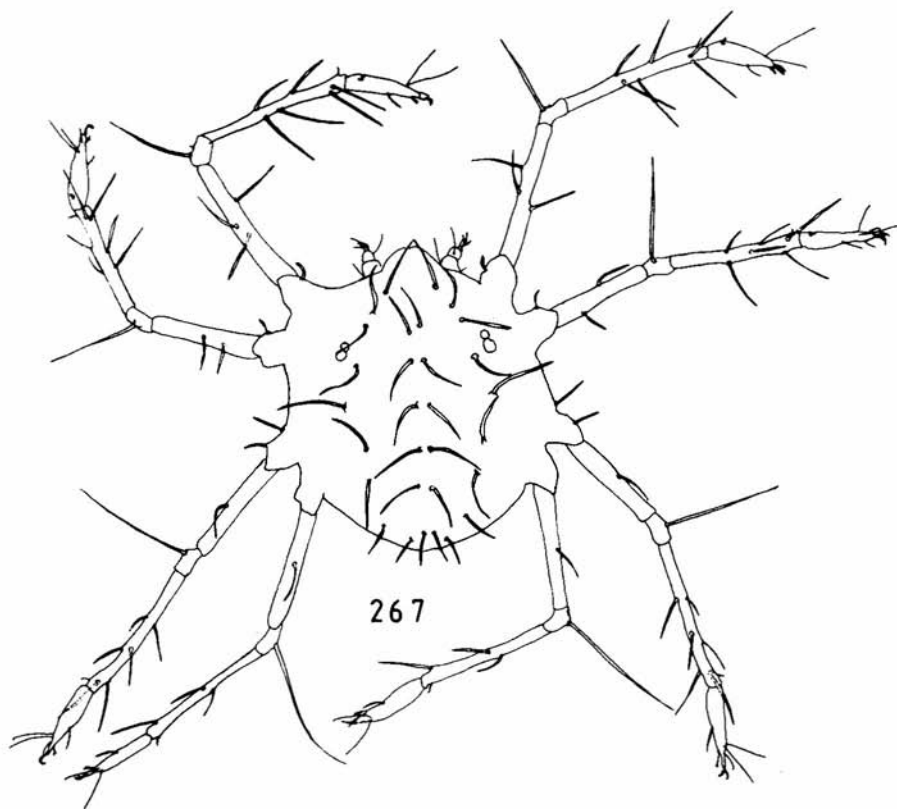
Type material: Holotype ♀, USA, Colorado, El Paso County, on salt bush litter, *Atriplex canescens*, 12.vii.1973, C. R. MAPPES (UMC). Paratype: 1 protonymph, with the same data as for the holotype (UMC).



259-262. *Neophyllobius binisetosus* spec. nov., ♀. 259, pedipalp; 260, coxae I-II; 261, seta  $l_5$ ; 262, dorsal view



263-266. *Neophyllobius atriplicis* spec. nov., ♀. 263, pedipalp; 264, seta I<sub>5</sub>; 265, coxae I-II; 266, dorsal view



267. *Neophyllobius atriplicis* spec. nov., protonymph. Dorsal view

***Neophyllobius ambulans* MEYER**

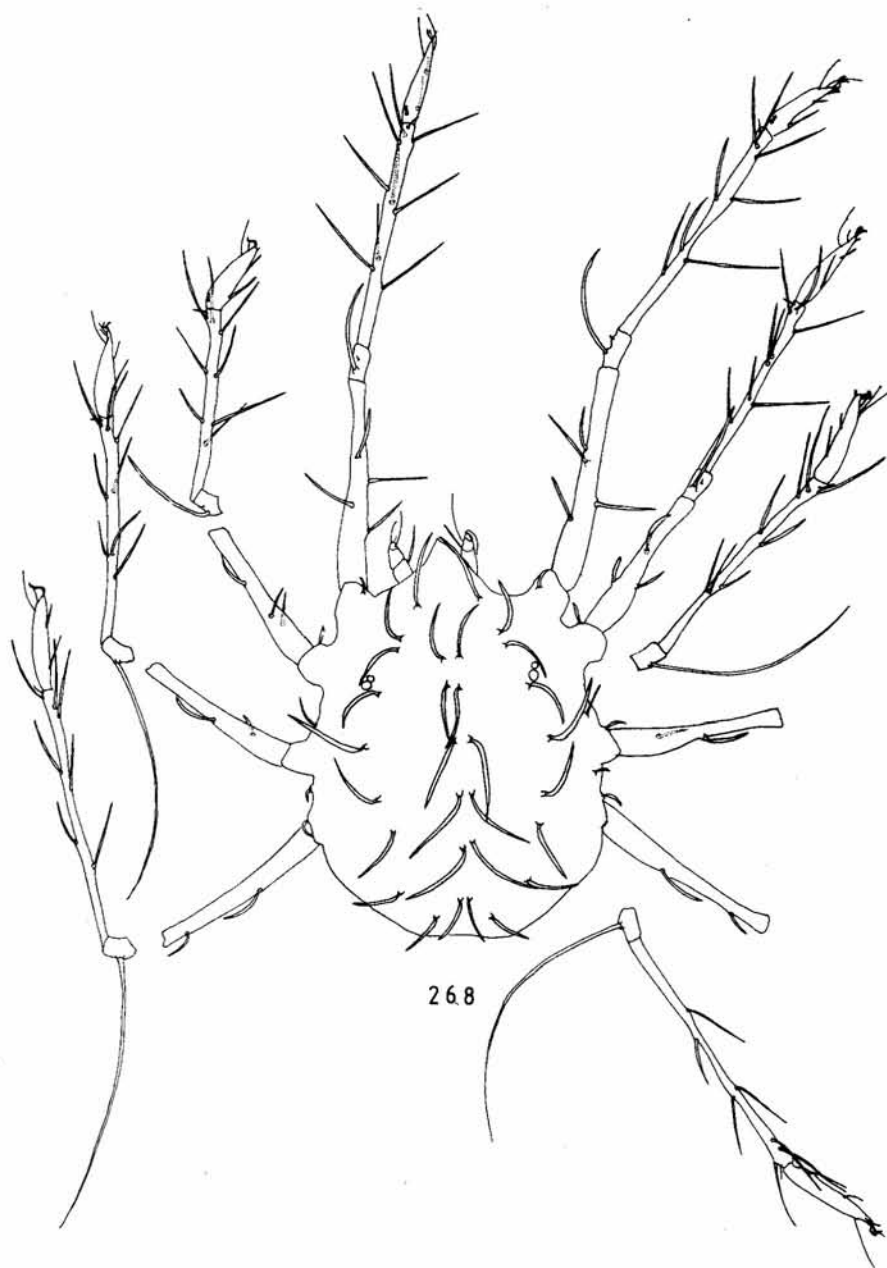
(figs. 268-273)

*Neophyllobius ambulans* MEYER, 1962: 411-414.

Female: Body length 355  $\mu\text{m}$ , width 275  $\mu\text{m}$ . Length of legs: 505; 410; 445; 535  $\mu\text{m}$ . Six pairs of *mc*: 45; 45; 70; 70; 70; 40  $\mu\text{m}$ . Nine pairs of *l*: 60; 60; 55; 60; 70; 45; 55; 40; 35  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

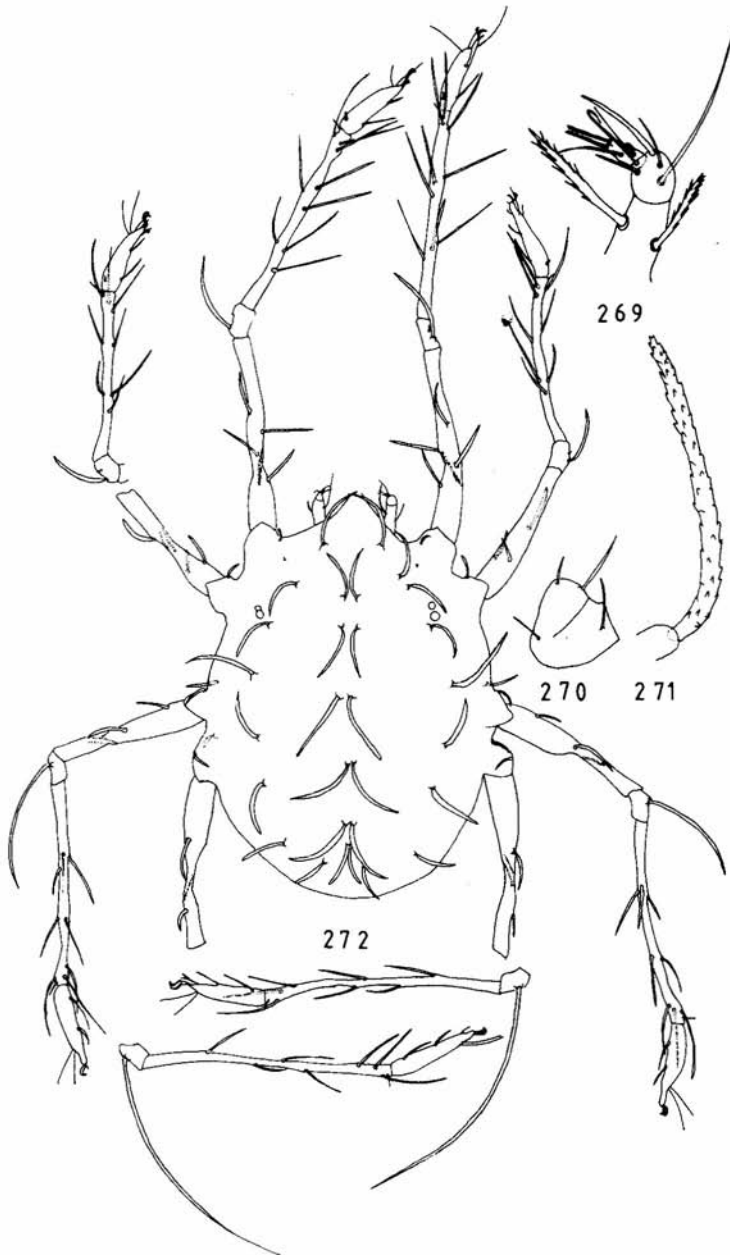
Male: Body smaller, *mc*<sub>6</sub> reduced in length. The aedeagus is visible.



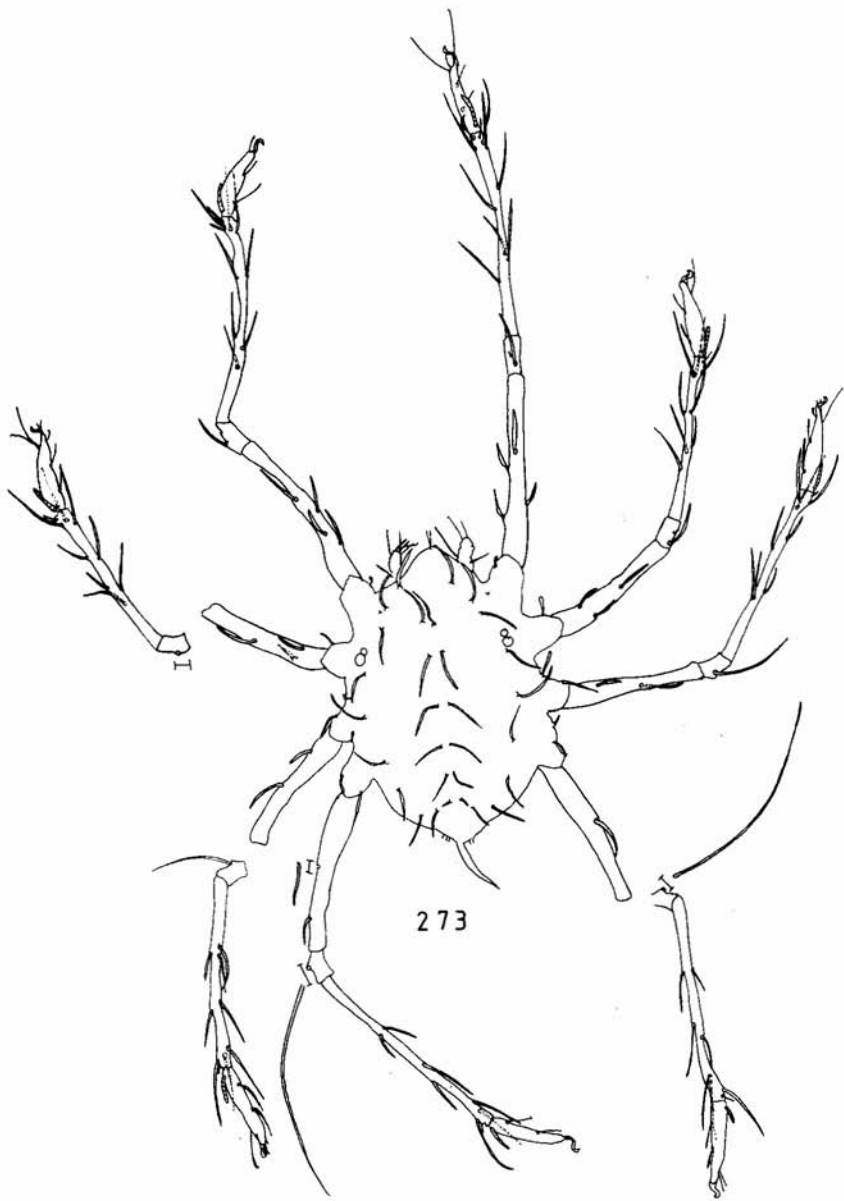


268

268. *Neophyllobius ambulans* MEYER, deutonymph. Dorsal view



269-272. *Neophyllobius ambulans* MEYER, ♀. 269, pedipalp; 270, coxae I-II; 271, seta  $l_3$ ; 272, dorsal view



273. *Neophyllobius ambulans* MEYER, ♂. Dorsal view

Deutonymph (= holotype): Looks like female, but the genu II setae are much longer, the genu III setae are longer and the genu IV setae are somewhat longer as in the female.

Material examined: Holotype (= deutonymph), R. S. A., Northern Transvaal, Leteba, on *Citrus sinensis* ?iv.1945, E. C. G. BEDFORD (AcY 61/470 PPRI). Paratypes: 1 ♀, 2 deutonymphs, in the same slide as the holotype; 1 allotype ♂ (AcY 61/476-1 PPRI); 2 ♂, 1 deutonymph (AcY 61/476-2 PPRI), all with the same data as for the holotype.

***Neophyllobius cavumarboris* MEYER & RYKE**

(figs. 274-277)

*Neophyllobius cavumarboris* MEYER & RYKE, 1959: 213-215.

Female: Body length 345 µm, width 290 µm. Length of legs: 515; 415; 460; 525 µm. Six pairs of *mc*: 50; 60; 55; 60; 65; 40 µm. Nine pairs of *l*: (?); 45; 45; 50; 70; 45; 55; 45; 40 µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Material examined: Holotype ♀, RSA, Potchefstroom, from a hole in a willow tree, ?i.1955, P. A. J. RYKE (AcY 63/53 PPRI).

