

TWO NEW SPECIES OF *OTOPHEIDOMENIS* MITES FROM SOUTH AMERICA
(ACARINA : PHYTOSEIIDAE) ¹

BY

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Genus *Otopheidomenis* Treat was described to include *O. zalelestes* Treat (TREAT, 1955). The main characteristics of the genus were : one dorsal shield, incised mediolaterally, with 14 pairs of setae, podonotum lacking seta i₃ ; two pairs of sublateral setae on membranous integument. Tritosternal laciniae absent, basal sclerite present. Sternal shield with two pairs of setae on it, third pair on small plates ; metasternal setae absent. Genital shield rounded posteriorly, with a pair of marginal genital setae. Anal shield small. Leg IV with macroseta on basitarsus (TREAT, 1955 ; CHANT, 1965 ; CHANT and LINDQUIST, 1965). Upto this time, *Otopheidomenis* was known only by its type species. The recent discovery of two new species of moth mites discussed in this paper has prompted to redefine the genus as follows :

One dorsal shield, incised mediolaterally ;
with 11-14 pairs of setae, i₃ present or
absent ; one to two pairs of sublateral setae
on membranous integument. Tritosternal laciniae
absent, basal sclerite present or absent.
Sternal shield with two or three pairs of setae
on the shield ; metasternal setae absent.
Genital shield rounded posteriorly, genital setae
present or absent, if present off the shield
or very close to the shield. One to three pairs
of ventral setae on integument between genital
and anal shield. Leg IV with or without macroseta
on basitarsus. Peritremes short or long.

Otopheidomeninae Treat is presently represented by six known genera and many of these are monotypic. As suggested by TREAT (1965) more informations are necessary for a full understanding of this group. Based on present informations it is clear that there are two distinct ecologically isolated groups of mites in Otopheidomeninae : (1) Those that are found on Lepidoptera and, in general, prefer tympanum for living. In these mites the metasternal setae are absent, tritosternum is absent or reduced to basal sclerite only, anal shield is present,

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and spermatheca is reduced to a simple tube. (2) Those that are found on Hemiptera and, in general, prefer dorsal abdomen under the wings for living. In these mites metasternal setae are present (except *Nabiseius duplicisetus* Chant and Lindquist), tritosternum and spermatheca are well developed, and ventrianal shield is present. The first group includes *Otopheidomenis* Treat, and *Noctuiiseius* Prasad; the second group includes *Entomoseius* Chant, *Hemipteroseius* Evans, *Nabiseius* Chant and Lindquist, and *Treatia* Krantz and Khot. All the above genera can be separated as follows

Key to genera of Otopheidomeninae : Females.

1. Tritosternum reduced to small sclerite or absent; with anal shield; spermatheca reduced to a long, thread like tube..... 2
— Tritosternum well developed, with laciniae; ventrianal shield present; spermatheca short, well developed 3
2. One dorsal shield, incised mediolaterally; sternal setae on the shield..... *Otopheidomenis*
— Two dorsal shields, well separated; sternal setae off the shield..... *Noctuiiseius*
3. Three pairs of sternal setae and one pair of metasternal setae present..... 4
— Three pairs of sternal setae present, pair of metasternal setae absent..... *Nabiseius*
4. Palp genu with 5-6 setae, genu and tibia of leg I each with 10 setae..... 5
— Palp genu with 0-1 seta, genu and tibia of leg I each with 6-7 setae..... *Hemipteroseius*
5. Dorsal shield entire, genital shield with a pair of setae, ventrianal shield with one pair of preanal setae *Entomoseius*
— Dorsal shield subdivided into two subequal parts, genital shield without genital setae, ventrianal shield with two pairs of preanal setae..... *Treatia*

