

TWO NEW SPECIES OF *EREYNETES*
(ACARI: PROSTIGMATA: EREYNETIDAE)
ASSOCIATED WITH BARK BEETLES

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(Accepted for publication 26 April 1988)

ABSTRACT

Ereynetes propescutulis n. sp. and *E. sinescutulis* n. sp. are described and illustrated. Both species are phoretic on bark beetles. Trapping data indicates that *E. propescutulis* is phoretic on the female bark beetle.

Key Words: Mite, *Ereynetes propescutulis*, *Ereynetes sinescutulis*, *Ips*, bark beetles.

J. Entomol. Sci. 24(1): 16-20 (January 1989)

INTRODUCTION

Hunter (1964) described *Ereynetoids scutulis* (Ereynetidae) collected from the tunnels of *Ips* bark beetles in Georgia, USA. Fain (1965), after studying the Berlese collection in Florence, Italy, synonymized the genus *Ereynetoides* Fain and Nadchatram, 1962 with the genus *Ereynetes* Berlese, 1883. Fain divided *Ereynetes* into four subgenera and placed *Ereynetoides* in the subgenus *Ereynetes*, making the correct name for *scutulis*, *Ereynetes* (*Ereynetes*) *scutulis* (Hunter). In comments on *scutulis*, Hunter (1964) stated that his material contained 11 specimens which differed from the type series of *scutulis* in having longer dorsal body setae, being smaller, and the idiosoma more pointed posteriorly. We have collected and/or received additional specimens of these mites, and consider these to represent a new species of *Ereynetes*. In addition, we have a new species of *Ereynetes* from *Ips pini* collected in Idaho. In this paper we describe the new species and provide information on host associations. In the following descriptions, chaetotaxy notations follow Fain (1970). All measurements are in microns (μ). Authorship of the new species is Hunter and Rosario.

Ereynetes (*Ereynetes*) *propescutulis* Hunter and Rosario,
new species (Fig. 1)

DIAGNOSIS: Large, single subcutaneous shield; dorsal setae *sce* and *l1* longer than distance between their bases, *l1* longer than *sce*.

FEMALE (Fig. 1 A - D) -- *Dorsum*: Idiosoma 293 long, 163 wide (average of 5 specimens). Cuticle finely striated. A single large subcutaneous shield (Fig. 1A, ss)

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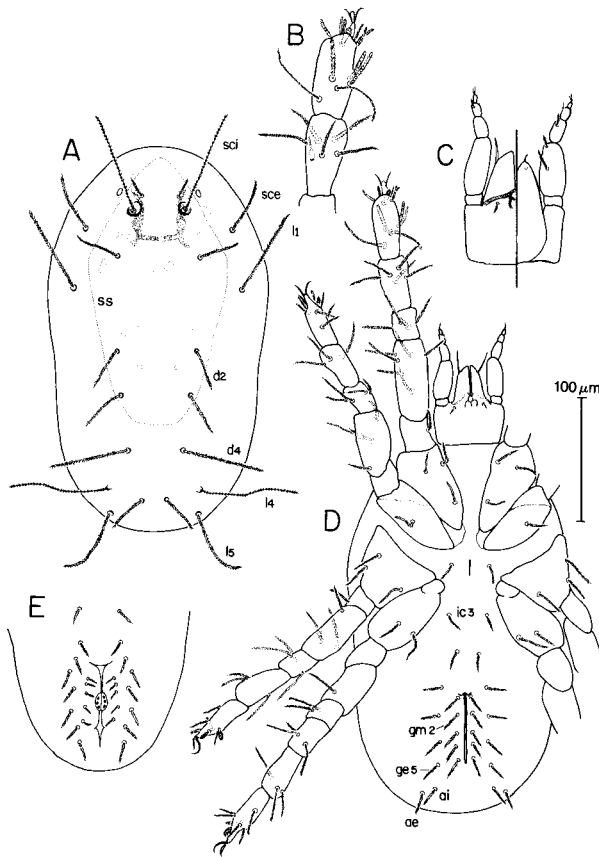


Fig. 1. *Ereyneetes propescutulalis*, n. sp. Female: A) dorsum, B) dorsal view, tarsus and tibia, leg I, C) ventral - dorsal view of gnathosoma, D) ventrum. Male: E) genital area.