66. Genu II setae not whip-like . . . . . *N. armeniaca*  
 Genu II setae whip-like . . . . . 67

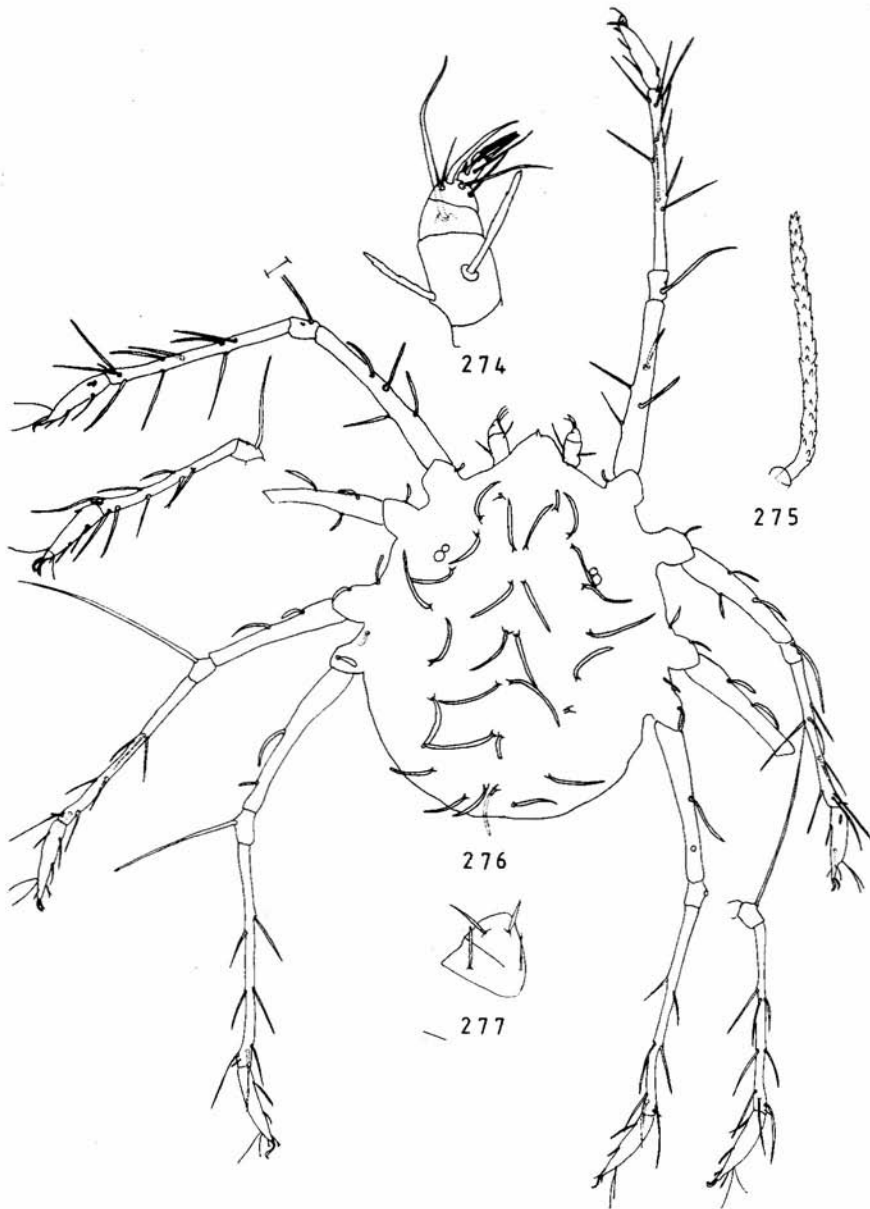
(continued on p. 184)

***Neophyllobius armeniaca* spec. nov.**

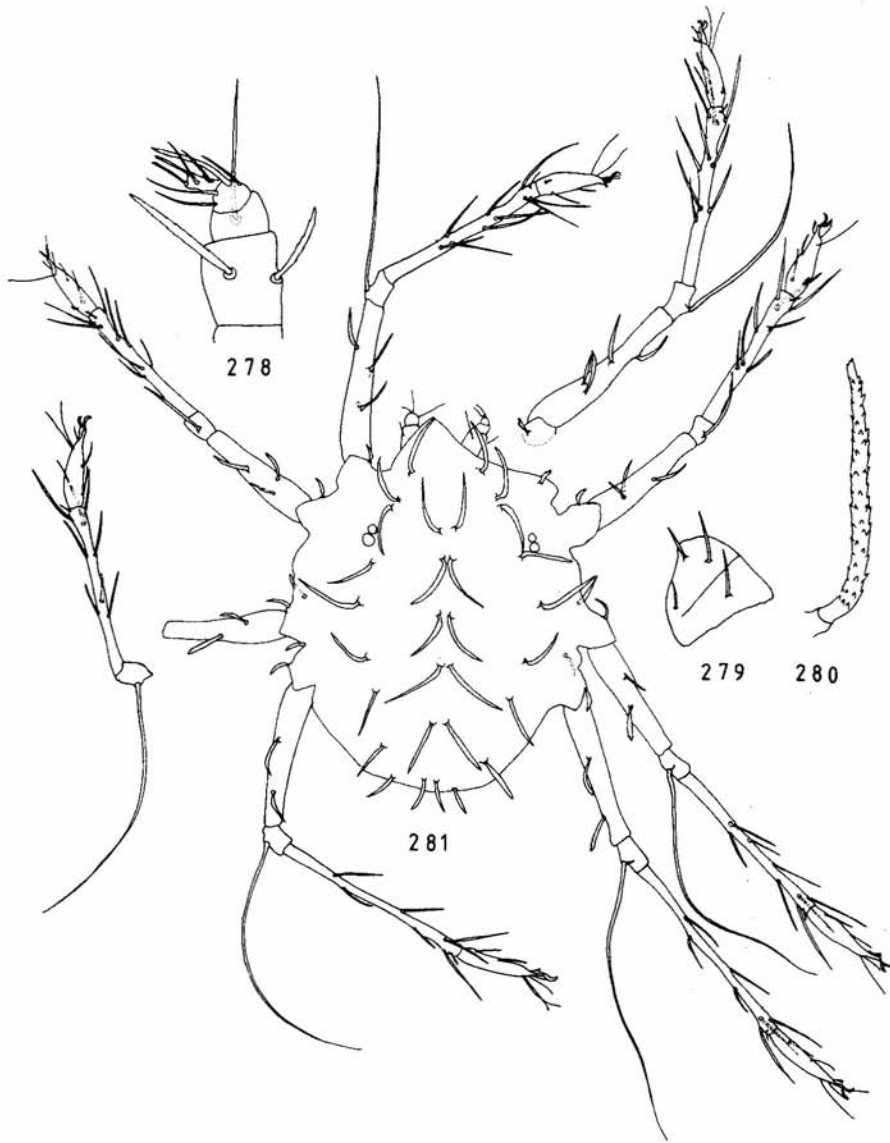
(figs. 278-281)

Female: Body length 345 µm, width 295 µm. Length of legs: 505; 400; 470; 515 µm. Six pairs of *mc*: 60; 60; 35; 70; 60; 35 µm. Nine pairs of *l*: 55; 45; 50; 55; 70; 45; 55; 40; 30 µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.



274-277. *Neophyllobius cavumarmoris* MEYER & RYKE, ♀. 274, pedipalp; 275, seta  $l_5$ ; 276, dorsal view; 277, coxae I-II



278-281. *Neophyllobius armeniaca* spec. nov., ♀. 278, pedipalp; 279, coxae I-II; 280, seta I<sub>5</sub>; 281, dorsal view

Type material: holotype ♀, Hawaiiia, on apricot "New Zealand", 2.i.1976, A. TAMAIYA (T 6/2572 USNM).

67. Genu I and II setae reach till second row of tibia setae . . . 68  
 Genu I and II setae are passing tarsus border . . . . . 69
68. Dorsal setae small not pointed; body small; coxa I seta 1c:1b = 6:18 . . . . . *N. iramus*  
 Dorsal setae more broad and occupied with very strong stings; coxa I seta 1c:1b = 6:17 . . . . . *N. equalis*  
 (continued on p. 186)

### *Neophyllobius iramus* DE LEON

(figs. 282-285)

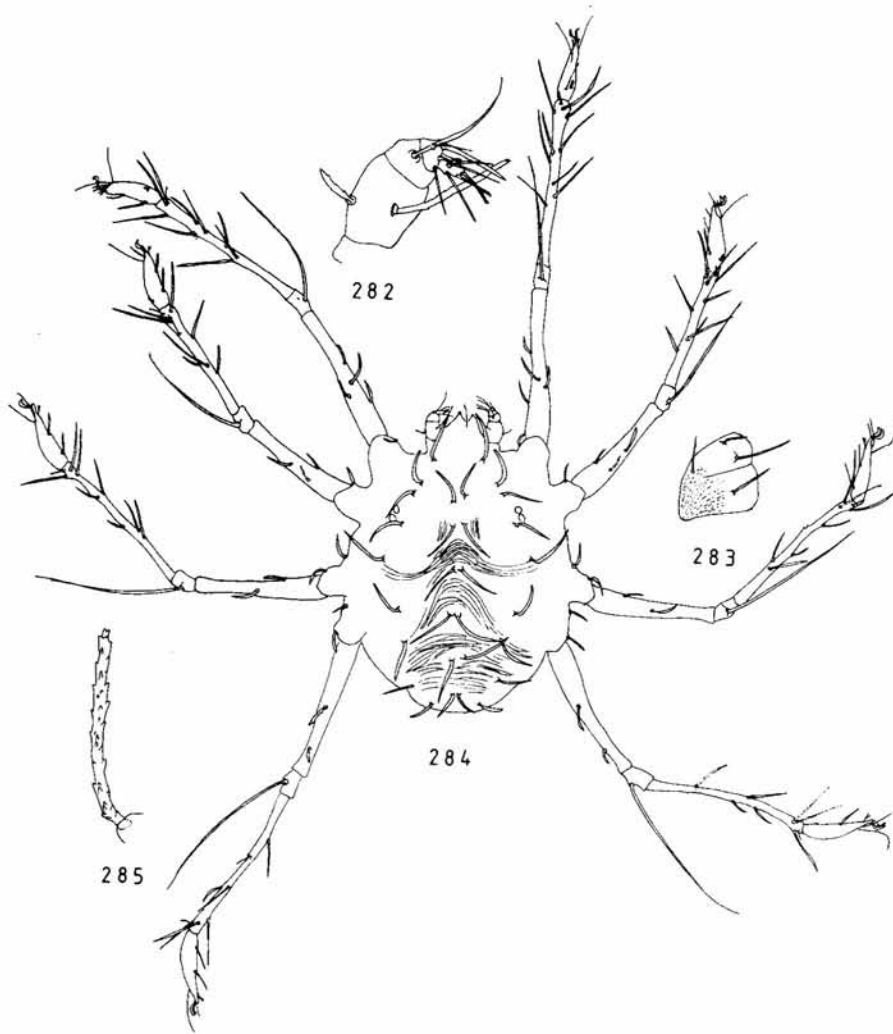
*Neophyllobius iramus* DE LEON, 1967: 30-32.

Female: Body length 280 µm, width 250 µm. Length of legs: 470; 390; 430; 470 µm. Six pairs of *mc*: 35; 40; 45; 45; 50; 30 µm. Nine pairs of *l*: 50; 35; 40; 35; 55; 40; 45; 35; 25 µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Material examined: Holotype ♀, Caribbean area, Trinidad, Arima (Cleaver Reserve), on palm seedling, 12.x.1963, D. DE LEON (2840-1 MCZ). Paratype: 1 ♀ in the same slide as the holotype.

Remarks. There are nine *l* setae instead of ten as is given by DE LEON. The coxa I seta 1c is very long. The species looks like *N. inequalis* and *N. consobrinus*. It differs from *N. inequalis* in having shorter *mc* setae and the third setae on femur I, which has a different position and is much longer. It differs from *N. consobrinus* in a different position and length of the third seta on femur I and the length of *mc*<sub>1-2-4</sub> and <sub>-6</sub>. Also the proportion of the coxa I setae 1b and 1c is different from these two species.



282-285. *Neophyllobius iramus* DE LEON, ♀. 282, pedipalp; 283, coxae I-II; 284, dorsal view; 285, seta  $l_5$



*Neophyllobius equalis* DE LEON

(figs. 286-289)

*Neophyllobius equalis* DE LEON, 1958: 177-179.

Female: Body length 320  $\mu\text{m}$ , width 265  $\mu\text{m}$ . Length of legs: 450; 410; 435; 485  $\mu\text{m}$ . Six pairs of *mc*: 60; 70; 70; 80; 65; 40  $\mu\text{m}$ . Nine pairs of *l*: 60; 55; 60; 55; 80; 55; 60; 40; 35  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Material examined: Holotype ♀, Mexico, Nay, Navarette, on *Guazuma* spec., 29.iii.1957, D. DE LEON (1615 MCZ).

Other published material: Paratypes: 1 ♀, same data as for the holotype, but from an unknown host; 1 ♀, Mexico, S. L. P., near Valles, 20.xii.1956 (the last specimen is questionable, for this specimen is somewhat larger, with shorter leg segments, genual setae and body setae).

69. Dorsal setae specially spinosed . . . . . *N. setosus*  
 Dorsal setae not specially spinosed . . . . . 70

(continued on p. 189)

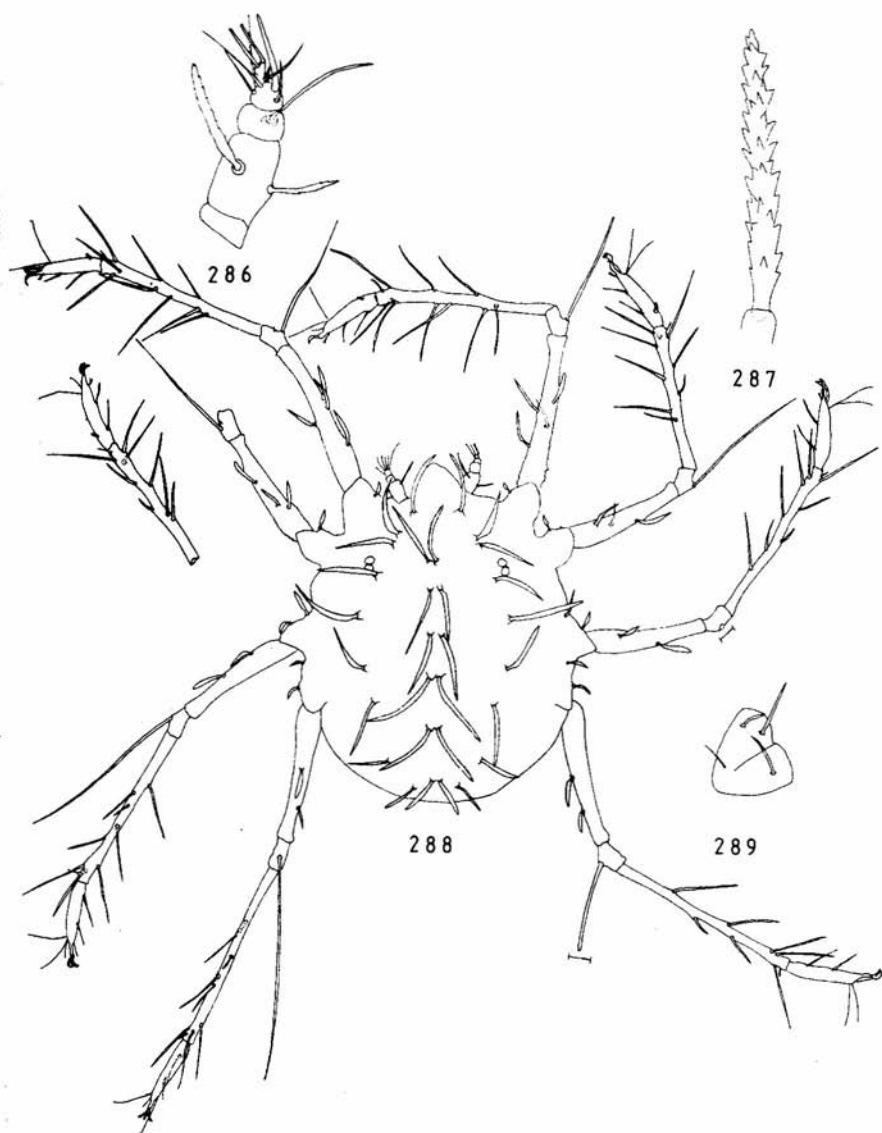
*Neophyllobius setosus* spec. nov.

