

**A NEW SPECIES OF *OTOPHEIDOMENIS*
(ACARI: OTOPHEIDOMENIDAE) ECTOPARASITIC ON
ASCALAPHA ODORATA (LEPIDOPTERA: NOCTUIDAE) IN
THE HAWAIIAN ISLANDS, WITH A KEY TO
THE SPECIES IN THE GENUS¹**

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Abstract. *Otopheidomenis ascalaphae* is described as new from specimens taken from a noctuid moth, *Ascalapha odorata* (Linnaeus), collected on Oahu I, Hawaiian Islands. A key to the species of *Otopheidomenis* is given.

Treat (1955) proposed the family Otopheidomenidae and the genus *Otopheidomenis* to accommodate a single species, *O. zalelestes*, collected from a noctuid moth. Subsequently, 8 additional species of *Otopheidomenis* were described by Prasad (1968, 1970a, 1970b, 1972, 1973), only 1 of which, *O. treati* (Prasad, 1968), was reported from a noctuid. The remaining 7 species were all described from sphingid moths. With the description of the new species below, the number of species in the genus is raised to 10 and a 3rd species is described from a noctuid.

The holotype is in the collection of the B.P. Bishop Museum (BPBM) and paratypes are there and in the collections of the U.S. National Museum of Natural History/Smithsonian Institution and the Acarology Laboratory, Ohio State University, Columbus. All measurements are given in micrometres. Chaetotaxy follows Evans & Till (1965).

***Otopheidomenis ascalaphae* Syed & Goff, new species**

Fig. 1, 2

Diagnosis. Female and ♂ with dorsal shield entire, without mediolateral incisions (other species having either mediolateral incisions or 2 dorsal shields); setae i3 absent (present in *O. cocytes* Prasad, *O. donahuei* Prasad, and *O. indicus* Prasad); ♀ with 14 and ♂ with 13 pairs of setae on dorsum of idiosoma, 2 pairs inserted on integument, remaining setae on shield; tritosternum reduced, setiform (absent in all other species except *O. zalelestes* where it is reduced and oval); ♀ with 1 pair of genital setae (absent in *O. indicus*, *O. donahuei*, *O. kayosiekeri* Prasad, and *O. achlora* Prasad); sternal shield small, convex anteriorly; 3 pairs of sternal setae inserted free on integument; ♂ sternoventral shield with pointed lateral margins, bearing 4 pairs of setae; ♀ with 2 spinose setae distoventrally on tarsi II–IV; femur II of ♂ with a seta inserted on a distinct triangular posteroproximal protuberance (also seen in *O. indicus*); tarsus IV with 4 elongate macrosetae.

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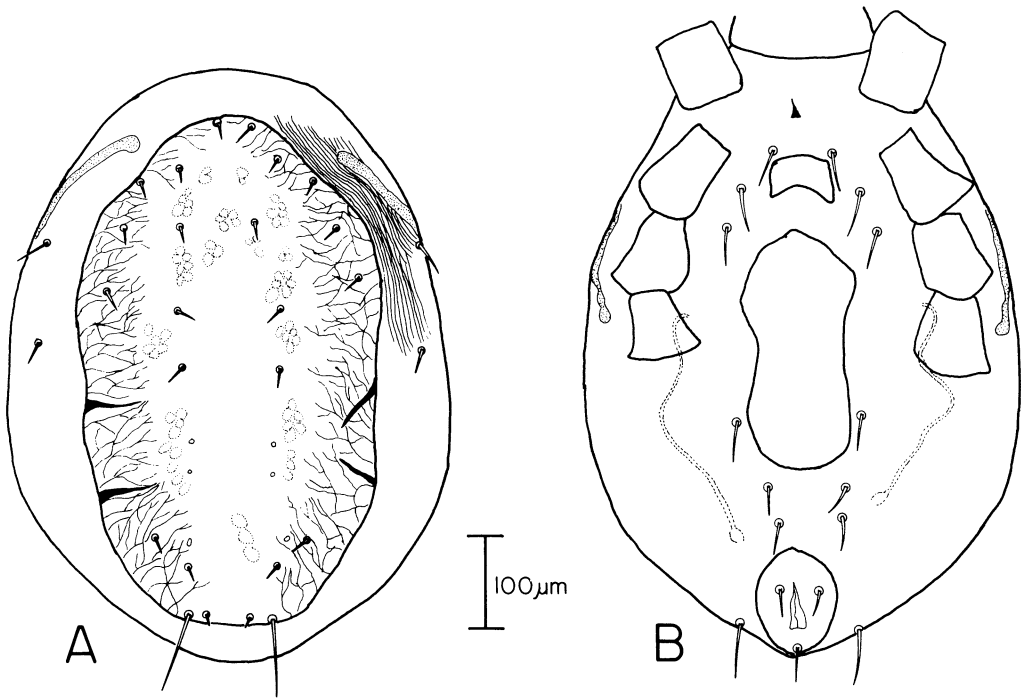