***Otopheidomenis coeytes* n. sp.**

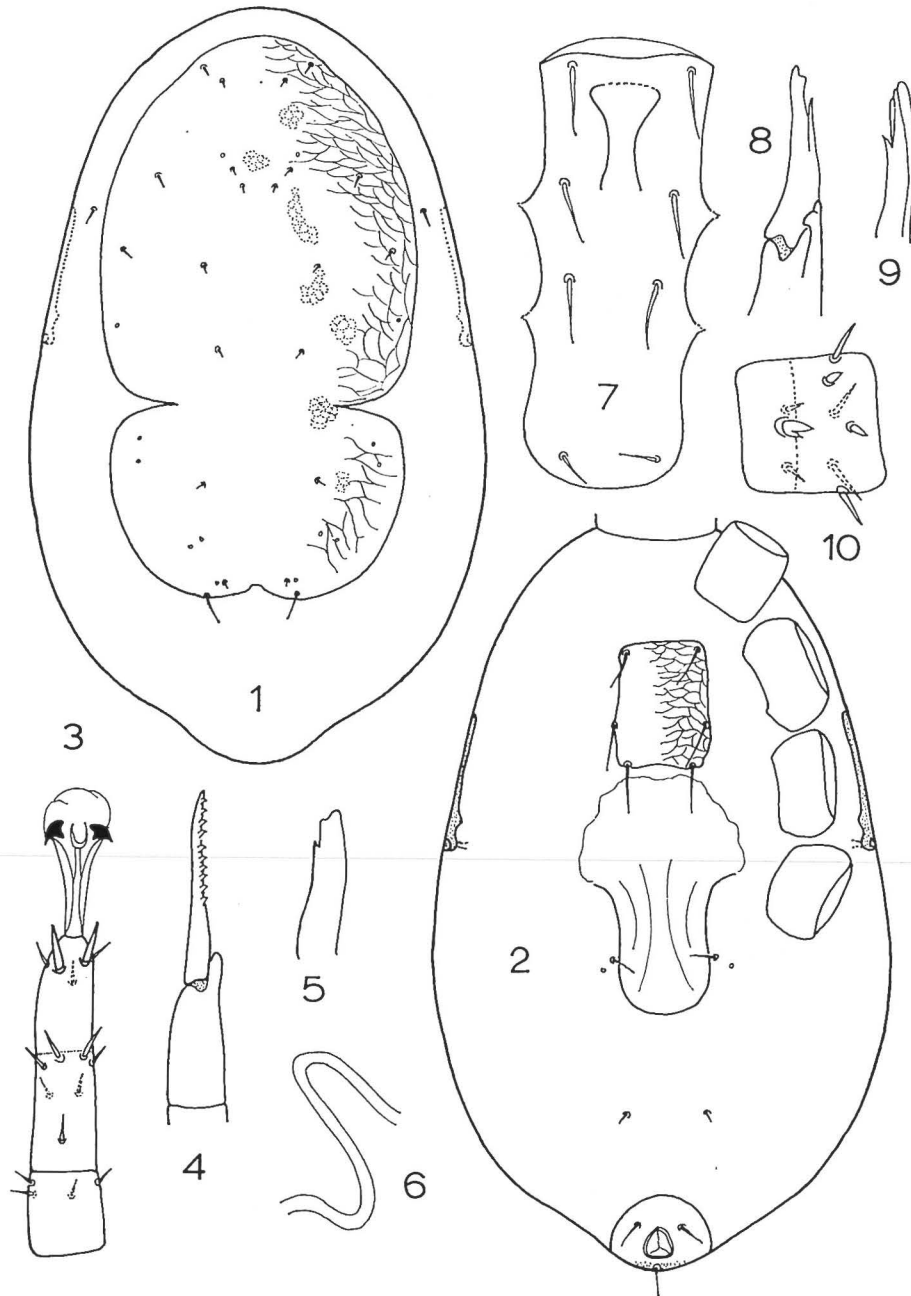
(Figs. 1-10).

Diagnosis : Female with genital setae off the shield, peritremes approaching the posterior margin or to the middle level of coxae II, sternal shield about 1.4 times as long as wide, and tarsus II-IV with two heavy ventral setae at the anterior tip. Male with four pairs of sternal setae on the shield, and a thick, and/or spurred ventral seta on femur II.

