Acarologia

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Subscriptions: Year 2018 (Volume 58): 380 €
http://www1.montpellier.inra.fr/CBGP/acarologia/subscribe.php
Previous volumes (2010-2016): 250 € / year (4 issues)
Acarologia, CBGP, CS 30016, 34988 MONTFERRIER-sur-LEZ Cedex, France

The digitalization of Acarologia papers prior to 2000 was supported by Agropolis Fondation under
the reference ID 1500-024 through the « Investissements d’avenir » programme
(Labex Agro: ANR-10-LABX-0001-01)

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THE FEATHER MITE GENUS *DINALLOPTES* (ACARINA, PROCTOPHYLLODIDAE) \(^1,2\)

BY

Warren T. Atyeo and Paul C. Peterson \(^3\).

**ABSTRACT.**

*Dinalloptes anisopus* Gaud and Mouchet, 1957 from *Phalacrocorax africanus* is redescribed; *D. chelionatus*, a new species with polymorphic males, is described from *P. auritus* from Florida.

Asymmetry has been described in numerous genera of the Analgoidea. In the family Proctophyllodidae, males of two genera of the subfamily Alloptinae have asymmetrical development. The species of *Hyperpedalloptes* Dubinin, 1955 have legs I highly modified and unequal in size and males of *Dinalloptes* Gaud and Mouchet, 1957 have legs II and IV asymmetrical; additional distortions can be observed in the supporting structures of the legs, the various idiosomal shields, and the size and placement of specific setae.

The genus *Dinalloptes* was erected in 1957 by Gaud and Mouchet for a bizarre species of alloptine mite characterized by the asymmetrical conformation of the males. In this species, *Dinalloptes anisopus*, leg II on one side of the idiosoma and leg IV on the opposite side are hypertrophied and the tarsus of the hypertrophied leg II is bifid and setae are reoriented. The two males examined by Gaud and Mouchet had legs II enlarged on the left side, but it is demonstrable that leg II of either side can be enlarged.

The rarity of asymmetry in the Protophyllodidae has been mentioned. Polymorphism in this family has been restricted to the females — the shortening of the terminal appendages and lobes with the lengthening of setae \(d_5\) and \(l_5\) (Atyeo and Braasch, 1966). In the new species of *Dinalloptes* described herein, the males are polymorphic. The heteromorphic form has leg II enlarged and tarsus II.

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1. Published with the approval of the Director as Paper No. 1803, Journal Series, Nebraska Agricultural Experiment Station, and Contribution No. 264 of the Department of Entomology, University of Nebraska, Lincoln, Nebraska.
2. Supported in part by the National Science Foundation (G-14918 and GB-1620).
3. Department of Entomology, University of Nebraska.

bifid; the homomorphic form has legs II equal and tarsi simple. In both the homomorphic and heteromorphic males, the hysterosomae are equivalent (i.e., asymmetrical with one leg IV hypertrophied).

Comparison of the two *Dinalloptes* species with numerous species of alloptine genera has lead to the conclusion that the males of *Dinalloptes* are modified on only one side. The side with a normal leg II and an enlarged leg IV is indistinguishable from *Alloptes* males and additionally, structures common to males and females are unchanged. The side with the enlarged leg II and the small leg IV has numerous modified structures, e.g., setae mG, h and sh. Thus, the genus *Dinalloptes* is differentiated in part by having a hypertrophied leg II and an atrophied leg IV on one side of the idiosoma.

*Dinalloptes* Gaud and Mouchet.


Alloptine mites occurring on the avian family Phalacrocoracidae. Males asymmetrical; heteromorphic form with leg II on one side of idiosoma hypertrophied and with nonarticulated, bifid tarsus bearing reoriented setae, leg IV of opposite side hypertrophied; homomorphic form with legs II equal and one leg IV hypertrophied; both forms with idiosomal shields and hysterosomal setae asymmetrical in size and/or position, especially setae h and sh. Male and female chaetotaxy: idiosoma with single vi, two ve, without d4, l1; legs I-II with s; legs I without ra. Females similar to those in the genera *Alloptes* and *Brephosceles.*

*Dinalloptes anisopus* Gaud and Mouchet.