FIG. 1. *Otopheidomenis ascalaphae*, ♀: **A**, dorsal aspect of idiosoma; **B**, ventral aspect of idiosoma.

Description of species. ♀ idiosoma measuring 504–854 × 385–630. *Dorsum.* Shield entire, measuring 315–322 × 525–539, wider than long, bearing 12 pairs of setae, setae Z5 measuring 66–73, all other dorsal shield setae minute, 7–13; 2 pairs of setae inserted dorsally lateral to shield, free on cuticle, measuring 23–25; total dorsal idiosomal setae 28. *Venter.* Plates and setae as illustrated; tritosternum reduced, setiform (in 3 specimens paired setiform structures noted), measuring 14–17; sternal shield small, measuring 66–78 × 24–35; 3 pairs of sternal setae inserted free on cuticle, anterior measuring 50–58, median 48–61, posterior 48–60; epigynial shield rounded posteriorly, 1 pair of genital setae inserted free on cuticle, measuring 48–55; 2 pairs of ventral setae inserted on cuticle between epigynial shield and anal shield, anterior measuring 33–40, posterior 25–32; anal shield (86–111 × 76–93) with 1 pair of adanal setae and 1 postanal seta; 1 pair of setae on cuticle flanking anal shield. *Spermatheca.* Inconspicuous, with duct 190 long, opening between coxae III and IV. *Peritremes.* 210–280 long, reaching anterior level of coxa II; stigmata ventrolateral between coxae III and IV. *Gnathosoma.* Palps (152–158) with 4 free segments; trochanter with 1 seta; femur 4 setae; genu 5 setae; fused tibiotarsus with 16 setae, 2-tined palpal apotele and 11 terminal rodlike setae; 3 pairs of hypostomal setae; 1 pair of capitular setae; chelicerae elongate (239) with reduced fixed digit; movable digit (98–103) with 10–12 dorsal teeth on distal ½ of cheliceral blade. Tectum a smooth, anteriorly rounded projection. *Legs.* All 7-segmented, terminating in caruncles and claws. Leg I 490; II 450; III 438; IV 530. Tarsi IV with 4 elongate macrosetae (33–70). Chaetotaxy as follows: coxae 2,2,2,1; trochanters 5,4,5,5; femora 2-3/2.2/2-1, 2-3/1.2/2-1, 1-2/1.1/1-0, 0-2/1.2/1-1; genua 2-2/1.2/1-1, 2-2/1-2/1-1, 1-2/1.2/1-1, 1-2/1.2/1-1; tibiae 1-2/1.2/1-1, 1-1/1.2/1.1, 1-1/1.2/1-1, 1-1/1.2/1-1; tarsi 38, 15, 15, 15.