(figs. 290-294)

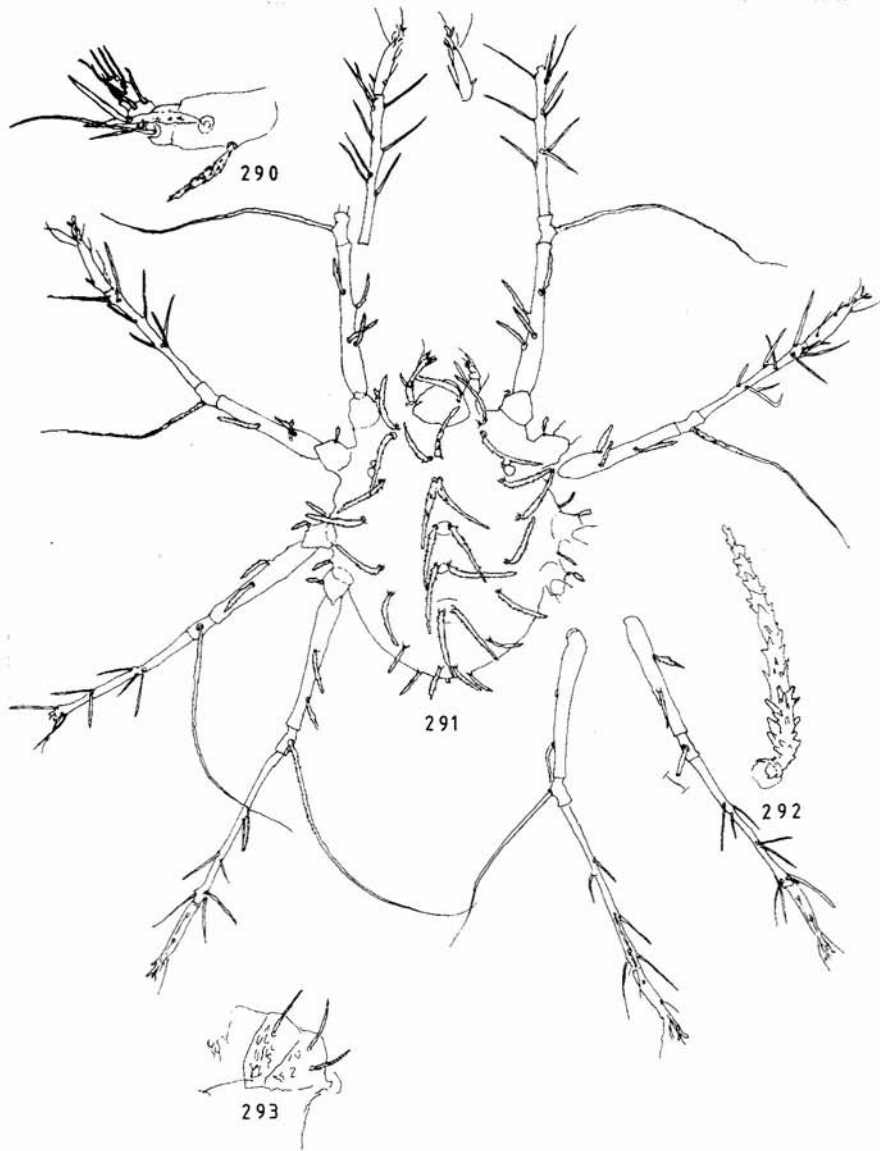
Female: Body length 340  $\mu\text{m}$ , width 280  $\mu\text{m}$ . Length of legs: 515; 445; 490; 535  $\mu\text{m}$ . Six pairs of *mc*: 70; 85; 85; 85; 80; 40  $\mu\text{m}$ . Nine pairs of *l*: 65; 75; 60; 65; 80; 60; 65; 40; 35  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Body smaller than female. *Mc*<sub>5</sub> and <sub>6</sub> reduced in length. One short plus an extremely long solenidion on distal end of tibia I.

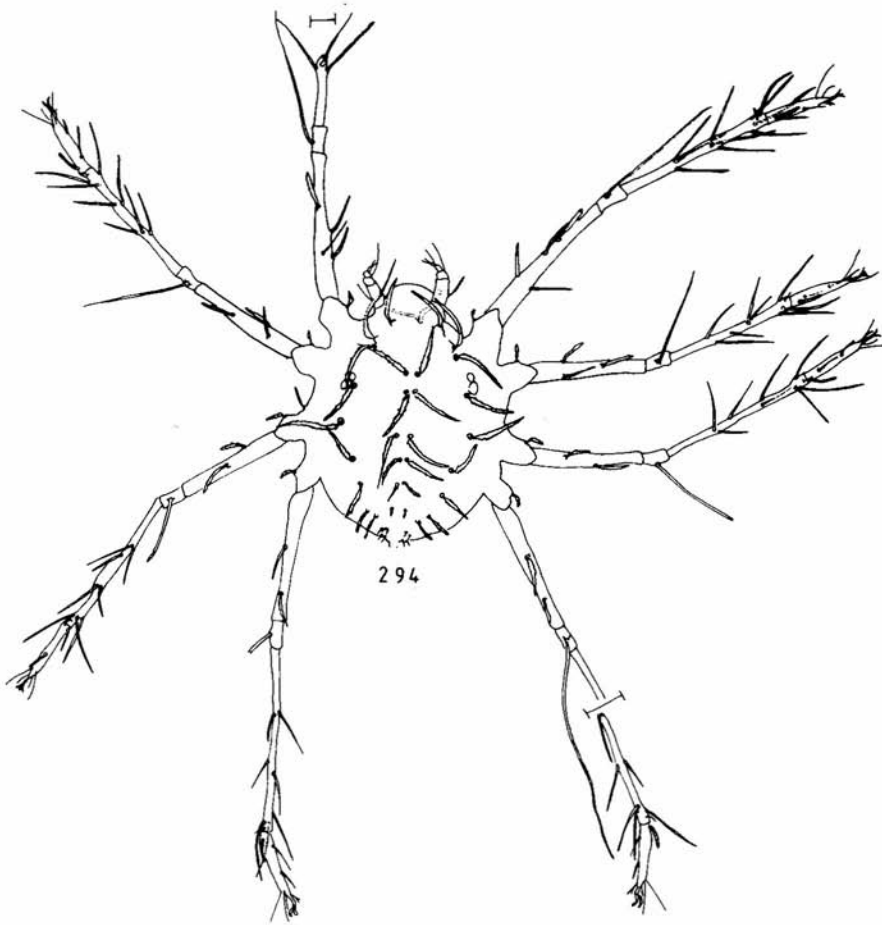
Type material: Holotype ♀, Israel, Rehovot, on branches of *Myrtus* spec., 10.vii.1981, U. GERSON (no. 3378 HUJ). Paratype: allotype ♂ with the same data as for the holotype.



286-289. *Neophyllobius equalis* DE LEON, ♀. 286, pedipalp; 287, seta  $I_5$ ; 288, dorsal view; 289, coxae I-II



290-293. *Neophyllobius setosus* spec. nov., ♀. 290, pedipalp; 291, dorsal view; 292, seta  $l_5$ ; 293, coxae I-II



294. *Neophyllobius setosus* spec. nov., ♂. Dorsal view

Remarks. The dorsal setae are strong prickled, more than those of *N. americanus*. The genu setae are whip-like in the female and in the male. The ventral setae la are very long.

70. Third seta on femur I longer than the fourth; proximal seta not the longest femur I seta; first seta on femur II not reaching the third seta . . . . . 71  
 Third seta on femur I somewhat shorter than the fourth; first seta on femur II the longest femur seta which passes easily the third; proximal femur I seta the longest femur I seta . . . . *N. pruni*  
 (continued on p. 190)

*Neophyllobius pruni* spec. nov.

(figs. 295-298)

Female: Body length 290  $\mu\text{m}$ , width 250  $\mu\text{m}$ . Length of legs: 425; 365; 415; 460  $\mu\text{m}$ . Six pairs of *mc*: 45; 60; 60; 60; 60; 25  $\mu\text{m}$ . Nine pairs of *l*: 60; 55; 55; 70; 55; 55; 40; 45; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femur 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsi 2 + 2 eupathidia.

Male: Unknown.

Type material: Holotype ♀, USA, Mo., Boone country S. of Columbia, on apple bark, 4.ii.1969, (UMC). Paratypes: 3 ♀, with the same data as for the holotype.

71. Proximal setae on femur I much longer than the second; proximal seta on femur I flagellate . . . . . *N. gonzali*  
 Proximal setae on femur I equal or shorter than the second . . . . . 72
72. Proximal seta on femur I equal in length with the second; distal seta on femur IV long, passes genu border; first seta on femur I reaches the bases of the fourth . . . . . *N. viticola*  
 Proximal seta on femur I shorter than the second; distal seta on femur IV short, not passing genu border; first seta on femur I does not reach the fourth at all . . . . . *N. combreticola*  
 (continued on p. 196)

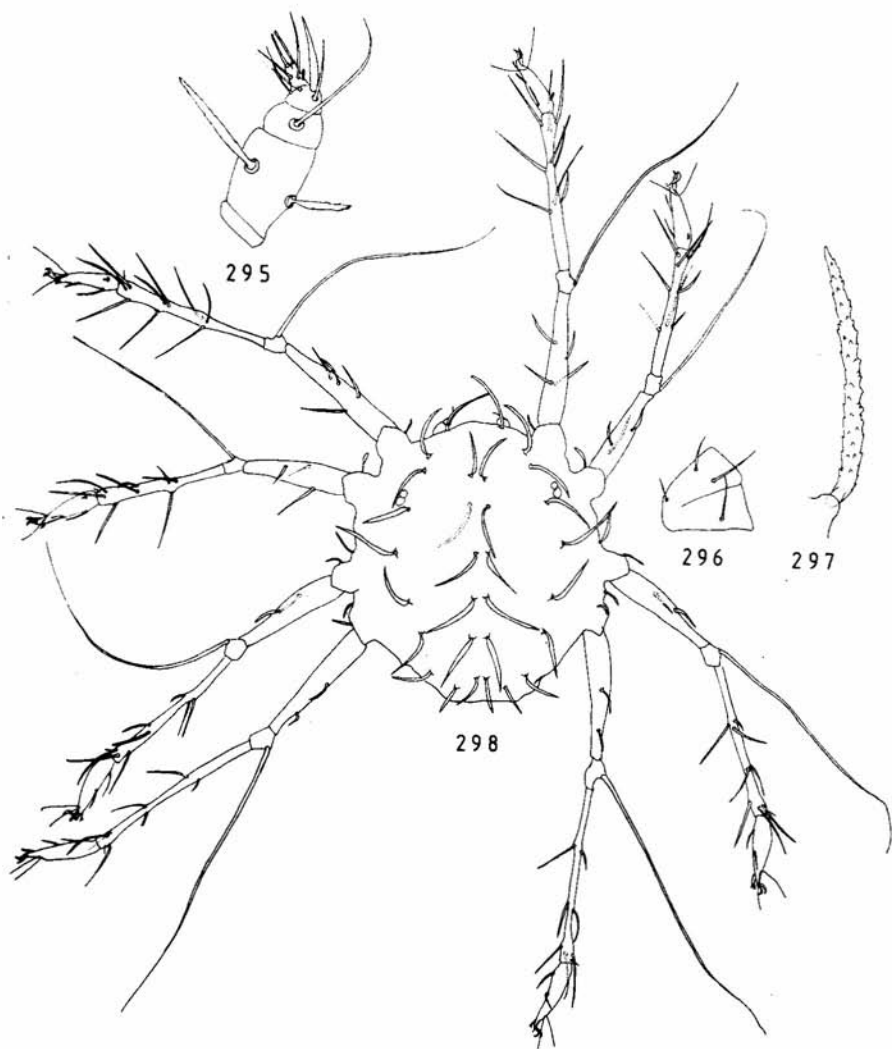
*Neophyllobius gonzali* ZAHER & GOMAA

(figs. 299-302)

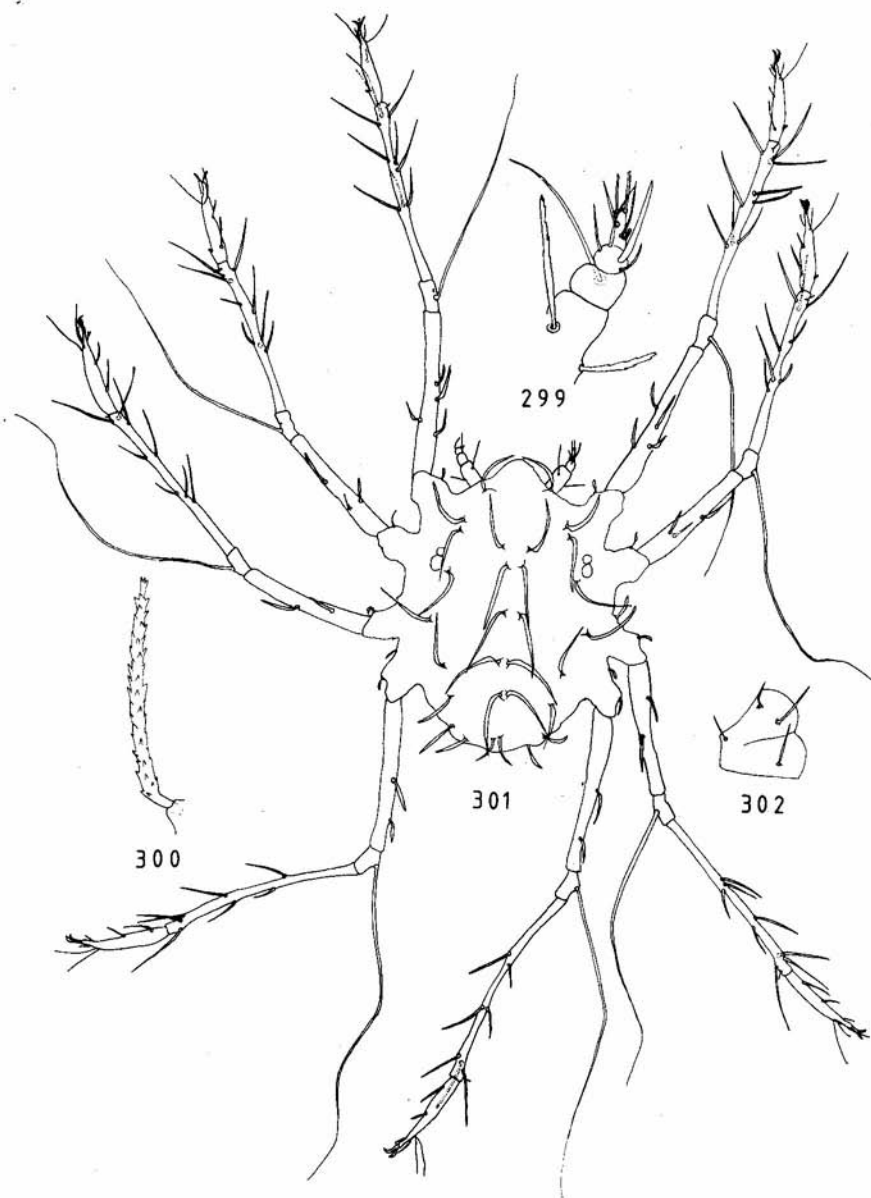
*Neophyllobius gonzali* ZAHER & GOMAA, 1979: 124-125 and 127.

Female: Body length 265  $\mu\text{m}$ , width 230  $\mu\text{m}$ . Length of legs: 485; 425; 460; 515  $\mu\text{m}$ . Six pairs of *mc*: 55; 70; 65; 65; 55; 30  $\mu\text{m}$ . Nine pairs of *l*: ?; 50; 45; 55; 60; 55; 35; 35; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Body smaller. *Mc*<sub>6</sub> reduced in length. The male has only one solenidion on the distal end of tibia I.



295-298. *Neophyllobius pruni* spec. nov., ♀. 295, pedipalp; 296, coxae I-II; 297, seta  $I_5$ ; 298, dorsal view



299-302. *Neophyllobius gonzali* ZAHER & GOMAA, ♀. 299, pedipalp; 300, seta  $l_5$ ; 301, dorsal view; 302, coxae I-II

Deutonymph: Body length 360  $\mu\text{m}$ , width 285  $\mu\text{m}$ . Length of legs: 560; 475; 525; 570  $\mu\text{m}$ . Six pairs of *mc*: 80; 80; 85; 85; 70; 60  $\mu\text{m}$ . Nine pairs of *l*: 60; 60; 60; 65; 70; 65; 60; 45; 40  $\mu\text{m}$ .

Material examined: Type ♀, Egypt, Fayoum, on *Psidium guava* 1.x.1969, E. A. GOMAA (FAUC). Paratypes: 1 deutonymph, Egypt, Fayoum, on mango, 24.vi.1981, G. v. SEVENTER (ZMA); allotype ♂, Egypt, Fayoum, 10.x.1978, E. A. GOMAA (FAUC).

Other published material: Paratypes: 2 ♀ Egypt, Fayoum Province, on *Psidium guava*, 1.x.1969, E. A. GOMAA (FAUC).

Remarks. ZAHER & GOMAA (1979) give in their description seven setae on tibia II instead of eight. Also they give five setae on tibia I instead of four. The most proximal seta on femur I is flagellate. The coxa I setae 1b and 1c are very different in length.