The uniqueness of this species is apparent from the figures of the male. In addition to the obvious asymmetrical features, the setae on the hypertrophied leg II are arranged differently than in other alloptine species. Tibia II has seta gT dorsal and solenidion q postaxial; tarsus II has solenidion w at the base of a bifurcation rather than dorsal and the triad of setae, la, ra, and wa are distant and unequal in size rather than approximate and subequal in size.

**MALE** (paratype). Length, including gnathosoma, 530 μ. All shields asymmetrical; dorsal and scapular shields with asymmetrical reticulations. Tarsus II modified as in figure 3; lengths of enlarged versus normal segments of legs II: femora, 39 μ : 28 μ; tibiae, 16 μ : 9 μ; tarsi, 60 μ : 16 μ. Atrophied leg IV sur-
Figs. 1-5. — *Dinalloptes anisopus* Gaud and Mouchet, dorsal aspect of male (1), enlarged leg II (3); *Dinalloptes chelionatus*, new species, dorsal and ventral aspects of heteromorphic male (2, 5), enlarged leg II (4).
passing terminus by length of tarsus plus $1/6$ tibia; hypertrophied leg IV surpassing terminus by length of tarsus, tibia and $1/2$ femur.

**Female** (paratype). Length, including gnathosoma, 485 μ. Dorsal and scapular shields with symmetrical reticular pattern. Suture anterodorsal to terminal cleft distinct.

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**Type material.** Holotype ♂, allotype ♀, 1 ♂, 4 ♀♀ paratypes from *Phalacrocorax africanus* Gmelin, French Cameroons, August, 1956. All types are in the collection of J. Gaud, Rennes, France.

*Dinalloptes chelionatus*, new species.

Legs II of the males, when modified, are differently proportioned than the same structures of *Dinalloptes anisopus*. These modifications plus the differences in the relative lengths of legs IV serve to differentiate the two species of *Dinalloptes*. 

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**Figs. 6-8.** -- *Dinalloptes chelionatus*, new species, dorsal aspect of homomorphic male (6), dorsal and ventral aspects of female (7, 8).
MALE (holotype). Length, including gnathosoma, 460 μ. All shields asymmetrical; dorsal hysterosomal and scapular shields with faint reticular pattern, other shields unadorned. Tarsus II modified as in figure 4; lengths of enlarged versus normal segments of legs II: femora, 51 μ: 38 μ; tibiae, 35 μ: 30 μ; tarsi, 35 μ: 28 μ. Atrophied leg IV surpassing terminus by 1/2 length of tarsus IV; hypertrophied leg IV surpassing terminus by length of tarsus plus 2/3 tibia.

FEMALE (allotype). Length, including gnathosoma, 523 μ. Dorsal and scapular shields with faint symmetrical reticular pattern. Suture anterodorsal to terminal cleft indistinct.

Type material. Holotype ♂, allotype ♀, 7 ♂♂, 11 ♀♀ paratypes from Phalacrocorax auritus (Lesson), Cape Haze, Charlotte County, Florida, July 21, 1960, W. T. Atyeo, N. L. Braasch, K. R. Orwig. The holotype, allotype and 14 paratypes are deposited in the University of Nebraska State Museum; paratypes are deposited in the U. S. National Museum and the collection of J. Gaud. The smallness of the modified tarsus II of the male is the basis for the name chelionatus.

Remarks. One of the eight males in the type series has legs II unmodified. Except for slight irregularities of the propodosomal shield and the presence of setae vi and ve, the proterosoma of this specimen is indistinguishable from males of the genus Alloptes.

LITERATURE CITED