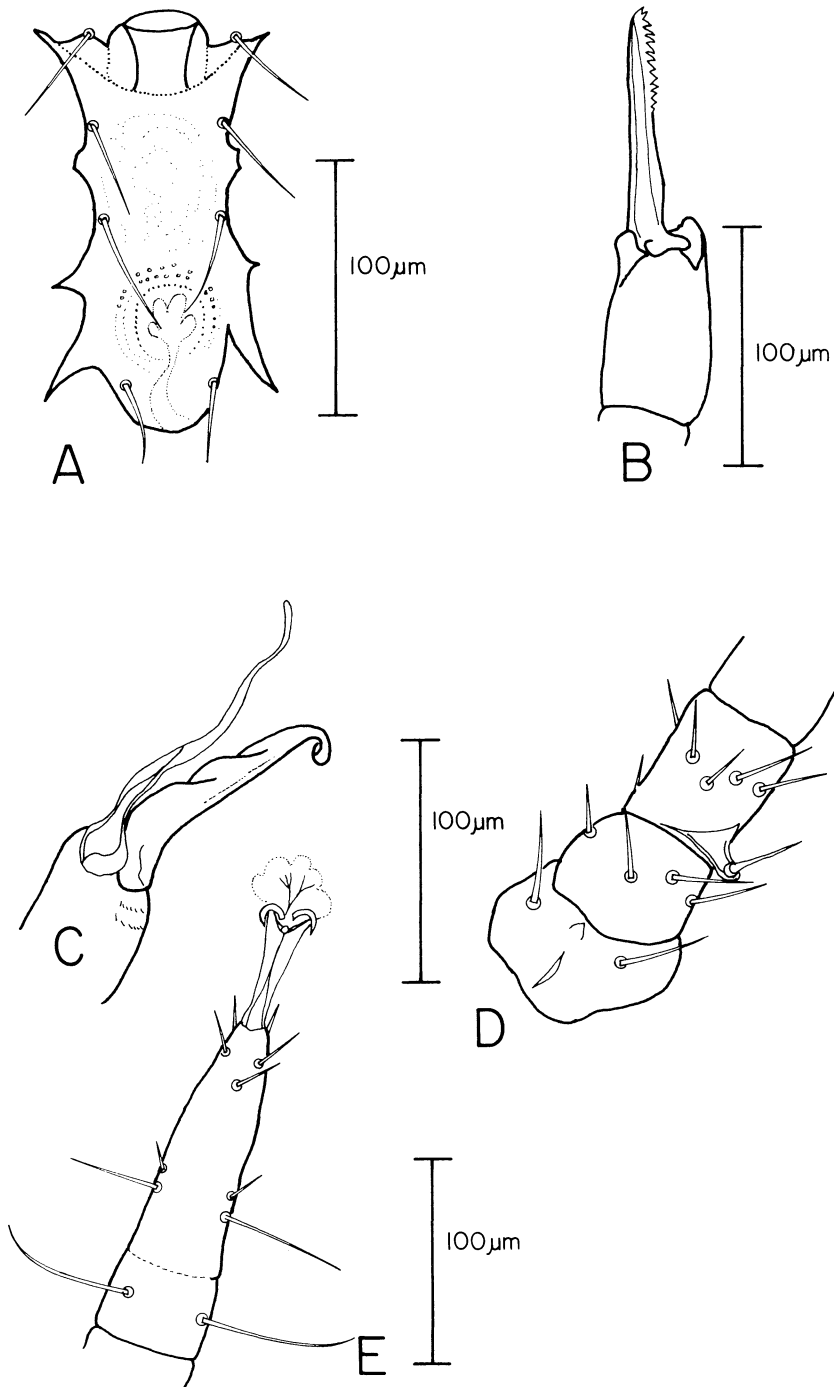


FIG. 2. *Otopheidomenis ascalaphae*: **A**, ♂ sternogenital shield; **B**, ♀ chelicera; **C**, ♂ chelicera and spermadactyl; **D**, ventral aspect of ♂ femur II; **E**, dorsal aspect of tarsus IV.