### *Neophyllobius viticola* spec. nov.

(figs. 303-308)

Female: Body length 315  $\mu\text{m}$ , width 290  $\mu\text{m}$ . Length of legs: 515; 445; 485; 545  $\mu\text{m}$ . Six pairs of *mc*: 80; 90; 90; 90; 80; 45  $\mu\text{m}$ . Nine pairs of *l*: 70; 70; 70; 70; 95; 75; 80; 50; 40  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

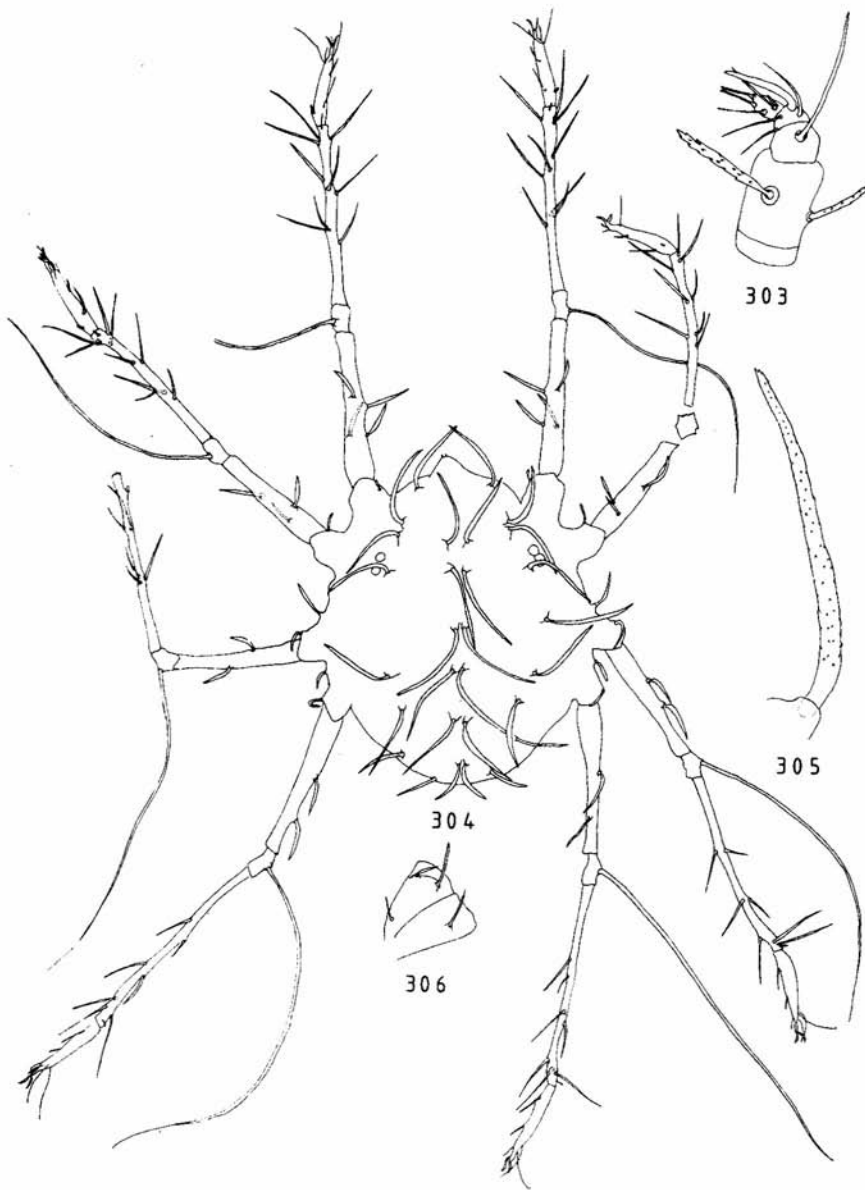
Male: Unknown.

Protonymph: Six *mc* and nine *l* setae. Leg setation: coxae 3-1-2-0, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 5-5-5-3, tarsi 9-9-7-5.

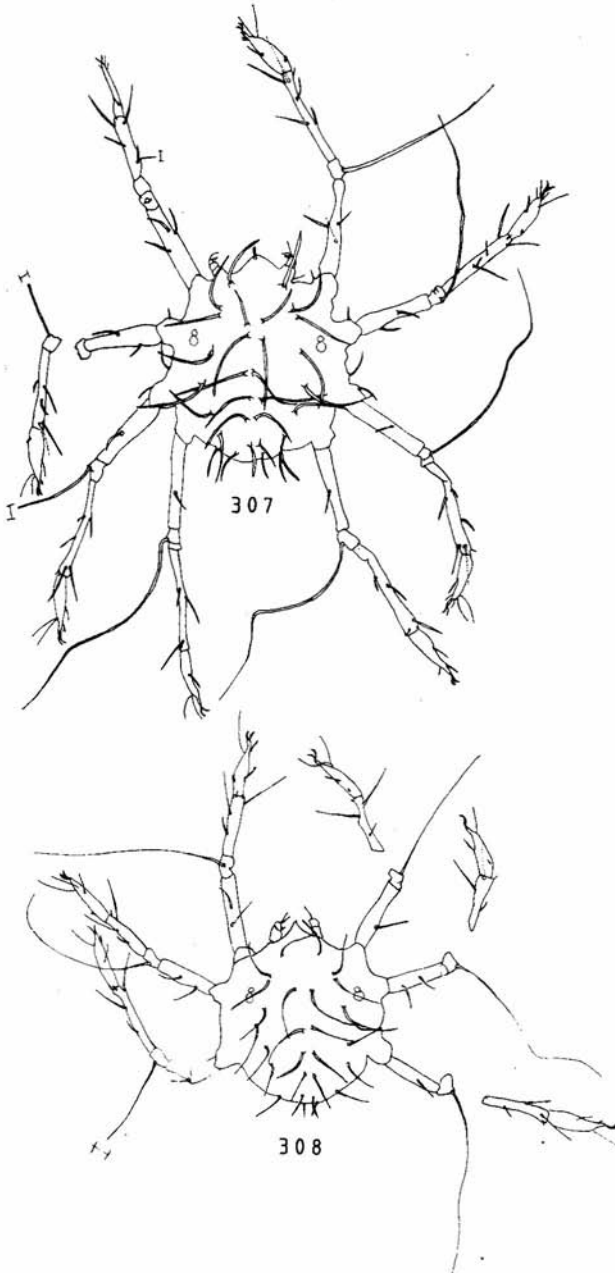
Larva: Five *mc* and nine *l* setae. Leg setation: coxae 2-0-0, trochanters 0-0-0, femora 2-2-1, genua 1-1-1, tibiae 3-3-3, tarsi 7-7-5.

Type material: Holotype ♀, France, Valras (Herault-34), sous ecorce de *Vitis vinifera*, 20.xii.1956, (leg. RAMBIER) (ZMA). Paratypes: 1 ♀, 1 protonymph and 1 larva in the same slide as the holotype; 1 ♀, 11.xii.1956, on the same place and host as the holotype.





303-306. *Neophyllobius viticola* spec. nov., ♀. 303, pedipalp; 304, dorsal view; 305, seta I; 306, coxae I-II



307-308. *Neophyllobius viticola* spec. nov., protonymph. 307, dorsal view; larva. 308, dorsal view

*Neophyllobius combreticola* spec. nov.

(figs. 309-313)

Female: Body length 345  $\mu$ m, width 290  $\mu$ m. Length of legs: 450; 390; 450; 480  $\mu$ m. Six pairs of *mc*: 70; 75; 75; 75; 70; 35  $\mu$ m. Nine pairs of *l*: 50; 45; 55; 50; 55; 55; 50; 45; 35  $\mu$ m. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Protonymph: Six *mc* and nine *l* setae. Leg setation: coxae 3-1-2-0, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 5-5-5-3, tarsi 1-1-1-1 midventral, the setae on the tarsi ends could not be observed.

Type material: Holotype ♀, RSA, Tshipise pad, 5 km outside Messina, on *Combretum apiculatum*, 29.iii.1973, M. K. P. MEYER (AcY 73/266-5223 PPRI). Paratypes: 1 protonymph with the same data as for the holotype; 6 ♀, RSA, Uington Nav. Sta., on *Cydonia oblonga*, ?.ix.1971, C. J. SMITH (AcY 71/584 PPRI).

73. Dorsal setae broad; *mc*<sub>3</sub> strong; genu II seta as long as genu; genu I and II setae not reaching first row of tibia setae . . . . .  
 . . . . . *N. curtipilis*  
 Dorsal setae smaller; genu I and II setae reaching at least the first row of tibia setae . . . . . 74

(continued on p. 201)

*Neophyllobius curtipilis* DE LEON

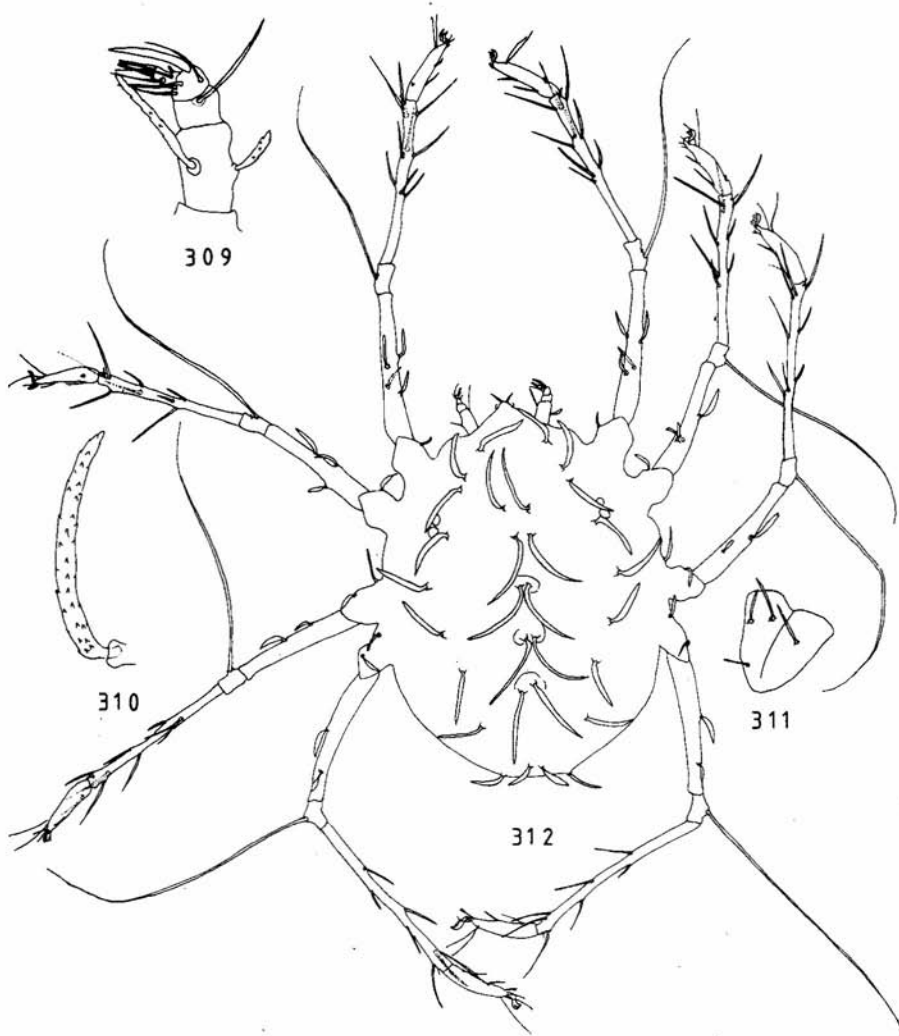
(figs. 314-318)

*Neophyllobius curtipilis* DE LEON, 1958: 179-180.

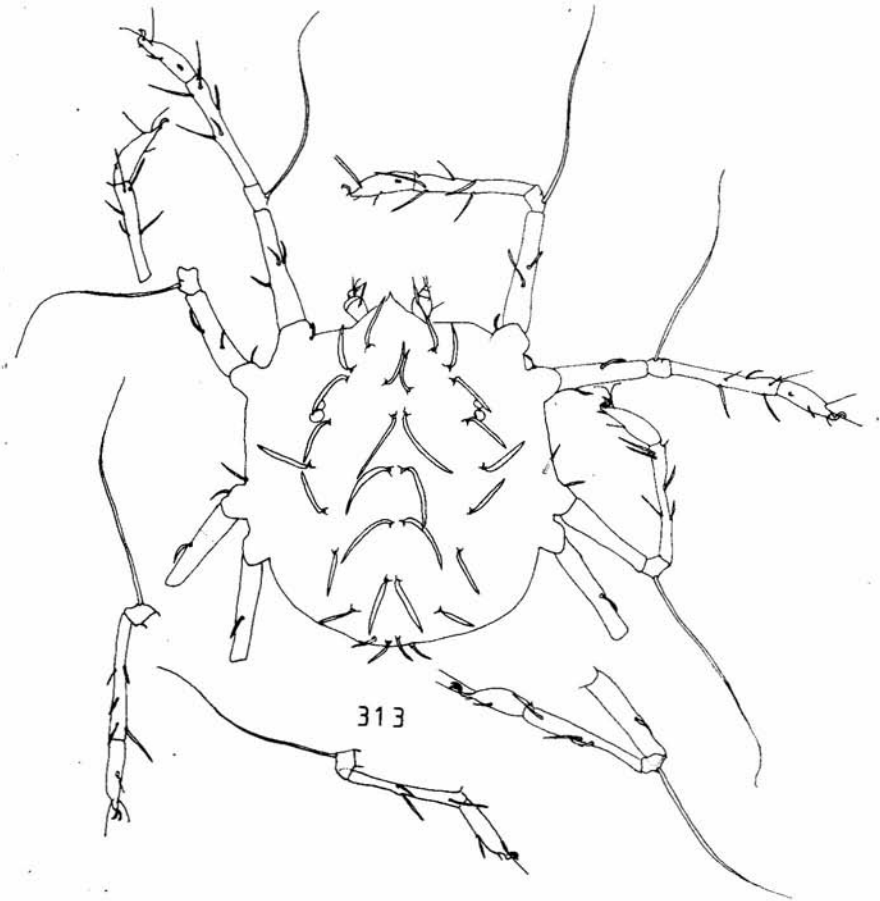
Female: Body length 345  $\mu$ m, width 290  $\mu$ m. Length of legs: 530; 435; 500; 545  $\mu$ m. Six pairs of *mc*: 55; 60; 90; 70; 60; 30  $\mu$ m. Nine pairs of *l*: 55; 55; 35; 35; 60; 35; 45; 35; 30  $\mu$ m. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Body smaller than that of female; *mc*<sub>6</sub> reduced in length.

Protonymph: Known, but not observed.