198 long, 114 at greatest width, having the general shape of the idiosoma. A small lens—like eye in the integument lateral and anterior to the base of each anterior sensilla. Eleven pairs of dorsal setae. Podosoma setae are *vi*, *sci* (anterior sensilla) and *sce*. Opisthosoma setae are *d1* - *d5*, *l1*, *l4* (posterior sensilla) and *l5*. Pattern on the dorsal shield consists of a posterior bridge connecting anteriorly directed arms. *Venter*: The following ventral body setae are present: 3 pairs internal coxal setae (*ic1* - *ic3*, *ic1* arise on coxa I), 5 pairs genital external setae (*ge1* - *ge5*), 5 pairs genital medial setae (*gm1* - *gm5*, and 2 pairs of anal setae (*ae*, *ai*). Positions and relative lengths of setae as illustrated (Fig. 1A, 1D).

Legs: All tarsi bear an undivided rayed empodium, and one pair of claws, claws with cross grooves ventrally. Leg setae heavily barbed. Number of setae on

segments of legs I - IV as follows: coxa - 2, 1, 3, 2; trochanter - 1, 1, 1, 0; femur - 7, 4, 3, 4; genu - 4, 4, 3, 3; tibia - 5, 3, 3, 3; tarsus - 12, 9, 8, 7. Dorsal setae of tarsus I longer and thinner than other setae of that segment. Ereyneal organ with symmetrical bulbous portion (Fig. 1B) with tube extending anterior and curving around adjacent seta base.

Gnathosoma (Fig. 1C): Palps with 5 free segments; 1 barbed setae on dorsum of genu, 2 barbed setae on dorsum of femur; no other barbed setae on palps. Chelicerae with well developed basal segment, each with a strong, sclerotized movable digit. Hypostome with 1 pair barbed, ventral setae.

MALE -- Idiosoma 286 long, 169 wide (average of 3 specimens). General idiosomal, legs and gnathosomal characters as in female. Differs from female in genital area in having 3 pairs of small genital internal setae (*gi1* - *gi3*) arising within the genital opening (Fig. 1E).

TYPE MATERIAL -- Type series consisted of 7 females and 3 males. Holotype (female), from *Ips* (beetle) tunnel, Athens, Georgia, USA, August 15, 1961, coll. R. Davis. Paratypes: 1 female, 1 male, same data as holotype; 2 females, ex. southern pine beetle (*Dendroctonus frontalis*) gallery, Clarke Co., Georgia, December 16, 1965, coll. R. Franklin; 1 male, ex. tunnel of *Ips calligraphus*, Athens, Georgia, January 11, 1967, coll. P. Hunter.

Other specimens studied were collected as follows: 1 male, 1 female, phoretic on adult *D. frontalis*, Hardin Co., Texas, November 4, 1963, coll. J. Moser; 3 females, 6 males, ex. *Ips confusus*, Middletown, Lake Co., California, coll. E. Johnson and R. Luck; 1 female, ex. *Ips* tunnel, Winnfield, Louisiana, coll. J. Moser; 1 female, 1 male, gallery of *D. frontalis*, Elizabeth, Louisiana, coll. J. Moser.

Types deposited as follows: Holotype, 2 female and 1 male paratypes, National Museum of Natural History, Washington, D. C.; 3 female, 1 male paratypes, Acarology Collection, Department of Entomology, University of Georgia, Athens; 1 female, 1 male paratypes, Forest Insect Research Project, U. S. Forest Service, Pineville, Louisiana. Other material studied will be divided between the Department of Entomology, University of Georgia, and the Forest Insect Research Project in the collection of John Moser.

ETYMOLOGY -- The name *propescutulis* is a combination of the Latin words for near (prope) and shield (scutulis) and refers to the similarity between the new species and *E. scutulis*.

Important diagnostic characters or those characters which differ from the description of *E. propescutulis* will be described for the following species.

Ereynetes sinescutulis Hunter and Rosario,
new species (Fig. 2)

DIAGNOSIS: Without a sclerotized pattern on dorsum in area of anterior sensillae; dorsal seta *l1* longer than *sce* and longer than distance between bases of setae *l1* and *sce*.

FEMALE (Fig. 2A - F) -- *Dorsum*: Idiosoma 349 long, 221 wide (average of 7 specimens). Cuticle finely striated. Subcutaneous sclerotized shield absent or indistinct, however, cuticular striations show outline typical of shield shape. No sclerotized pattern in area of anterior sensillae. Eleven pairs of dorsal setae, relative lengths as illustrated. Chaetotaxy of ventrum (Fig. 2B), legs (Figs. 2C - F) and gnathosoma as in *E. propescutulis*.