♂. Idiosoma measuring 609–665 × 392–448. Dorsal shield entire, measuring 504–539 × 329–385, bearing 13 pairs of setae, setae Z3 absent, remaining setae as for ♀. Sternogenital shield 231–238 long, bearing 4 pairs of setae, measuring (anterior to posterior, respectively) 43–50, 43–48, 45–48, 28–30; genital aperture (27–29 diam) at anterior margin of shield. Chelicerae elongate (212), movable digit edentate with thin narrow base (Fig. 2C), measuring 67–75, spermadactyl measuring 117–123. Leg chaetotaxy as given for ♀ except femora 2-3/1.2/2-2, 2-3/1.2/1-2, 1-2/1.1/0-1, 1-2/1.1/1-1; femur II with distinct triangular protuberance bearing proximal pv seta which is displaced to a p1 position; leg setae generally thicker in ♂ than ♀.

Type data. Holotype (BPBM 13,028), allotype ♂, and 7 paratypes, HAWAIIAN IS: Oahu I, Lanikai, ex black witch, *Ascalapha odorata* (L.), 12.IX.1971 (E. Davis).

Remarks. *Otopheidomenis ascalaphae* may be easily distinguished from the other species of *Otopheidomenis* infesting noctuid moths in Hawaii, *O. treati*, in having the tritosternum present (absent in *O. treati*) and having a single, entire dorsal idiosomal shield (2 dorsal idiosomal shields in *O. treati*). The 3rd species of *Otopheidomenis* infesting noctuids is *O. zalelestes* Treat, 1955. *Otopheidomenis ascalaphae* is similar to *O. zalelestes* in having 4 macrosetae on tarsi IV and a single dorsal shield, but may be separated in having the dorsal shield entire (incised laterally in *O. zalelestes*) and tritosternum spinelike (oval in *O. zalelestes*). In the original description of *O. zalelestes*, Treat (1955) indicated there was a single macroseta on tarsi IV, but subsequently corrected this to 4 macrosetae on tarsi IV (Treat 1975). The remaining 7 species of *Otopheidomenis* are reported from Sphingidae exclusively.

Specimens of *O. ascalaphae* were collected from the tympanum of the moths and infestations were unilateral in all instances recorded. The species name for *O. ascalaphae* is based on the type host, *Ascalapha odorata*.

KEY TO THE SPECIES OF *Otopheidomenis*

- 1. Females with 1 dorsal shield 2
- Females with 2 dorsal shields **treati** (Prasad, 1968)
- 2. Dorsal idiosomal shield incised mediolaterally, tritosternum absent or reduced to an oval plate 3
- Dorsal idiosomal shield entire, tritosternum a single or paired spinelike lacinae **ascalaphae**, n. sp.
- 3. Tarsus IV lacking macrosetae, parasitic on Sphingidae 4
- Tarsus IV with 4 macrosetae, parasitic on Noctuidae **zalelestes** Treat, 1955
- 4. Female with genital setae; ♂ with 4 pairs of sternal setae 5
- Female without genital setae; ♂ with 3 pairs of sternal setae 7
- 5. Seta *i*₃ absent 6
- Seta *i*₃ present **cocytus** Prasad, 1970
- 6. Sternal shield with 2 pairs of setae, 3rd pair on cuticle; ♂ with 2 dorsal shields **pholusis** Prasad, 1970
- Sternal shield with 3 pairs of setae; ♂ with single dorsal shield .. **aporodes** Prasad, 1970
- 7. Seta *i*₃ present 8
- Seta *i*₃ absent 9

8. Female with 2 heavy, spinelike setae distoventral on tarsi II–IV; ♂ with 3 pairs of setae on sternogenital shield **donahuei** Prasad, 1970
 Female lacking heavy, spinelike setae on tarsi; ♂ with 4 pairs of setae on sternogenital shield **indicus** Prasad, 1973
9. Female with all sternal setae on cuticle; femora II of ♂ with simple setae
 **kaysiekeri** Prasad, 1970
 Female with all sternal setae inserted on shield; femora II of ♂ with 2 spinelike ventral setae **achlora** Prasad, 1970

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