309-312. *Neophyllobius combreticola* spec. nov., ♀. 309, pedipalp; 310, seta  $l_5$ ; 311, coxae I-II; 312, dorsal view



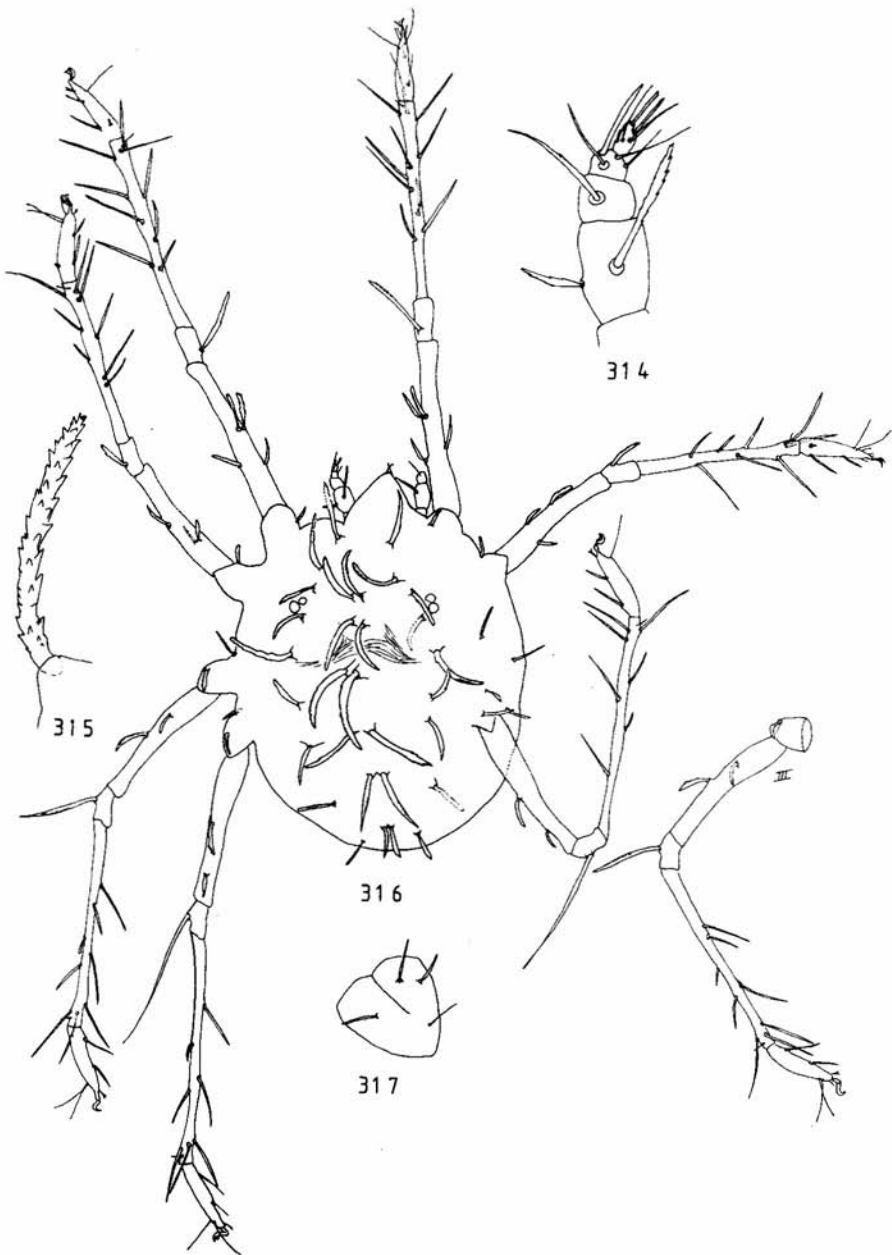
313. *Neophyllobius combreticola* spec. nov., protonymph. Dorsal view

Larva: Known, but not observed.

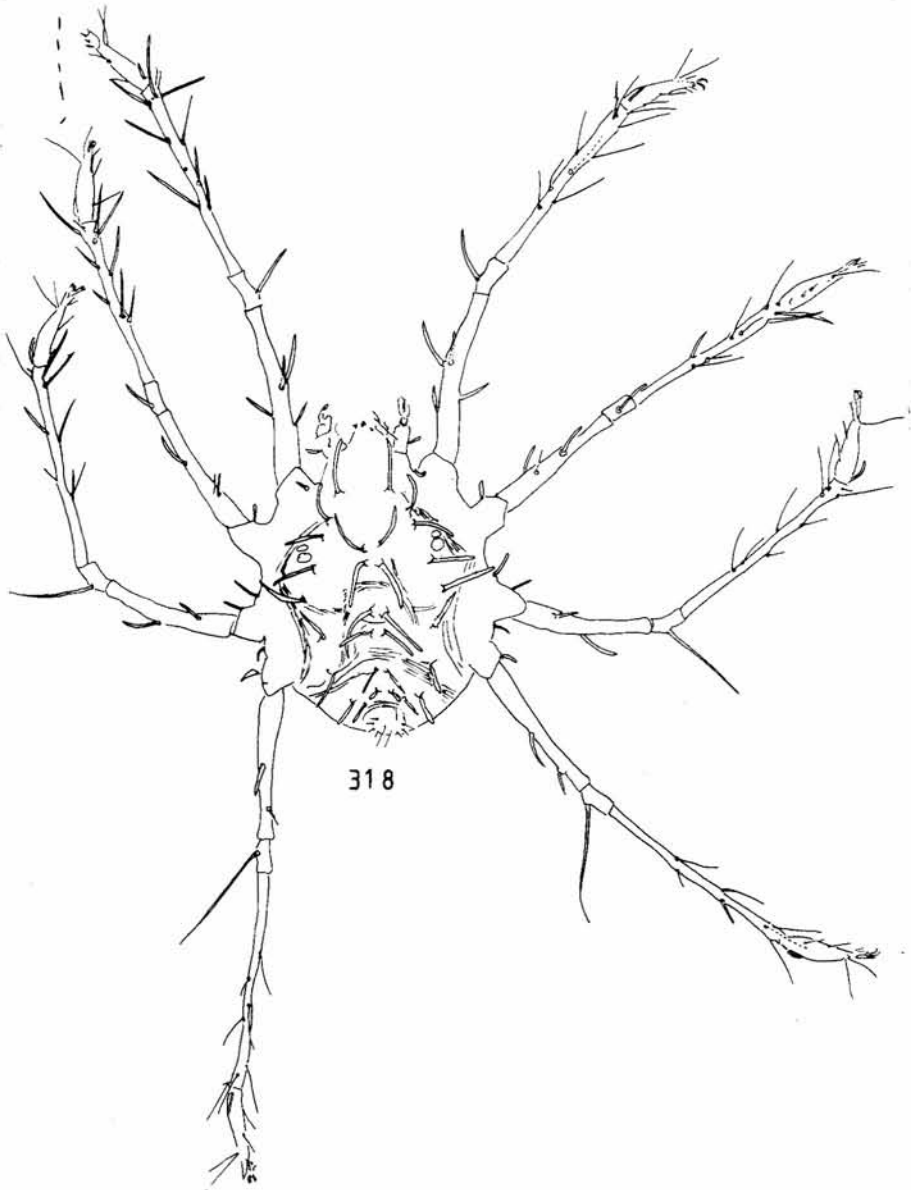
Material examined: Holotype ♀, Mexico, Chipas, Tuxtla Gutierrez, on *Cordia dentata*, 10.i.1957, D. DE LEON (1379- 2 MCZ). Paratype: allotype ♂, in the same slide as the holotype.

Other published material: Paratypes: 1 ♀ and 1 ♂, Tuxtla Gutierrez, on *Guazuma tomentosa* unknown data; 1 ♀, on unknown host, 12.i.1957; other additional specimens were taken from *Rhus schideana*, *Lonchocarpus rugosus*, avocado, *Quercus* spec. and several other hosts in the same area during January 1957.

Remarks. The holotype female has on tibia I, only on one side, an



314-317. *Neophyllobius curtipilis* DE LEON, ♀. 314, pedipalp; 315, seta  $I_5$ ; 316, dorsal view; 317, coxae I-II



318. *Neophyllobius curtipilis* DE LEON, ♂. Dorsal view

extra seta between setae four and five. The male has only on one side, except the normal male solenidion on tarsus II, a second solenidion.

74. Genu I and II setae reach till first row of tibia setae; palp-femur swollen(thick); palp-genu short . . . . . *N. sierrae*  
 Genu I and II setae longer; palp-femur longer . . . . . 75  
 (continued on p. 201)

***Neophyllobius sierrae* MCGREGOR**

(figs. 319-322)

*Neophyllobius sierrae* MCGREGOR, 1950: 64-66.

Female: Body length 360  $\mu$ m, width 295  $\mu$ m. Length of legs: 560; 475; 520; 575  $\mu$ m. Six pairs of *mc*: 70; 70; 80; 80; 80; 35  $\mu$ m. Nine pairs of *l*: 65; 60; 60; 60; 85; 60; 70; 45; 35  $\mu$ m. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Material examined: Holotype ♀, USA, California, Camp Nelson, on *Librocedrus decurrens*, 7.ix.1947, E. W. BAKER (1801 USNM). Paratype: 1 ♀ in the same slide as the holotype.

Remarks. The figure of *N. sierrae* given by MCGREGOR is not that of a female, but that of a protonymph. Because of the total different low setation numbers on femora and tibiae and missing the seta on coxa and trochanter IV.

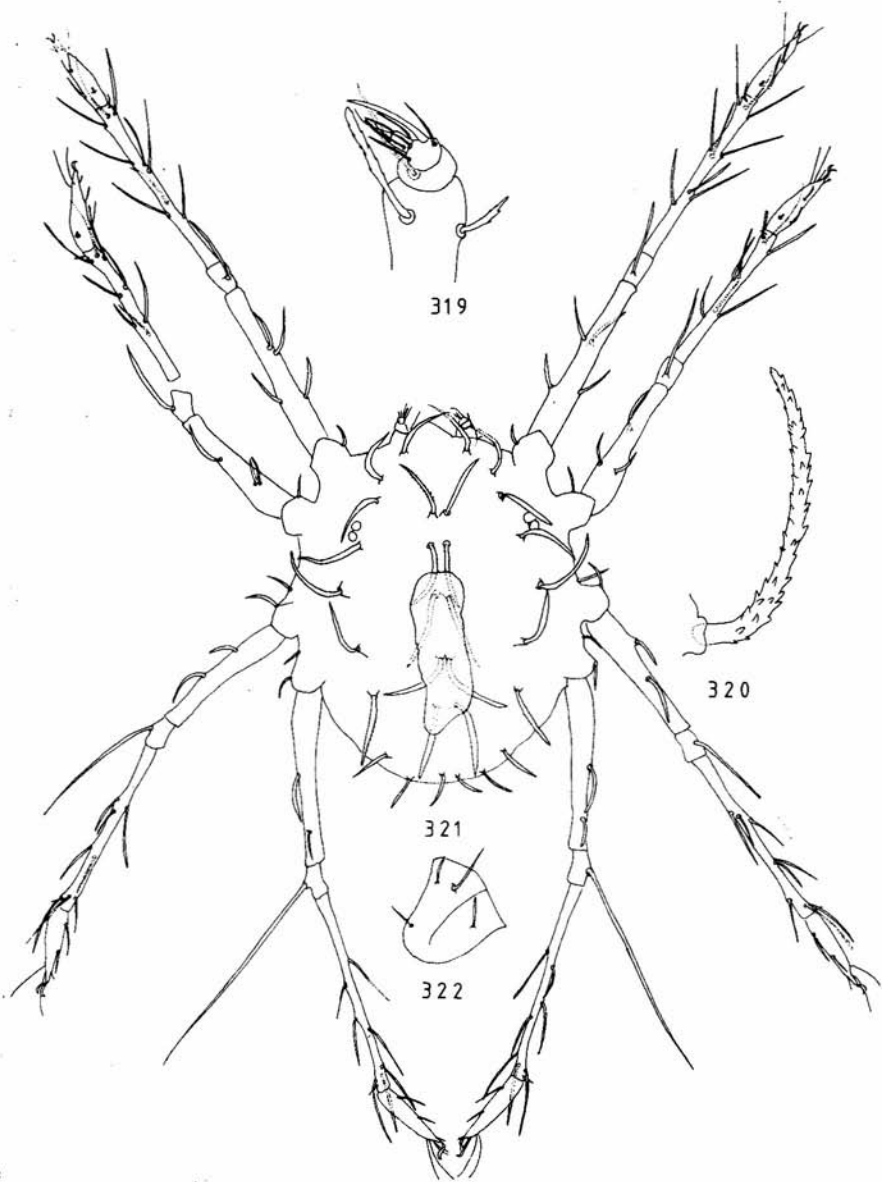
75. Body very small; the two solenidia on the palp-tarsus based very different in level; dorsal setae small with many spicules . . . . .  
 . . . . . *N. americanus*  
 Body wider; the two solenidia on the palp-tarsus not based very different in level; dorsal setae broader, with less spicules . . . 76  
 (continued on p. 204)

***Neophyllobius americanus* BANKS**

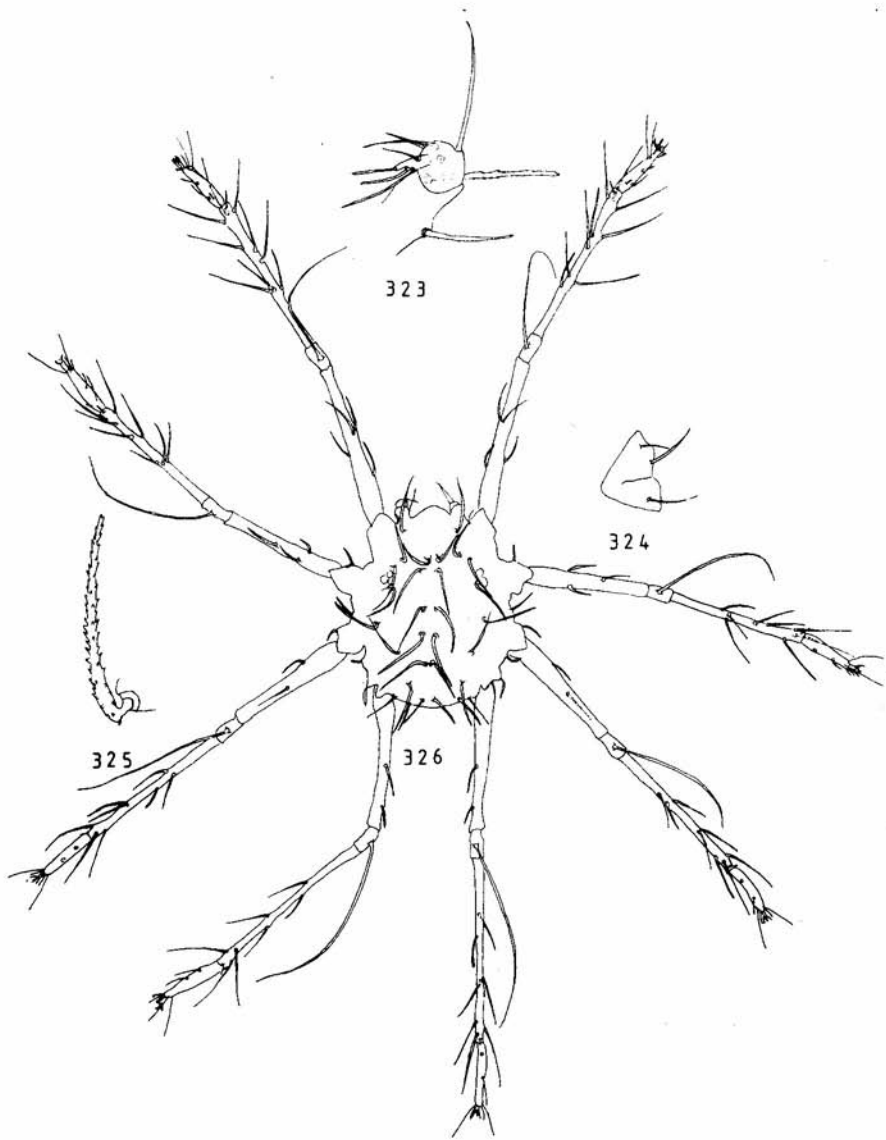
(figs. 323-326)

*Neophyllobius americanus* BANKS, 1904: 27-28; 1905: 133-134; 1907: 599; 1915: 153;  
 MCGREGOR, 1950: 58-59.





319-322. *Neophyllobius sierrae* MCGREGOR, ♀. 319, pedipalp; 320, seta  $l_5$ ; 321, dorsal view; 322, coxae I-II



323-326. *Neophyllobius americanus* BANKS, ♀. 323, pedipalp; 324, coxae I-II; 325, seta  $l_5$ ;  
326, dorsal view

Female: Body length 220  $\mu\text{m}$ , width 180  $\mu\text{m}$ . Length of legs: 500; 420; 435; 505  $\mu\text{m}$ . Six pairs of *mc*: 45; 60; 55; 70; 55; 30  $\mu\text{m}$ . Nine pairs of *l*: 60; 45; 55; 55; 60; 45; 45; 40; 35  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Protonymph: Six pairs of *mc* and nine pairs of *l*. Leg setation: coxae 3-1-2-0, trochanters 1-1-1-0, femora 3-2-1-1, genua 1-1-1-1, tibiae 5-5-5-3, tarsi 1 seta mid-ventral, tarsi ends could not be observed.

Material examined: Holotype ♀, USA, on oak, 15.iii.1901, BANKS? (1745-9371/81/2 USNM). Paratypes: 2 protonymphs in the same slide as the holotype.

Remarks. The body is very small and the legs are in relation to the body, very long. There are fifteen pairs of dorsal setae instead of fourteen as is given by MCGREGOR, (1950). The dorsal setae are very sharply dentated. The bases of *mc*<sub>1</sub> and *mc*<sub>2</sub> are based close to each other. The tenent hairs on the empodia are not as figured by MCGREGOR, but the same as in the other *Neophyllobius* species.