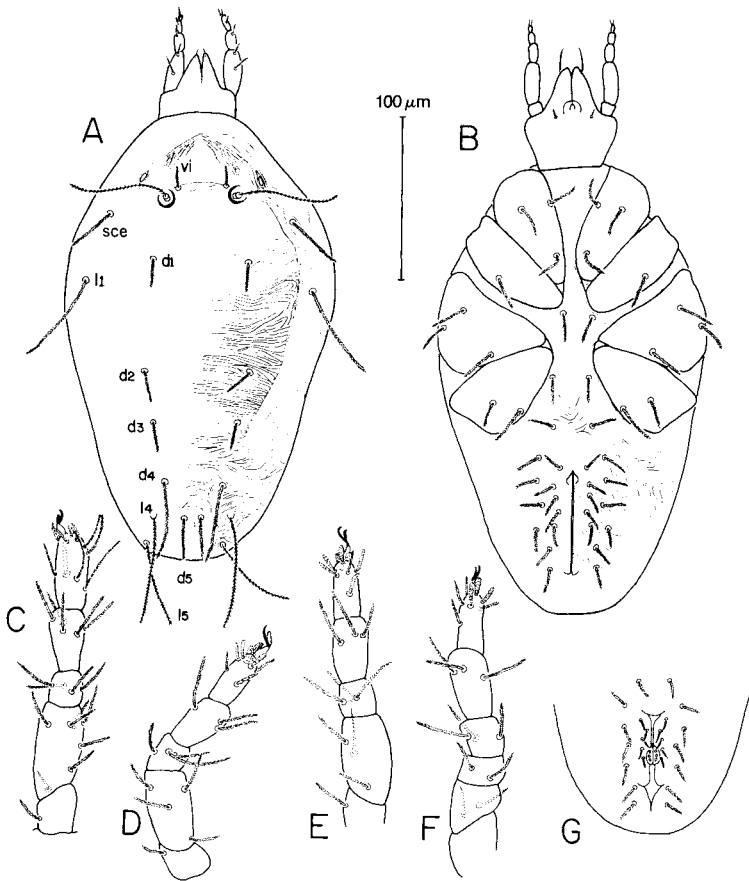


Fig. 2 *Ereynetes sinescutulis* n. sp. Female: A) dorsum, B) ventrum; dorsal view of leg I (C), leg II (D), leg III (E), and leg IV (F). Male: G) genital area.

MALE (Fig. 2G) -- Idiosoma 338 long, 207 wide (average of 3 specimens). Differs from female in genital area in having 3 pairs of small genital internal setae (*gi1* - *gi3*) arising within genital opening.

TYPE MATERIAL-- Described from 10 females and 5 males. Data for holotype female as follows: ex. adult *Ips pini* ex. *Pinus ponderosa*, 2 mi W. Worley, Idaho, VII - 10 - 72, coll. R. Schmitz. Paratypes with the same data as holotype. Other material studied included 18 females and 1 male, all with same data as holotype.

Types deposited as follows: Holotypes, 3 female and 2 male paratypes, National Museum of Natural History, Washington, D. C.; 3 females, 2 males, Acarology Collection, Department of Entomology, University of Georgia, Athens, Georgia. Remaining paratypes (3 females, 1 male), Forest Insect Research Project, Pineville, Louisiana, in the collection of J. Moser. Other material studied will be divided between the University of Georgia and the Forest Insect Research Project.

ETYMOLOGY -- The name *sinescutulis* is formed from the Latin words sine (without) and scutulis (shield) and refers to the absence of a subcutaneous shield in the new species.

COMMENTS -- Three species of *Ereynetes* (*propescutulis*, *sinescutulis*, *scutulis*) associated with bark beetles may be separated by the following key:

- 1. Dorsal subcutaneous shield (Fig. 1 ss) distinct; sclerotized pattern in area of anterior sensilla2
- Dorsal subcutaneous shield indistinct or absent; without a sclerotized pattern in the area of anterior sensilla*E. sinescutulis* n. sp.
- 2. Dorsal seta *l1* distinctly longer than *sce**E. propescutulis* n. sp.
- Dorsal setae *sce* and *l1* of equal length, both shorter than distance between their bases*E. scutulis* (Hunter)

Although *E. sinescutulis* has so far been associated with a single bark beetle species, it would seem likely that these three *Ereynetes* species are habitat specific rather than host specific. Data from beetle trappings in Louisiana, USA shows that *E. propescutulis* is found almost exclusively on female beetles, the sex which initiates the new beetle tunnel. Mite phoresy on this sex of the host would give the best assurance of movement from an old to a new beetle tunnel.

We have four specimens (three from Sweden collected with *Ips typographus*, and one from South Africa collected with *Orthotomicus erosus*) which appear conspecific with *E. propescutulis*. Because of mounting all characters are not clear on the specimens, and identification is tentative. If our identification is correct, this suggests movement of bark beetles with associate mites between Europe and North America. The South African bark beetle *O. erosus* is a common European beetle which in South Africa attack introduced, but not native pines.

LITERATURE CITED

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