Female : Idiosoma 665-725 μ long and 422-460 μ wide (10 specimens, measured at the longest and widest point). Dorsal shield incised mediolaterally, concave posteromedially, 440-470 μ long and 274-310 μ wide, reticulated over most of the surface but reticulation very distinct laterally. Body dorsum with 12 pairs of minute setae (except Z_5) of which 11 pairs are on shield and one pair (r_5) are on lateral membranous integument (Fig. 1); dorsocentral setae measure 5-7 μ long, lateral setae 8-9 μ long, Z_5 21-25 μ long, and r_5 13-17 μ long.

Tritosternal laciniae and the basal sclerite absent. Sternal shield 98-104 μ long and 72-79 μ wide, well sclerotized and reticulated over entire surface, with three pairs of setae measuring 36-44 μ , 37-44 μ , and 39-50 μ long (anterior to posterior), pores not visible. Genital shield rounded posteriorly, pair of genital setae measure 17-21 μ long, off the shield, membranous anterior margin reaching close to posterior level of sternal shield. Anal shield small, 98-104 μ in width. One pair of small ventral setae measuring 8-11 μ long, on integument between genital and anal shield (Fig. 2). Metapodal plates absent. Spermatheca is in the form of a very long tube (Fig. 6). Peritremes measure 96-143 μ long and reach to the posterior margin or to the middle level of coxae II.

Fixed digit of chelicera reduced to small protuberance ; movable digit long, slender, with eight to eleven teeth on it (Fig. 4). Venter of gnathosoma with three pairs of hypostomal setae. Corniculi long, slender (Fig. 5). Tectum with smooth, round anterior margin. Number of setae on palp (trochanter to tibia) as follows : 0-4-5-12. Number of setae on legs (coxa to tibia) : I.



FIGS. 1-10 : *Otopheidomenis cocytes* n. sp. : 1-6 female ; 1. — dorsum, 2. — venter, 3. — tarsus IV, 4. — chelicera, 5. — anterior part of corniculus, 6. — part of spermatheca ; 7-10 male ; 7. — sternogenital shield, 8. — chelicera with spermatodactyl, 9. — anterior part of corniculus, 10. — femur II.

2-5-11-9-8 ; II. 2-5-9-8-7 ; III. 2-5-6-8-7 ; and IV. 1-5-6-8-7 ; basitarsus of leg IV without any macroseta, but two very strong ventral setae present on anterior tarsus of legs II-IV (Fig. 3). Tarsi I-IV with round lobed pulvilli and small claws.

Male : Idiosoma 369-392 μ long and 249-290 μ wide (5 specimens). Dorsal shield 316-336 μ long and 224-228 μ wide. Dorsal chaetotaxy is like that of female. Tritosternal laciniae and the basal sclerite absent. Sternogenital shield 187-206 μ long, well sclerotized, with four pairs of setae measuring 23-32 μ , 21-31 μ , 25-34 μ , and 14-21 μ long, respectively ; genital opening located anteriorly (Fig. 7). One pair of small setae on integument between anal and sternogenital shield. Peritremes small, measuring 35-51 μ in length, reaching to the middle level of coxae III. Movable digit of chelicera with spermatodactyl as in Fig. 8. Corniculi as in Fig. 9. Palp and leg chaetotaxy is like that of female except that most ventral setae on legs are small, thick, spine like ; genu II has nine setae ; and femur II has one spurred ventral seta (Fig. 10). Remaining characters are like that of female.

Collection data : Holotype, female, Peru, Loreto, Pucallpa, 4 August 1962 (W. T. VAN VELZEN), from *Cocytius duponchel* (POEY) (Lepidoptera : Sphingidae), in U. S. National Museum, Washington, D. C. Paratypes, 23 females, 6 males, and 8 larvae and nymphs with same data as above ; 18 females, 11 males, and 6 larvae and nymphs with same data as above except date which is 21 July 1962. Eggs, larvae, nymphs, and adults were found in hairs behind and around the left wing base. Paratypes are deposited in Academy of Sciences, Leningrad, U.S.S.R. ; British Museum (Nat. Hist.), London ; Canadian National Collection, Ottawa ; Entomology Museum, Michigan State University, East Lansing ; Institute of Acarology, Columbus ; Rijksmuseum van Natuurlijke Historie, Leiden, Holland ; South Australian Museum, Adelaide ; and Zoological Survey of India, Calcutta.