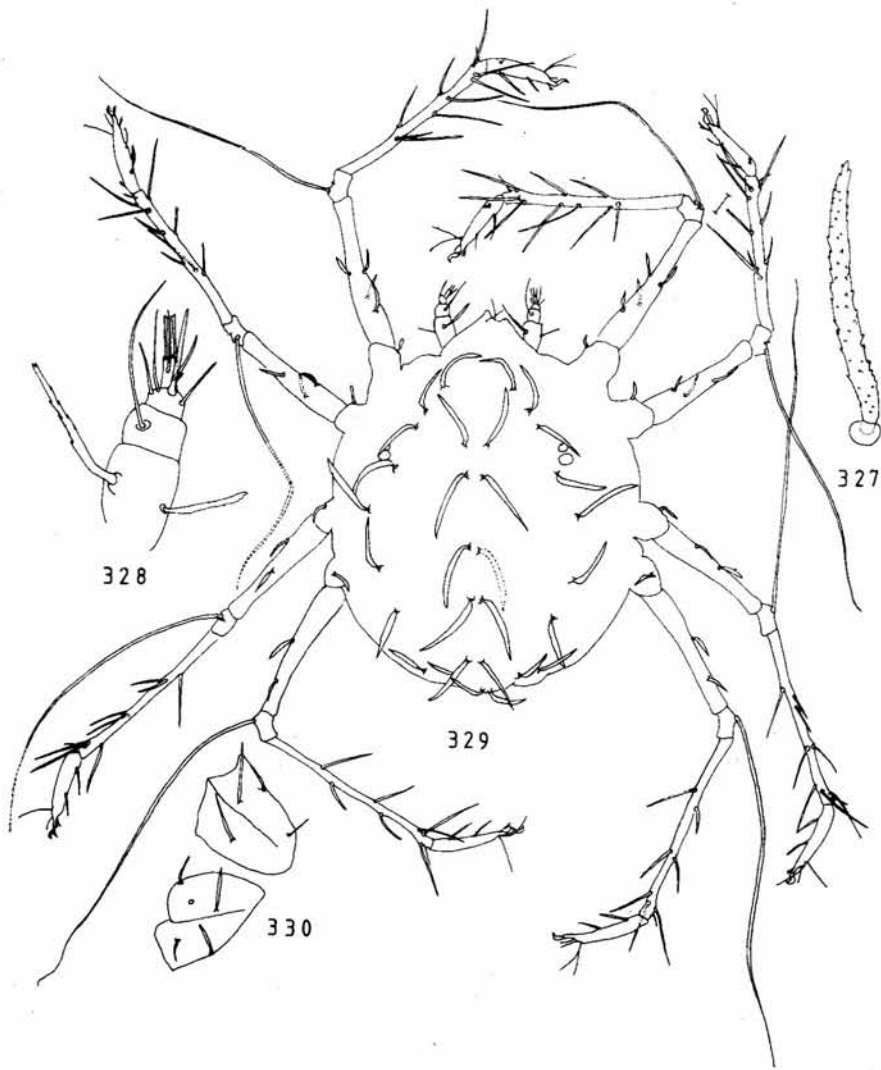
76. All genu setae are passing tarsus end; femur I setae short . . . . .  
 . . . . . *N. farrieri*  
 None of the genu setae are passing tarsus end . . . . . 77  
 (continued on p. 207)

### *Neophyllobius farrieri* DE LEON

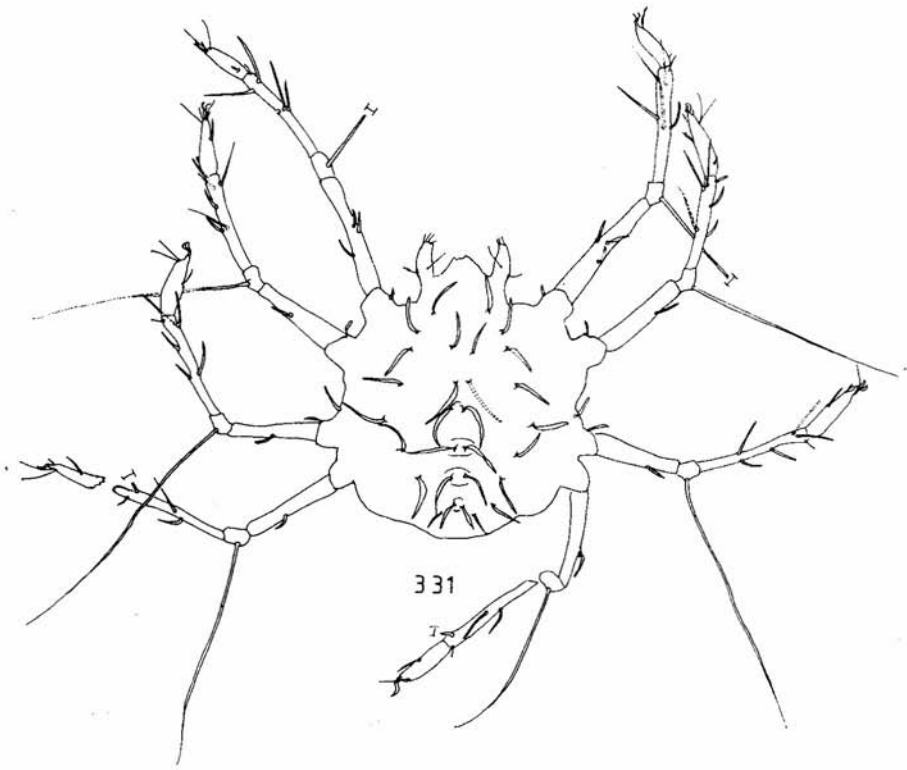
(figs. 327-331)

*Neophyllobius farrieri* DE LEON, 1958: 176-179.

Female: Body length 345  $\mu\text{m}$ , width 310  $\mu\text{m}$ . Six pairs of *mc*: 60; 70; 70; 75; 55; 35  $\mu\text{m}$ . Nine pairs of *l*: 55; 45; 55; 55; 70; 55; 55; 50; 35  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.



327-330. *Neophyllobius farrieri* DE LEON, ♀. 327, seta  $l_5$ ; 328, pedipalp; 329, dorsal view; 330, coxae I-IV



331. *Neophyllobius farrieri* DE LEON, protonymph. Dorsal view

Male: Unknown.

Protonymph: Six pairs of *mc* and nine pairs of *l*. Leg setation: coxae 3-1-2-0, trochanters 1-1-1-0, femora 3-1-1-1, genua 1-1-1-1, tibiae 5-5-5-3, tarsi 1-1-1-1, midventral. Distal parts of tarsi indistinct.

There is only one seta on femur II, while ROBAUX, 1975 gives two in his *N. farrieri* description.

Larva: Not examined.

Material examined: Holotype ♀, Mexico, Oax., Puente de Nejapa, on spanish moss, 31.i.1957, D. DE LEON (1498 a MCZ). Paratype: 1 protonymph in the same slide as the holotype.

Other published material: Paratypes: 1 ♀ and 1 larva, with the same data as for the holotype.

77.  $L_4$  shorter than  $l_7$ ;  $l_4$  longer than  $l_3$  . . . . . *N. inequalis*  
 $L_4$  longer than  $l_7$ ;  $l_4$  equal in length with  $l_3$  . . . . . *N. consobrinus*  
 (continued on p. 208)

***Neophyllobius inequalis* DE LEON**

(figs. 332-335)

*Neophyllobius inequalis* DE LEON, 1958: 176-177 + 179.

Female: Body length 295  $\mu\text{m}$ , width 220  $\mu\text{m}$ . Length of legs: 470; 390; 405; 485  $\mu\text{m}$ . Six pairs of *mc*: 50; 55; 50; 60; 60; 35  $\mu\text{m}$ . Nine pairs of *l*: 55; 55; 55; 50; 70; 50; 55; 35; 30  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

Protonymph: Not examined.

Material examined: Holotype ♀, Mexico, Ver., Veracruz, on *Erythrina* spec., 31.xii.1956, D. DE LEON (1319a MCZ).

Other published material: Paratypes: 1 ♀ and 1 protonymph, with the same data as for the holotype; 1 ♀, Mexico, Veracruz, on *Terminalia catappa*, 3.i.1957, D. DE LEON.

Remarks. *N. inequalis* looks like *N. consobrinus*. The small differences are the position of the first three setae on tibia III and the length of some *l* setae. The genu setae are shorter.

***Neophyllobius consobrinus* DE LEON**

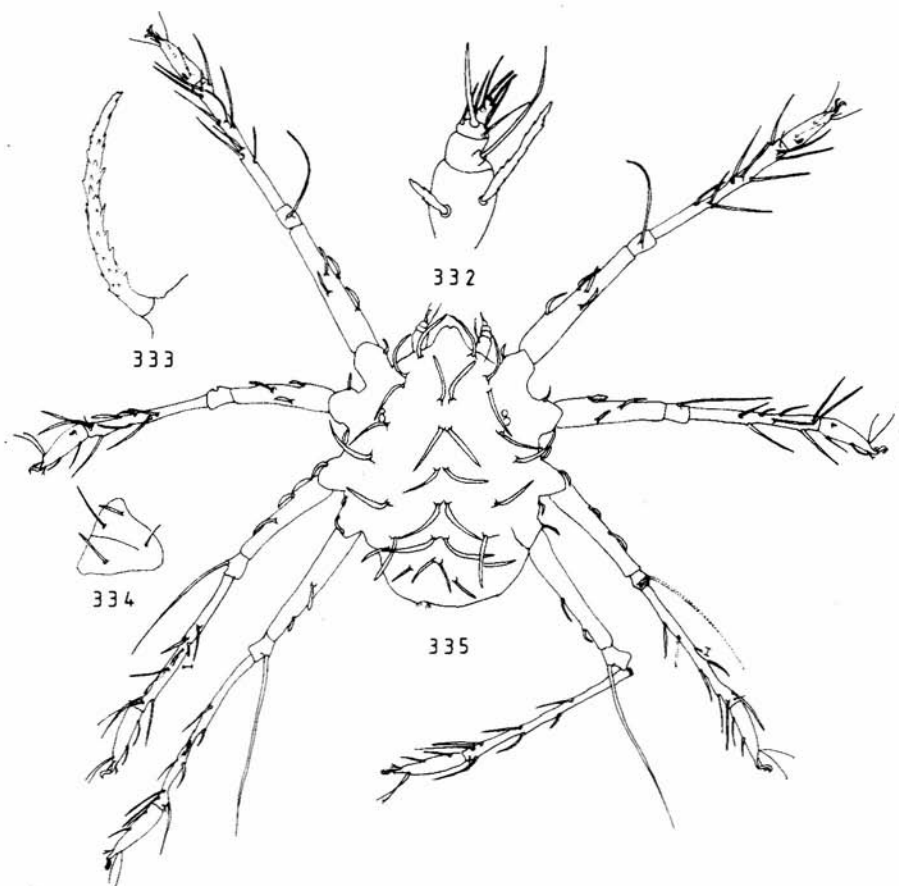
(figs. 336-339)

*Neophyllobius consobrinus* DE LEON, 1958: 177-179.

Female: Body length 280  $\mu\text{m}$ , width 235  $\mu\text{m}$ . Length of legs: 470; 405; 420; 485  $\mu\text{m}$ . Six pairs of *mc*: 45; 45; 45; 50; 50; 20  $\mu\text{m}$ . Nine pairs of *l*: 45; 45; 45; 55; 35; 40; 30; 20  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Unknown.

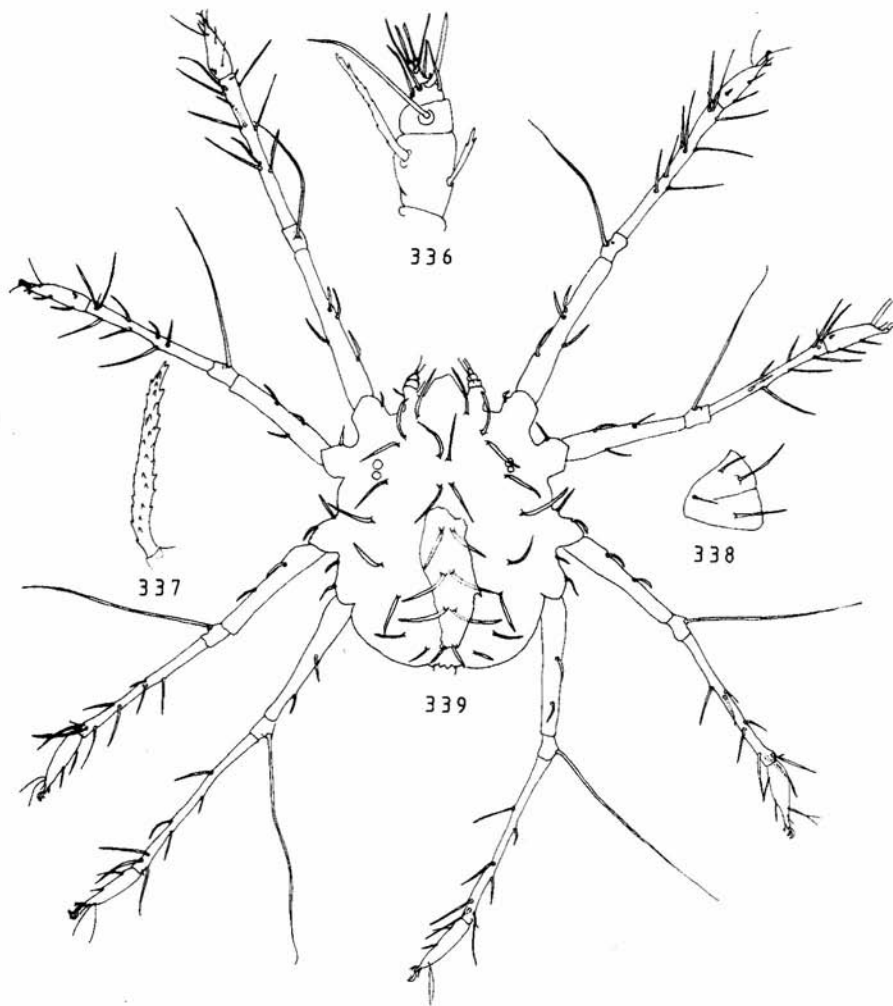
Material examined: Holotype ♀, Mexico, Chapas, Tuxtla Gutierrez, on *Jaquinia pungens*, 18.i.1957, D. DE LEON (1432 MCZ).



332-335. *Neophyllobius inequalis* DE LEON, ♀. 332, pedipalp; 333, seta  $l_5$ ; 334, coxae I-II; 335, dorsal view

Remarks. *N. consobrinus* resembles *N. inequalis*. The very small differences with *N. inequalis* are: The different length of the  $l$  setae and the position of the first three setae on tibia III. The longer genu setae are questionable, as it could be possibly a deutonymph. The author has his doubts if this species is not a deutonymph of *N. inequalis*.

78.  $Mc_4$  passes bases of  $mc_6$  . . . . . *N. aegyptium*  
 $Mc_4$  do not reach bases of  $mc_6$  . . . . . 79  
 (continued on p. 210)



336-339. *Neophyllobius consobrinus* DE LEON, ♀. 336, pedipalp; 337, seta  $l_5$ ; 338, coxae I-II; 339, dorsal view

### *Neophyllobius aegyptium* SOLIMAN & ZAHER

*Neophyllobius aegyptium* SOLIMAN & ZAHER, 1967: 28-29; ZAHER & GOMAA, 1979: 125.

Female: Body length 278  $\mu\text{m}$ , width 188  $\mu\text{m}$ . Six pairs of *mc* and nine pairs of *l*. Leg setation: coxae ?, trochanters 1-1-1-1, femora 4-3-(1)? -1, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 2-2-2-2,



midventral. Distal parts of tarsi indistinct. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia ? + 1 sword-like seta, tarsus ? + 2 eupathidia.

Male: Body smaller,  $mc_5$  and  $mc_6$  reduced in length. It could not be noticed if there were two solenidia on the distal end of tibia I. All tarsi have the normal curved proximal solenidion. Aedeagus present. There is one seta on femur IV and two setae on femur III.

No material examined, the slides are not longer present in FAUC.

Published material: Holotype ♀ and allotype ♂, Egypt, Giza, on apricot, palm and *Citrus* trees (FAUC).

