

RHYTIDELASMA BICOSTATA, A NEW FEATHER MITE
(ACARINA, PTEROLICHIDAE) FROM TWO SPECIES
OF CONURES (AVES, PSITTACIDAE)¹

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ABSTRACT

Rhytidelasma bicostata, n. sp. (Pterolichoidea, Pterolichidae) is the only species of *Rhytidelasma* known from two allopatric species of conures, *Aratinga canicularis* (L.) and *A. nana* (Vigors) in Mexico and Central America. A related conure, *A. holochlora* (Sclater), is sympatric with the named host species in parts of its range; this parrot has three species of *Rhytidelasma* representing three morphotypes, one of which is the same as *R. bicostata*. The distributions of the hosts and *Rhytidelasma* are compared.

Key Words: *Rhytidelasma*, *Aratinga*, Pterolichidae, Psittacidae, ectoparasites, microdistribution

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INTRODUCTION

Few species of the feather mite genus *Rhytidelasma* Gaud (Pterolichidae) have been described from the New World parrots. From data for unnamed taxa, we know that three congeners are commonly associated with some species of *Ara* Lacépède (Macaws) and *Aratinga* Spix (Conures). However, when working with materials from avian study skins and field collections from the Orange-Fronted Conures [*Aratinga canicularis* (L.)] in northwestern Mexico and the Olive-Throated Conure [*A. nana* (Vigors)] in eastern Mexico, a single species, *Rhytidelasma bicostata* n. sp., was encountered.

Our object is to describe the new taxon and briefly mention the preferred sites. Signatures for setae follow Atyeo and Gaud (1966) and measurements are in micrometers. The holotype and paratypes will be deposited in the US National Museum of Natural History; other paratypes will be deposited in the American Museum of Natural History, Field Museum of Natural History, and in the authors' institutions. Accession numbers in the host data sections are: American Museum (AMNH), Zoological Museum, Faculty of Science of UNAM (MZFC), Universidad Nacional Autónoma de México (UNAM), University of Georgia (UGA), and field collections of the authors (TMP).

PTEROLICHOIDEA, PTEROLICHIDAE, PTEROLICHINAE

Rhytidelasma Gaud

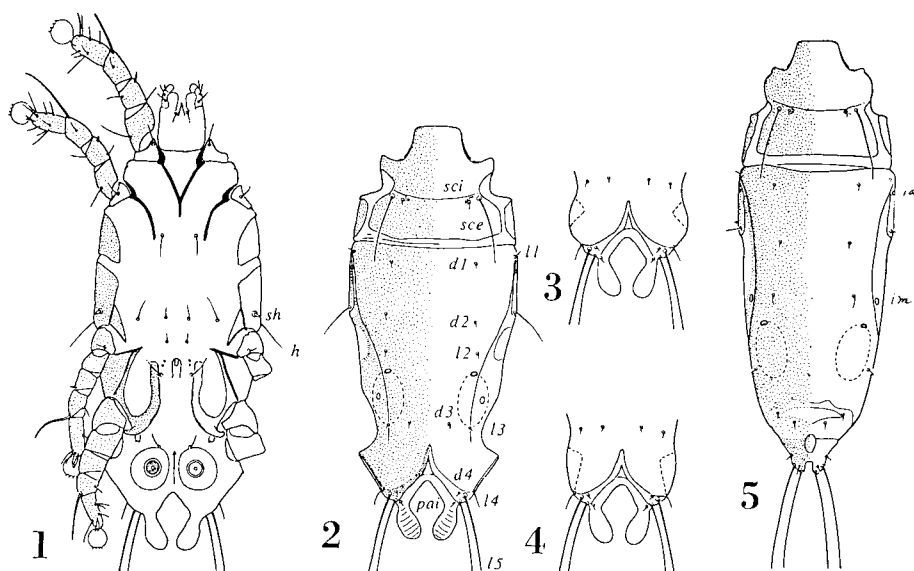
Among the Pterolichidae, *Rhytidelasma* species are distinguished in part by short, daggerlike subhumeral setae; lack of vertical setae; and in the males, weakly

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sclerotized, edentate adanal discs (Gaud 1966, 1980). There are several male morphotypes of *Rhytidelasma*, only two of which have terminal lobes widely separated at their bases and apices directed toward the meson (Atyeo et al. 1988). *Rhytidelasma forciventris* (Trouessart), from *Pionites* Heine and *Pionopsitta* Bonaparte, have the terminal lobes simple; *R. bicostata* n. sp., and related species from the Aratinginae (sensu Wolters 1975) have terminal lobes with transverse dorsal ridges or crests.



Figs. 1-5. *Rhytidelasma bicostata* n. sp. 1, 2. Male, ventral and dorsal aspects. 3, 4. Male opisthosomata with ventrolateral angles bent under idiosoma to varying degrees. 5. Female, dorsal aspect. Cupules: *ia*, *im*. Setae: *d*, 1-5, *l* 1-5, dorsal and lateral hysterosomals; *h*, humeral; *pai*, internal postanal; *sce*, *sci*, external and internal scapulars; *sh*, subhumeral. Scale 150 μ m for male, 200 μ m for female.

Rhytidelasma bicostata, new species

(Figs. 1-5)

Rhytidelasma sp. Pérez and Atyeo, 1984: 567, fig. 3 (Rc).