Otopheidomenis donahuei n. sp.

(Figs. 11-17).

Diagnosis : Female without any genital setae, peritremes approaching to the middle level of coxae III, sternal shield about 1.1 times as long as wide. Male with three pairs of sternal setae on the shield, and two very heavy, spatulate, ventral setae on femur II.

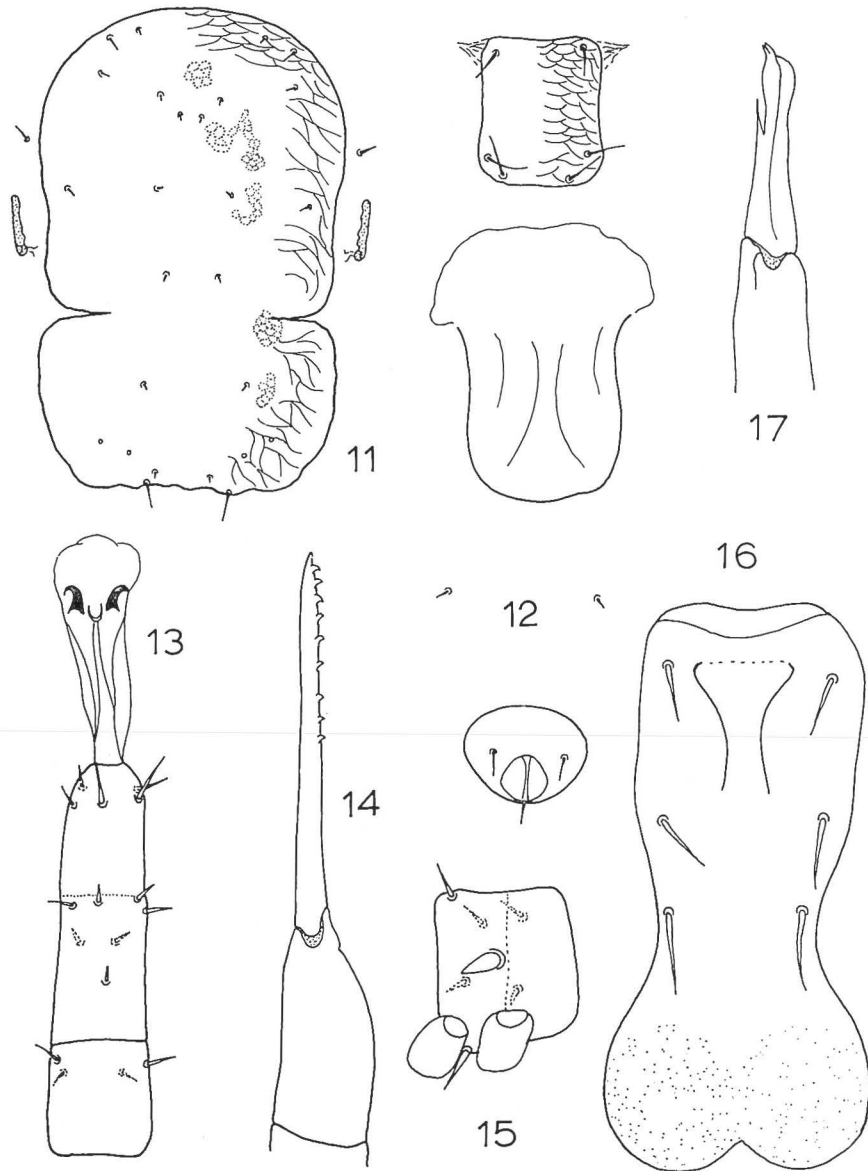
Female : Idiosoma 660-730 μ long and 440-455 μ wide (4 specimens, measured at the widest point). Dorsal shield incised mediolaterally (Fig. 11), truncate posteriorly, 371-388 μ long and 249-286 μ wide, lightly reticulated over most of the surface but reticulation very distinct laterally. Dorsal chaetotaxy is like that of *O. cocytes* but the setae in general are slightly shorter than the dorsal setae of *O. cocytes* ; dorsocentral setae measure 4-6 μ long, lateral setae 6-9 μ long, Z_5 22-24 μ long, and r_5 11-17 μ long.