Also mentioned from other places in Egypt; Giza, Wadi, El-Natroun, on *Citrus*, olive, date-palm and peach (SOLIMAN, ZAHER & IBRAHIM, 1973: 49-53); Lower-Egypt, Nile delta, on *Citrus sinensis* (RASMY, ZAHER & ALBAGOURY, 1972: 183-186); fruit trees (RASMY, ZAHER & ABOU-AWAD, 1972: 179-183).

Remarks. The male has two setae on femur III so it will be expected that the female has also two setae on femur III. The genu seta on genu IV is short, while mostly when the genu seta on genu III is long that of genu IV is also long.

79. Distance bases  $mc_4$ - $mc_5$  two times longer as distance  $mc_3$ - $mc_4$ ;  $mc_5$  longest  $mc$  seta . . . . . *N. niloticus*  
 Distance bases  $mc_4$ - $mc_5$  =  $mc_3$ - $mc_4$ ;  $mc_4$  longest  $mc$  seta . . . . .  
 . . . . . *N. fissus*

### *Neophyllobius niloticus* spec. nov.

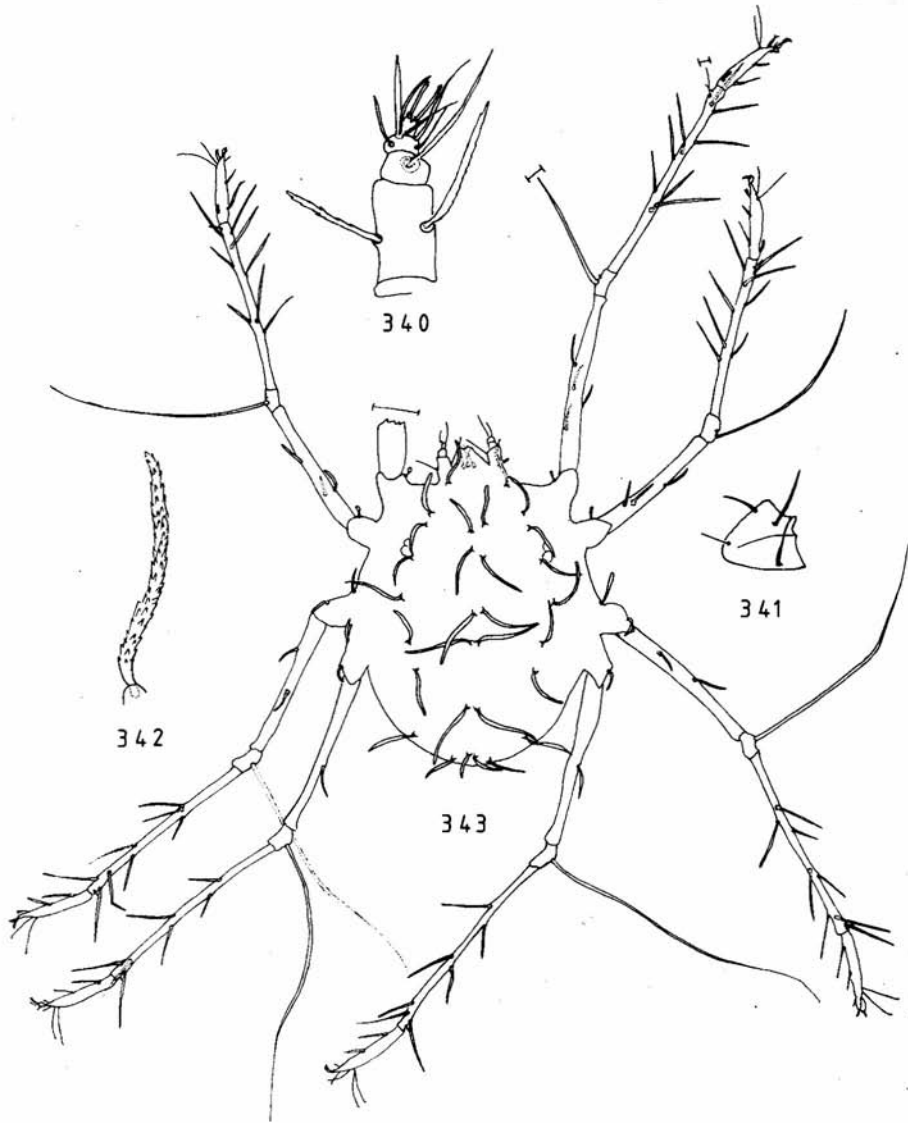
(figs. 340-343)

Female: Body length 295 µm, width 255 µm. Length of legs: 545; 550; 490; 515 µm. Six pairs of  $mc$ : 45; 55; 65; 70; 70; 30 µm. Nine pairs of  $l$ : 45; 45; 40; 45; 60; 45; 45; 50; 35 µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-1, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3(+ 1 sword-like seta), tarsus 2(+ 2 eupathidia).

Male: Unknown.

Type material: Holotype ♀, Egypt, Beni-Suif, on palmtrees, 16.vi.1978, E. A. GOMAA (ZMA).

Remarks. This species is characterized by a single seta on femur IV, like in *N. fissus*. The species differs from *N. fissus* in having all the dorsal setae longer. Also the both palpfemur setae are long, while in *N. fissus* the first seta is twice shorter than the second one.



340-343. *Neophyllobius niloticus* spec. nov., ♀. 340, pedipalp; 341, coxae I-II; 342, seta I<sub>5</sub>; 343, dorsal view

*Neophyllobius fissus* DE LEON

(figs. 344-347)

*Neophyllobius fissus* DE LEON, 1967: 31-32.

Female: Body length 265(265)  $\mu\text{m}$ , width 235(215)  $\mu\text{m}$ . Length of legs: 435(435); 375(375); 405(405); 445(445)  $\mu\text{m}$ . Six pairs of *mc*: 35(35); 35(45); 40(35); 45(45); 45(45) 20(25)  $\mu\text{m}$ . Nine pairs of *l*: 35(30); 35(35); 35(35); 40(40); 45(45); 35(35); 35(30); 30(30); 25(25)  $\mu\text{m}$ . Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-1, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Male: Body smaller, *mc*<sub>5</sub> and *mc*<sub>6</sub> reduced in length. Tibia I with two subterminal solenidia, of which the first is two times longer than the second.

Material examined: Holotype ♀, Trinidad, St. Augustine, on *Cocos nucifera*, 21.viii.1963, D. DE LEON (2289-5 a MCZ). Paratypes 1 ♀, and 1 allotype ♂, with the same data and in the same slide as the holotype.

Other published material: Paratypes: 2 ♀, Trinidad, St. Augustine, the first on *Caryota urens* and the second on *Thunbergia erecta*.

Remarks. There is one seta on femur IV as is the case in *N. niloticus*. It differs from the last one in having the dorsal setae shorter. The palpfemur setae are different in length, one is two times the other.

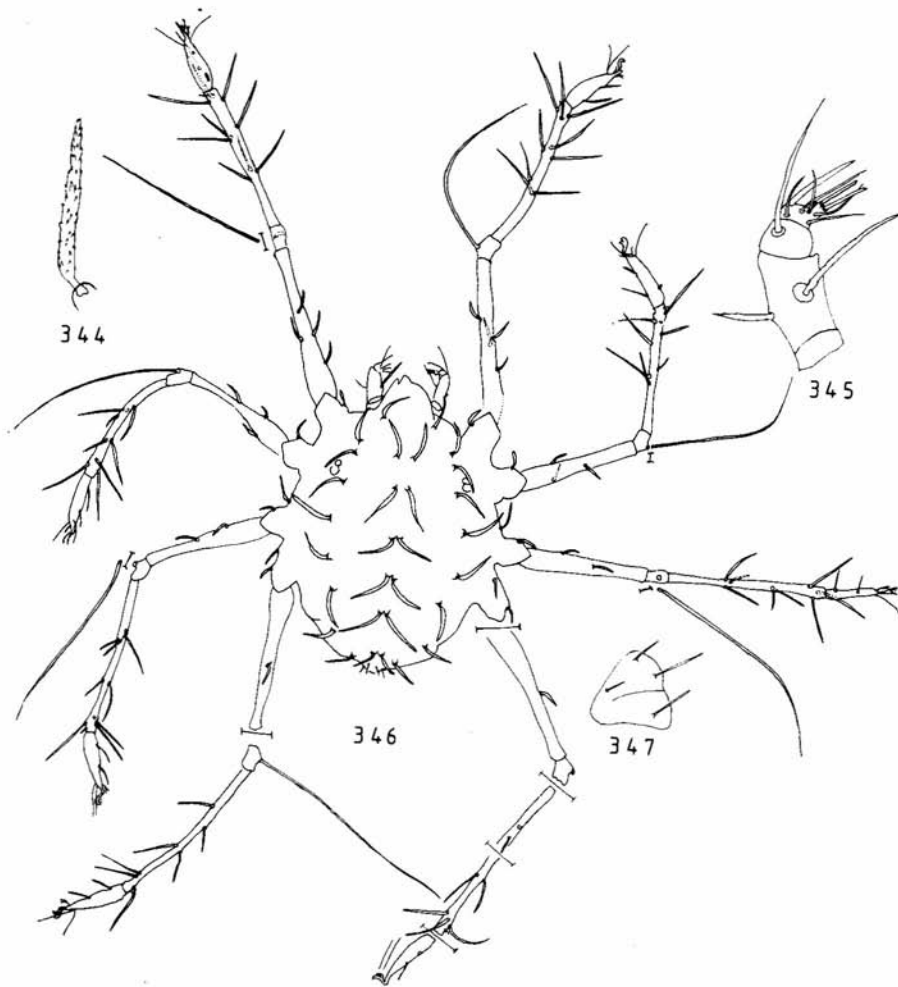
## ADDENDUM

The following species are not mentioned in the key because their information is incomplete. The cause of this may be, not present in the museums, bad original description or slides, or only description from a male. But the author wants to give also sparing information of these species, to complete this work.

*Neophyllobius elegans* BERLESE

*Neophyllobius elegans* BERLESE, 1886: 19-20, tav. III fig. 33, 33a/b; BERLESE, 1887:fasc. XXXIV no. 2 and no. 5; CANESTRINI, 1890: 457-458, tav. 39 fig. 44, tav. 40 fig. 33; BERLESE, 1900: 288, fig. 106.

Female: Body length 250  $\mu\text{m}$ , width 220  $\mu\text{m}$ . Six pairs of *mc*: 50; 50; 55; 55; 50  $\mu\text{m}$ ; (*mc*<sub>6</sub> missing). Nine pairs of *l*: 45; 45; 40; 45; 55; 40; 45; 30;



344-347. *Neophyllobius fissus* DE LEON, ♀. 344, seta  $I_5$ ; 345, pedipalp; 346, dorsal view; 347, coxae I-II

25  $\mu$ m. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia ? + ?, tarsus ? + 2 eupathidia. Setae on genua I-III shorter than half the length of tibia, on IV almost equal to the length of tibia.

Male: Body smaller,  $mc_6$  reduced in length. Tibia I has two solenidia on the distal end. All tarsi have a male solenidion.

Larva: BERLESE writes, that the larvae are missing the fourth pair of legs.

Described material: 1 ♀ (152/46 ISZAF), labelled "sulle piante, Giardino Giappone, Firenze, 1878" in plantis agri Patavini et Florentini; 1 ♂ (no 31/18 ISZAF) labelled "sugli agrumi, Portici" (Napoli), 1900 ?. These are the specimens of which information is given by Dr. F. PEGAZZANO. None of them is labelled as type material, see (CASTAGNOLI & PEGAZZANO, 1985).

(Type ♀, Italy, Padova, on *Quercus ilex*, 1886; allotype ♂; other ♂♂ and larvae ?. This type material is not present in the ISZAF).

Remarks. No material of this species was available for study to the author. The description is based on papers of BERLESE and CANESTRINI, and information provided by Dr. F. PEGAZZANO (ISZAF).

From this information the genu IV setae are almost equal to half the length of the tibia, in both sexes. The genu IV setae in the fig. of BERLESE is even passing the tarsus end. Therefore and because the author has found several times even two or sometimes three species on one hostplant, there is a doubt about the value of the available material as type material.

### *Neophyllobius saxatilis* HALBERT

(figs. 348-354)

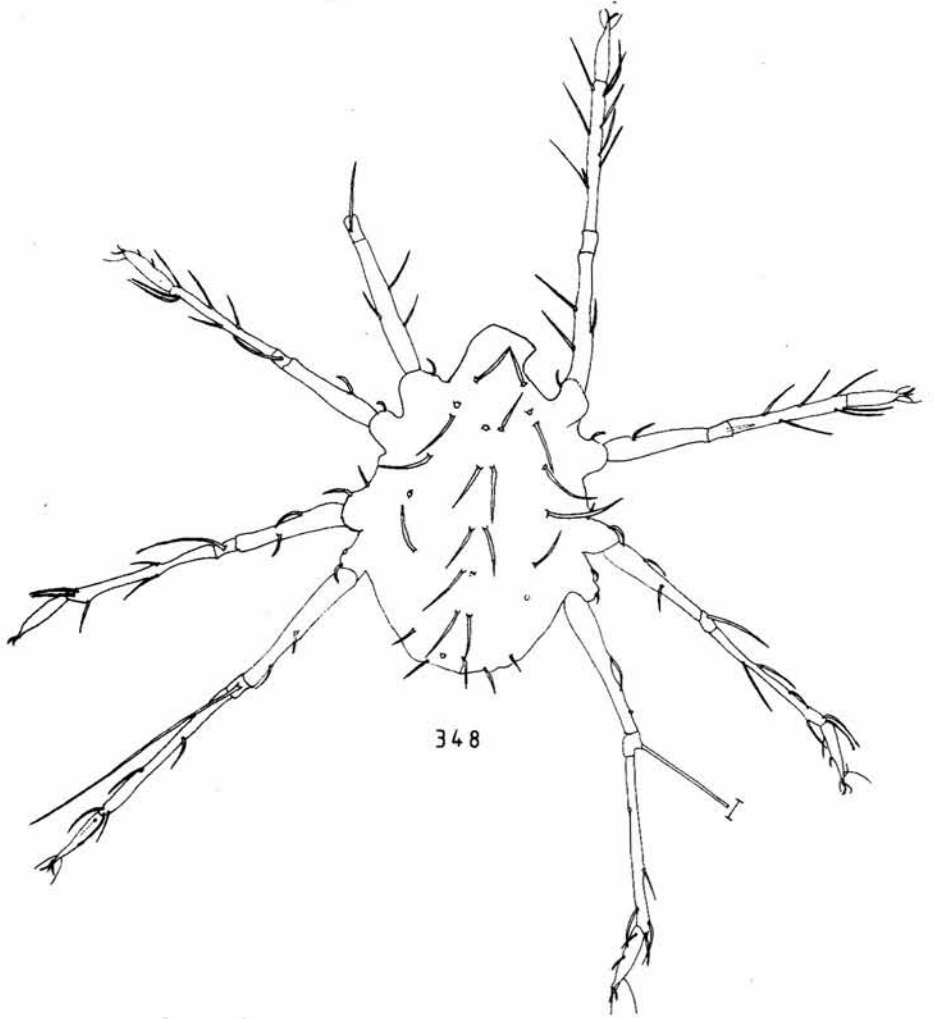
*Neophyllobius saxatilis* HALBERT, 1938: 384; v. EYNDHOVEN, 1938: 25-28; GEUSKES, 1939: 18-20.

Female (deutonymph ?): Body length 320 µm, width 210 µm. Length of legs: ?; 345; 380; 435 µm. Six pairs of *mc*: 55; 60; 55; 60; 60; 35 µm. Nine pairs of *l*: 55; 45; 50; 60; 80; 45; 45; 35; 30 µm. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora ?-?-2-2, genua 1-1-1-1, tibiae ?-8-8-7, tarsi ?-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia. Length of the genu setae: 109; ?, 125; 255 µm.

Measurements were taken from the Co-type, because the type slide (= deutonymph) was in a very bad condition. This Co-type has longer genu setae than the type. Legs I are not present.