Male (holotype)

Length, including gnathosoma, 278; width, 108. *Dorsal Propodosoma*: Prodorsal shield with anterior margin straight; with transverse line anterior to scapular setae; dorsal and lateral shields independent; *sce* : *sce*, 53; *sci* : *sci*, 41. *Dorsal Hysterosoma*:

Shield without transverse ridges; cupules *ia* on humeral shields; setae *d* 2, *l* 2 in quadrate arrangement; opisthonotal gland openings nearer to setae *l* 2 than cupules *im*; setae *d* 3, *l* 3 at approximately same level; setae *d* 4 approximate to setae *l* 5; *d* 1 : *d* 1, 55; *d* 2 : *d* 2, 56; *d* 3 : *d* 3, 25; laterally expanded terminus angular; supranal concavity not pronounced; terminal lobes with 6-7 transverse ridges; posterior membranes lateral to setae *d* 4 thin; setae *pai* approximate to setae *d* 5. *Venter*: Epimerites I V-shaped without sclerotizations between arms, adanal discs circular. *Legs*: Apophyses on tibiae, tarsi IV; tibiae IV with setae *kT*.

Female (paratype)

Length, including gnathosoma, 386; width, 127. Proterosoma similar to male; *sce* : *sce*, 69; *sci* : *sci*, 47. Setae *l* 2, cupules *im* at almost same level, opisthonotal gland openings posterior; setae *d* 3 posterior to *d* 4, inserted on weakly sclerotized tegument; terminal cleft angular; spermpore subterminal; pretarsi IV extending to level of supranal concavity.

Type Material

From *Aratinga canicularis clarae* Moore, Mexico. Holotype male, 4 female paratypes, Puerto Vallarta, Jalisco, June 18, 1983, T. M. Pérez, W. T. Atyeo (TMP 43); 3 male, 5 female paratypes, Escuinapa, Sinaloa, December 23, 1903, and 1 male, 3 female paratypes, November 15, 1985, J. H. Batty (AMNH 91297, UGA 11192; AMNH 71562, UGA 11238). From *A. c. eburnirostrum* (Lesson): One male, 3 female paratypes, Acapulco, Guerrero, July 1, 1902, R. H. Beck (AMNH 474575, UGA 11198); 1 male, 3 female paratypes, Jolotichan, Guerrero, September 27, 1981, P. Escalante (MZFC-01162, UNAM 65); 3 male, 8 female paratypes, 8 mi NW San Pedro Tapanatepec, Guerrero, June 29, 1961, W. J. Schaldach (AMNH 776294, UGA 10420).

Additional Material

Small series (1-6 specimens) from *A. c. clarae*, Nayarit; from *A. c. eburnirostrum*, Mexico (Michoacan, Oaxaca); from *A. c. canicularis* (L.), Mexico (Chiapas), Guatemala and Costa Rica; from *A. n. nana* (Vigors), Jamaica; from *A. n. vicinalis* (Bangs and Penard), Mexico (Tamaulipas, Veracruz), from *A. n. astec* (Souanée), Mexico (Veracruz, Tabasco, Oaxaca, Yucatan), Nicaragua, and Costa Rica.

Etymology

From *Costa* (l. rib. coast) to refer to the distributions of the host species along the eastern and western coasts of Mexico and Central America.

Remarks

Two closely related species of *Rhytidelasma* occur on Mexican conures, *R. bicostata* from *Aratinga canicularis* and *A. nana*, and one of the three species being described in another publication from *A. holochlora*. The primary differences between the related species relate to size, for example, the lengths and widths of males and females from *canicularis* are respectively, 278 µm X 108 µm and 386 µm X 127 µm; from *holochlora*, 347 µm x 154 µm and 493 µm X 193 µm.

Field work with *Aratinga canicularis* was conducted in the state of Sinaloa in northwestern Mexico, primarily near Piaxtla and Elota, areas approximately 80

kilometers north of Mazatlan. At these sites, *Rhytidelasma* were not collected although collections from museum study skins provided materials for Sinaloa, Nayarit and Jalisco; our only field collections were from Jalisco. It seems reasonable to assume that the local population(s) at Piaxtla and Elota lacked this species of mite even though they were the hosts for 14 species of Pterolichidae normally associated with *canicularis* and *nana*. *Rhytidelasma bicostata* was also field collected from *A. nana astec* in the state of Tabasco in eastern Mexico.

Feather mites of *A. canicularis* and *A. nana* are conspecific, even though the parrots are allopatric. *Aratinga canicularis* is distributed in "western Central America from Sinaloa, Mexico, south to western Costa Rica"; *A. nana* occurs in "Jamaica and the Caribbean slope of tropical Central America from Tamaulipas, Mexico, south to extreme western Panama" (Forshaw 1978). The related conure, *A. holochlora*, is sympatric with the two aforementioned species in parts of its range; the feather mites of this host are congeners of those of *canicularis* and *nana*, but different species.

The primary difference between feather mite species of *A. holochlora* and the coastal parrots is that it supports three species of *Rhytidelasma* with each species representing a different morphotype (Atyeo and Pérez 1988), whereas *A. canicularis* and *A. nana* support only one species. However, this one species is a morphotype found on *A. holochlora*.

It should be noted that the posterolateral expansions of the male idiosoma may be folded under the sides, thus, there can be a number of "apparent" idiosomal configurations (see Figs. 3, 4). In females, there may also be various degrees of sclerotization surrounding the dorsoterminal setae, *d*, 3 and *d* 4. In some specimens, the lightly stippled area in Fig. 5 may be without sclerotization.

Microhabitat.

To determine site preferences, it is necessary to make observations in the field, preferably as soon as a parrot is collected. We have never found *R. bicostata* with high populations as we have with other *Rhytidelasma* species from other hosts. The mites were found on the outer third of feathers in the ventral channels formed by adjacent barbs, specifically, on the tail feathers (rectrices) and secondary flight feathers. Eggs were found in the ventral groove of some tail feathers, a site where all life stages of an undescribed *Rhytidelasma* species are found. In contrast, eggs of the *Rhytidelasma* species of *A. holochlora* are oviposited on the dorsal surfaces of flight and tail feathers (Atyeo and Pérez, 1988).

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