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AN ODD SPECIES OF FEATHER MITE
FROM FLAMINGOES (ACARINA: ALLOPTIDAE)¹

BY

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ABSTRACT

Rhynchalloptes pyrgognathus, n. g., n. sp., is described from three species of flamingoes (Ciconiiformes: Phoenicopteridae): Phoenicopterus ruber, Galápagos Islands; P. roseus, India; and Phoeniconaias minor, Kenya.

RÉSUMÉ

Description de Rhynchalloptes pyrgognathus, n. g., n. sp., parasite de trois espèces de flamants (Ciconiiformes, Phoenicopteridae): Phoenicopterus ruber des îles Galapagos, P. roseus de l'Inde et Phoeniconaias minor du Kenya.

Bizare modifications of the idiosomata, gnathosomata and/or appendages of feather mites are not common. Most taxa of the Analgoidea do not exhibit asymetry, hypertropy or atrophy (except legs), or polymorphism. When these phenomena are encountered, the mites in question are usually associated with a small and often ancient bird lineage, e.g., Sulanyssus from Sulidae, Dinalloptes from Phalacrocoracidae, and Freyanella from Threskrionithidae. Modifications of the gnathosomata are primarily the obvious polymorphism of the male chelicerae as demonstrated in Bdellorhynchus (Trouessart, 1885) and Falculifer Railliet 1896. In these groups, the basis capituli and palpi are not disproportionally hypertrophied as are the chelate chelicerae of the heteromorphic males.

The males of Rhynchalloptes pyrgognathus, n. g., n. sp., have a unique gnathosoma. The basis capituli and palpal coxae of the male are greatly lengthened and have expanded dorsally to form a partial cheliceral tube. Ventrally and laterally the gnathosoma is heavily sclerotized; the posterodorsal surfaces are conjunctiva and enclose the cheliceral bases. The floor of the tube has a cheliceral guide separating the chelicerae. The apex of the guide is enlarged, evidently to force the chelicerae in a particular direction when they are exserted. The base of the guide is also enlarged and heavily sclerotized, and from its shape and position, would function as a cheliceral arrest.

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In life, the long, parallel-sided cheliceral blades curve toward the dorsum (figs. 1-3), and one can only speculate as to their function. The articulation between the enlarged movable digit and cheliceral base appears to be functional, but the relatively small base precludes strong levator muscles. To augment the blade movement, it appears that the apex of the hypostome is structured to force the blade upward as they are exserted, that is, the apex functions as a levator.

The male gnathosoma, in addition to the aforementioned modifications, have "serrate" palpi which lack the ventral and supracoxal setae. Function cannot be attributed to any of these modifications. Our information is limited to the host associations and to the fact that from each collection the specimens are limited and are predominantly males.

*R. pyrgognathus* is known from three of the six species of flamingoes. It has been field collected from *Phoenicopterus roseus* in southern India and has been taken from museum skins from *P. ruber*, Galápagos Islands (where the bird no longer exists) and *Phoeniconaias minor*, Kenya.

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Figs. 1-4. — *Rhynchalloptes pyrgognathus* n. g., n. sp., male: scanning electron micrographs of propodosoma and gnathosoma at varying magnifications to emphasize gnathosomal modifications. *CT*, cheliceral tube; *FD*, fixed digit; *MD*, movable digit; *P*, palpus.
Rhynchalloptes, new genus

The new taxon is tentatively assigned to the subfamily Oxalgininae (family Alloptidae) on the bases of the partially fused femorogenual articulations, the weakly cleft idiosomal terminus, the incorporation of the male genital discs into a medial sclerotization anterior to the genital organ, and the elongated Y-shaped epimerites I and relatively short legs in both sexes.

**Diagnosis**: Cylindrical alloptine mites with epimerites I fused into a long Y; legs I thicker than legs II-IV; legs I-II widely separated from legs III-IV; ambulacra with apical point; sub-humeral setae setiform, inserted posterovertral to humeral setae. *Male* with elongated, triangular and heavily sclerotized gnathosoma; chelicerae with small fixed digit, movable digit long, sickleshaped; palpi extended laterally to form serrations. Dorsal idiosoma without striated conjunctiva, bearing regular complement of setae (except d I), including one internal vertical; setae d 5 minute, l 5 long; pregenital apodeme an inverted Y. Legs with femorogenual articulations partially fused; solenidia on legs I exceptionally long. *Female*. Idiosoma parallel-sided; legs III at 1/2, legs IV at 2/3 idiosomal length; apices of legs IV do not extend to terminus; legs III widely separated from legs IV. Gnathosoma not modified; chelicerae apparently chelate. Setae d 5, l 5, long, subequal.