Tritosternal laciniae and the basal sclerite absent. Sternal shield 92-98 μ long and 84-89 μ wide, sclerotized and reticulated over entire surface, with three pairs of setae measuring 18-20 μ , 26-30 μ , and 29-33 μ long (anterior to posterior), pores not visible. Genital shield rounded posteriorly, without any genital setae (Fig. 12), membranous anterior margin reaching close to posterior level of sternal shield. Anal shield small, 92-100 μ in width. One pair of small ventral setae measuring 11-13 μ long, on integument between genital and anal shield. Metapodal plates absent. Spermatheca is like that of *O. cocytes*. Peritremes small, measure 53-70 μ long and reach to the middle level of coxae III.

Fixed digit of chelicera reduced to small protuberance ; movable digit long, with eight to

ten teeth on it (Fig. 14). Venter of gnathosoma with three pairs of hypostomal setae. Corniculi long, slender as in *O. cocytes*. Tectum round, with smooth margin. Number of setae on palp and legs as in *O. cocytes* except that tarsi II-IV are without any heavy ventral setae at the anterior tips (Fig. 13), and genua I and II are with eight and nine setae respectively.

Male : Idiosoma 455 μ long and 308 μ wide (1 specimen). Dorsal shield 369 μ long and 247 μ wide. Dorsal chaetotaxy is like that of female. Tritosternal laciniae and the basal sclerite are absent. Sternogenital shield 207 μ long and well sclerotized, with three pairs of setae measuring 19 μ , 26 μ , and 26 μ respectively; genital opening located anteriorly (Fig. 16). One



FIGS. 11-17 : *Otopheidomenis donahuei* n. sp. : 11-14 female ; 11. — dorsal shield, 12. — ventral shields, 13. — tarsus IV, 14. — chelicera ; 15-17 male ; 15. — femur II, 16. — sternogenital shield, 17. — chelicera with spermatodactyl.

pair of small setae on integument between anal and sternogenital shield. Peritremes small, measuring 50-52 μ in length, and reaching to the middle level of coxae III. Movable digit of chelicera with spermatodactyl as in Fig. 17. Corniculi as in female. Palp and leg chaetotaxy is like that of female except that most ventral setae on legs are small, thick, spine like ; and femur II has two very heavy, spatulate, ventral setae (Fig. 15). Remaining characters are like that of female.

Collection data : Holotype, female, Peru, Loreto, Pucallpa, 1 August 1962 (W. T. VAN VELZEN), from *Erinnyis obscura* (Fab.) (Lepidoptera : Sphingidae), in U. S. National Museum, Washington, D. C. Paratypes, 5 females, and 1 male with same data as above. Eggs and adults were found around the right wing base. Paratypes are deposited in British Museum (Nat. Hist.), London ; Canadian National Collection, Ottawa, and Entomology Department, Michigan state university, East Lansing.

This species is named after Dr. Julian P. DONAHUE, Entomology Department, Michigan State University, East Lansing, who helped in discovering these mites.

ABSTRACT.

Two new species, *Otopheidomenis cocytes* n. sp. and *Otopheidomenis donahuei* n. sp., are described from moth hosts, *Cocytius duponchel* (Poey) and *Erinnyis obscura* (Fab.) respectively, from Peru, South America. Immature and adult stages of *O. cocytes* were found behind and around the left wing base and that of *O. donahuei* were found around the right wing base. Genus *Otopheidomenis* is redefined to include the new species and a key to known genera of Otopheidomeninae is given.

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