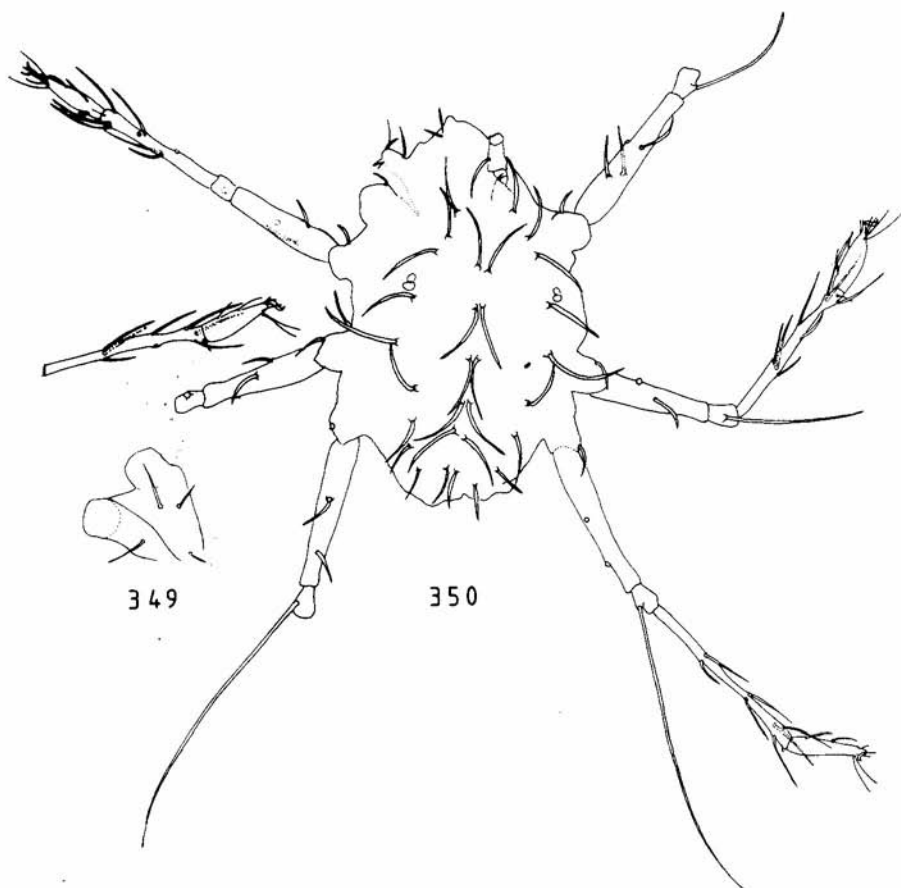
Male: Unknown.

Material examined: Type ♀, Ireland, Co. Dublin, Howth summit, on lichen covered rocks, ?ix.1918, J. N. HALBERT (NMI); Co-type: deutonymph, with the same data as for the type (NMI). Paratype: adult ?, in



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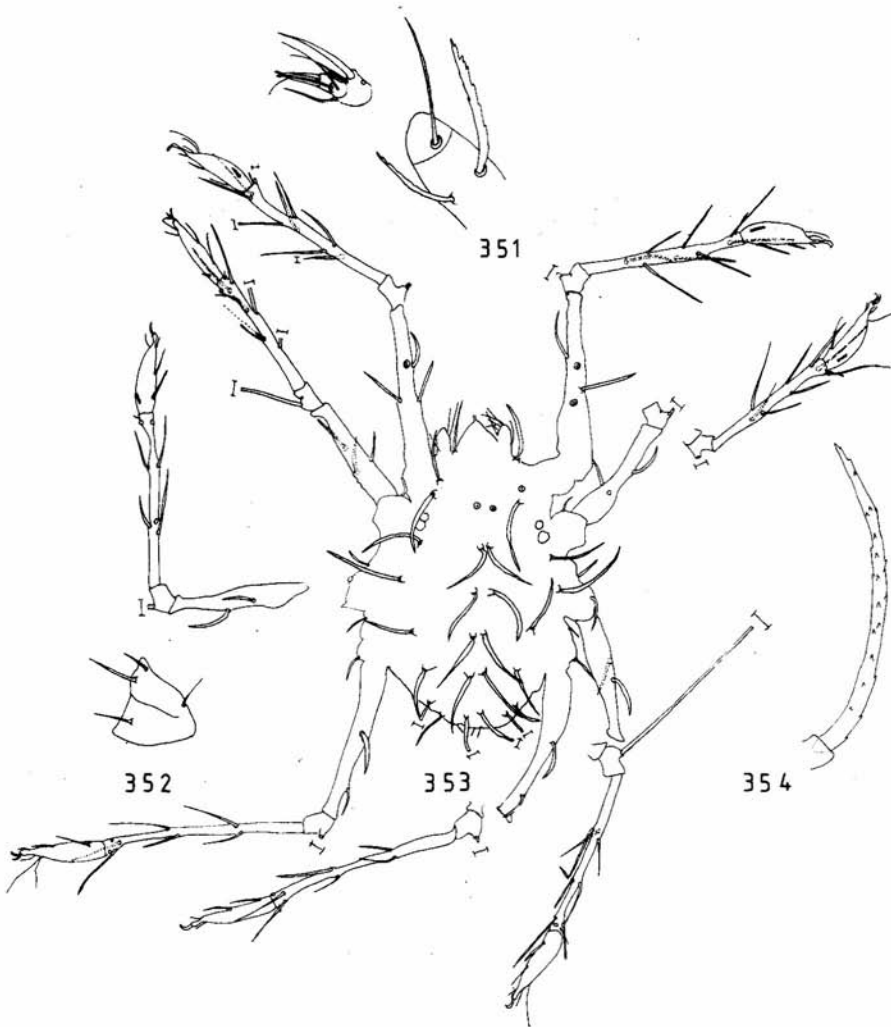
348. *Neophyllobius saxatilis* HALBERT, type ♀. dorsal view



349-350. *Neophyllobius saxatilis* HALBERT, cotype, ♀. 349, coxae I-II; 350, dorsal view

very bad condition, same data as for the type (NMI); ♀, leaf debris, Amsterdamse waterleiding duinen, Vogelenzang (Vossedel), 24.iv.1932, G. L. v. EYNDHOVEN (ZMA- no 295).

Remarks. The type slide is in a very bad condition. There are six pairs of *mc* and eight *l* setae (*l*<sub>7</sub> is missing). Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora ((3)-(1)-2-2 ?), genua 1-1-1-1, tibiae (8-6-6-5 ?). Seta on genu IV is whip-like. Length of legs (HALBERT): 395; 330; 365; 420 μm.



351-354. *Neophyllobius saxatilis* HALBERT, according to VAN EYNDHOVEN, ♀. 351, parts of pedipalp; 352, coxae I-II; 353, dorsal view; 354, seta  $l_5$



*Neophyllobius spatulus* DE LEON

*Neophyllobius spatulus* DE LEON, 1958: 179-181.

Female: Body length 310  $\mu$ m, width 225  $\mu$ m. Six pairs of *mc*: (45-65); (50-75); 75; 70; 60; 35  $\mu$ m. Nine pairs of *l*: 65; 60; 50; 45; 65; 45; 35; 30; 20  $\mu$ m. Leg setation: coxae 3-2-1-1, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi ?-?-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like, tarsus 2 + 2 eupathidia.

Male: Unknown.

Published material: Holotype ♀, Mexico, Nay, route 15, nine miles west of Tepic, on a composite, 25.iii.1957, D. DE LEON; Paratypes: 2 ♀, on a second composite, same data as holotype; 1 ♀, Mexico, Oax., route 190 north of Tehuantepec, km post 666, on a malpighiaceae shrub, 31.i.1957. (slides are disappeared).

*Neophyllobius summersi* MCGREGOR

*Neophyllobius summersi* MCGREGOR, 1950: 67-69.

Female: Dorsum with six pairs of *mc* and nine pairs of *l*. Leg setation: trochanters 1-1-1-1, femur I with 4 setae, genua 1-1-1-1, tarsus I has two setae. Distal parts of tarsus I indistinct.

The second segment (palfemur!) has three setae, which is not the normal pattern and never found in any other *Neophyllobius* species.

Published material: Types 4 ♀, USA, California, one and a half miles north of Davis, on saltgrass, ?.i.1848, E. COT (1898 USNM). (The slide is disappeared).

*Neophyllobius mexicanus* MCGREGOR

*Neophyllobius mexicanus* MCGREGOR, 1950: 63-64; DE LEON, 1958: 181.

Published material: Holotype ♀, intercepted at Brownsville, Texas, in avocado budwood from "Mexico", ?.xi.1948, A. WILLIAMSON. D. DE LEON and F. MEAD found a specimen which fits with the description of *N. mexicanus* in Florida, Key Largo, on *Zanthoxylon* spec., ?.vi.1958. (None of the slides could be obtained).

***Neophyllobius ornatus* WOMERSLEY**

*Neophyllobius ornatus* WOMERSLEY, 1940: 248-250.

Female: Body length 250  $\mu\text{m}$ , width 175  $\mu\text{m}$ . Length of legs: 445; 390; 390; 430  $\mu\text{m}$ . There are 15 pairs of dorsal setae: six (?) pairs of *mc* and nine (?) pairs of *l*. Leg setation: Coxae 3-1-?-?, trochanters 1-1-1-1, femora 4-2 ?- 2 ?-1 ?, genua 1-1-1-1, tibiae ?-8-8-7, tarsi 2-2-2-2, midventral. Distal parts of tarsi indistinct. Pedipalp setation: femur 2, genu 2 ?, tibia 2 ? + 1 sword-like seta, tarsus 2 + 2 eupathidia.

Published material: holotype ♀, Australia, New South Wales, Boomi, on *Apiomorpha* gall on *Eucalyptus* spec., 16.viii.1934. The type-slide is absent since 1972, (D. C. LEE (SAM) personal communication).

Remark: If this species has one seta on femur IV it should belong to the group *N. aegyptium*, *N. niloticus* and *N. fissus*. WOMERSLEY gives thirteen pairs of dorsal setae, but in his figure he has fourteen pairs. The *mc*<sub>6</sub> is missing on the left side and the *l*<sub>8</sub> is missing on the right side. Another question is that there are two setae on the palpgenu instead of one.

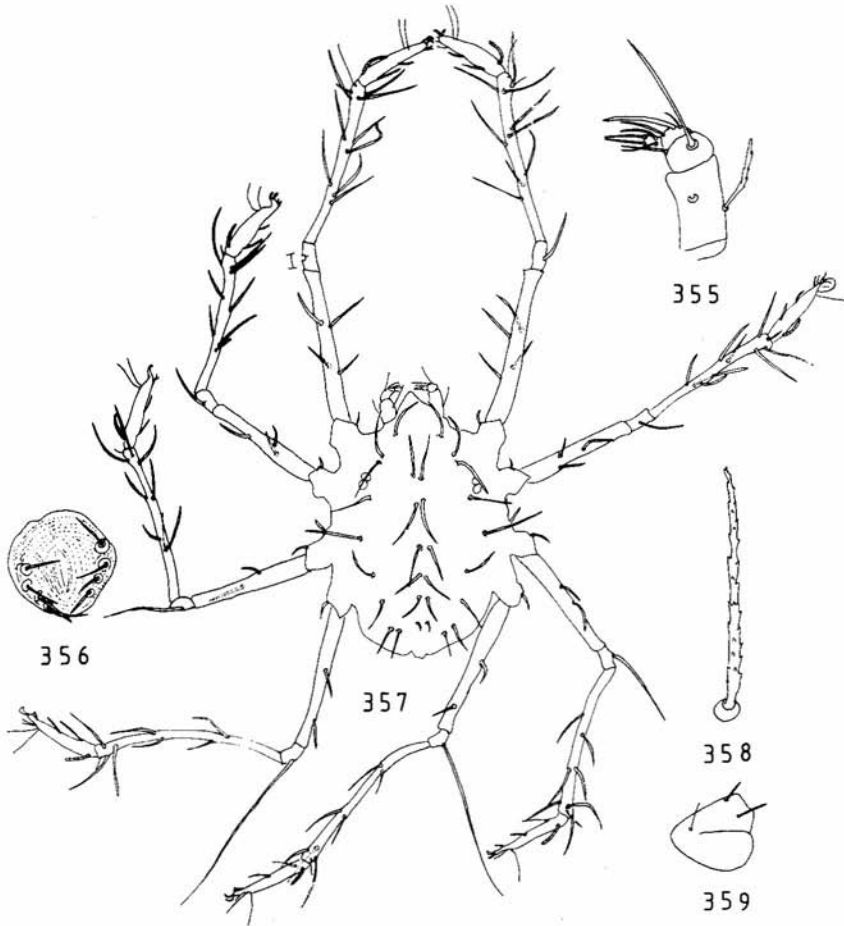
***Neophyllobius vanderwieli* OUDEMANS**

(figs. 355-359)

*Neophyllobius vanderwieli* OUDEMANS, 1926: 121-122; OUDEMANS original drawing 915; CORPORAAL, 1928: 129; GEJSKES, 1939: 19-20.

The description is of a male. There are six pairs of *mc* and nine pairs of *l*. The *mc*<sub>6</sub> are reduced in length. Leg setation: coxae 3-1-2-2, trochanters 1-1-1-1, femora 4-3-2-2, genua 1-1-1-1, tibiae 9-8-8-7, tarsi 10-10-8-8. Pedipalp setation: trochanter 0, femur 2, genu 1, tibia 3 + 1 sword-like seta, tarsus 2 + 2 eupathidia. The distal end of tibia I has two solenidia, one short and the second longer. The tarsi I-IV have a curved male solenidion. The genital-anal area has four pairs of setae.

Material examined: Type material: allotype ♂, The Netherlands, Naardermeer, in nest of *Talpa europaea* L., 16.ii.1926, P. v. D. WIEL (3503 ZMA).



355-359. *Neophyllobius vanderwieli* OUDEMANS, ♂. 355, pedipalp; 356, genital-anal area; 357, dorsal view; 358, seta  $l_5$ ; 359, coxae I-II

#### ADDITIONAL REMARKS

KUZNECOV & LIVSHITS, 1979: 84 and 102.

In the description of *N. equalis* from KUZNECOV & LIVSHITS (1979) the length of some *mc* and *l* setae differs from *N. equalis*. The figure is different in: the position and length of femur I setae. The distal seta on femur IV is passing the genu border. The genu I seta is longer, the genu II seta is shorter and the genu III seta is longer than in *N. equalis*. The third

seta on tibia II and III is too long. The tarsus III has a solenidion which is not normal and not present in the type species.

KUZNECOV & LIVSHITS, 1979: 84 and 103.

The figure of *N. sierrae* given by KUZNECOV & LIVSHITS (1979) is different from the type material of MCGREGOR (1950) based on the different measurements of the dorsal setae. The palp is too long and too small for *N. sierrae*. The most distal seta on femur II, III, IV reach the genu border, which is not in *N. sierrae*.

The fig. 36 mentioned in the text of KUZNECOV & LIVSHITS (1979) as being a figure of *N. sierrae*, is mentioned in the legends of figures as being *N. rarus* spec. nov. female. But I expect that this will be a mistake.

ROBAUX, 1975: 248-256; KUZNECOV & LIVSHITS, 1979: 83 and 102.

The species mentioned by ROBAUX (1975) as *N. farrieri* is not *N. farrieri* DE LEON, because the femur I setae are much different from the type species of *N. farrieri*. The species mentioned by ROBAUX is close to *N. coloradensis* (near *N. lamimani*). It differs from *N. coloradensis* in the proportion of the setae on femur I and II, the shorter genu I and II setae and the length- position of the first three setae on tibia III. If the protonymph mentioned by ROBAUX belongs to the same species, it has five setae on tibia I, while that of *N. coloradensis* has six setae on tibia I.

KUZNECOV & LIVSHITS (1979), give in their description of *N. farrieri* total different measures of the dorsal setae than that of the type female. The  $mc_1$  and  $mc_2$  setae are not based on stronger tubercles. The setae on femur I are too long and too broad and in a different position. The distal femur IV seta is passing the genu border which is not in the type of *N. farrieri*.

KUZNECOV & LIVSHITS, 1979: 85 and 103.

In the *N. inequalis* figured by KUZNECOV & LIVSHITS (1979, fig. 37) the setae on femur I, II, III and IV are different located than those of the type species. Also the genu setae are different in length.

MUMA, 1975: 49-50.

The *N. mexicanus* mentioned by MUMA differs in the next things from the description of MCGREGOR: the most distal femur I seta is much shorter. The  $mc_1$  is shorter and the  $mc_4$  is longer than the interval to the base of the seta next behind. The genu setae are shorter.

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(Names in bold are new species, in italics are synonyms, wrong combinations or misidentifications). (B) = "see BOLLAND (1986)".

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