*Type species*: *Rhynchalloptes pyrgognathus*, n. sp.

*Derivation*: *Rhynchos*, nose + Alloptes; masculine.

**Rhynchalloptes pyrgognathus**, new species

The uniqueness of the gnathosomal modifications of the male and the limited number of probable host species suggests that the genus will remain monobasic. The chaetotaxal signatures follow Atyeo and Gaud (1966).

*Male* (holotype). Length, including gnathosoma, 420 µ, width, 127 µ. Gnathosoma 78 µ in length, approximately 1/5th of total length; coxal bases extending dorsad and forming partial cylinder around cheliceral bases; chelicerae long with huge sickle-shaped movable digit (fig. 8). Propodosoma extended anteriorly between legs I; propodosomal shield fused to scapular shields; setae sce widely separated and inserted posterior to legs II, setae sci inserted posterior to the level of sce and nearer to the meson than to sce homolog. Sejugal suture at midlength. Hysterosoma sclerotized dorsally and laterally; hysterosomal shield fused with humeral shields, with *p*-shaped area of coarse granular pattern immediately posterior to sejugal suture and lateral to dorsal rows of hysterosomal setae (under phase microscopy). Hysterosomal venter with epimerites of legs III-IV joined across venter by weak sclerotization anterior to level of setae *c* 3; paragenital apodeme inverted Y with genital discs incorporated immediately anterior to genital organ, with one pair of setae (*c* 2) within the arms of the Y, with one pair lateral to arms; anal setae minute, on adanal sclerites; adanal discs small with numerous minute rays (striations) across disc corolla. Legs I larger than legs II-IV; tarsi I-II with dorsal claw. *Leg chaetotaxy*: tarsus I with 4 ventral setae (*la, ra, wa, s*), minute *d* at base of *o* 3, *e, f*, apparently lacking *ba*; tarsus II apparently lacking seta *d*; tarsus III with *r* ventral and *s* apicodorsal setae; tarsus IV with seta *f* normal, setae *d, e,*
Figs. 5-6. — *Rhynchallopes pyrgognathus*, n. g., n. sp., male: ventral (5) and dorsal (6) aspects.
Rhynchalloptes pyrgognathus, n. g., n. sp., : dorsal aspect of male gnathosoma (7), lateral aspect of male chelicera (8), and dorsal aspect of female idiosoma (9). CA, internal cheliceral arrest; CT, cheliceral tube; FD, fixed digit; MD, movable digit; P, palpus; ss, subcapitular seta; vi, internal vertical seta.
modified as small pegs, and 2 ventral setae. Solenidiotaxy: normal for alloptine mites, but solenidia of legs I extremely long.

**Female** (paratype). Length, including gnathosoma 186 μ, width 139 μ. Gnathosoma elongated, without special modifications. Propodosoma as in male. Hysterosoma shield parallel-sided, fused with pygidial shield at level of setae d 4, not fused with humeral shields; ventrally and laterally, striated conjunctiva; terminus rounded with long, subequal setae d 5, l 5; legs III-IV widely separated from each other and from legs I-II; legs IV do not extend to terminus. Legs essentially as in male but solenidia of legs I not excessively long.

**Type data.** From *Phoenicopterus ruber* L., 1758 (Phoenicopteridae): 1 holotype, 5 ♂♂, 1 ♀ paratypes, Albermarle Island, Galápagos Islands, November 15, 1897 (UGA 5388, AMNH Bird 469853). The holotype is deposited in the American Museum of Natural History; paratypes are deposited in the University of Georgia and the collection of J. Gaud.

**Additional material.** From *Phoenicopterus roseus* Pallas, 1811: 5 ♂♂, 1 ♀, Point Calimere, SE Madras, India, April 19, 1970, collected by the U.S. Migratory Animal Pathological Survey (UGA 6747); from *Phoeniconaias minor* (Geoffroy, 1798): 5 ♂♂, 1 ♀, Lake Elmenteita, Rift Valley Prov., Kenya, July 12, 1926, Chapin, Sage, Matthews collectors (UGA 5385, AMNH 262149; UGA 5386, AMNH 262148).

**LITERATURE CITED**


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