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Taxonomic notes on the feather mite subfamily *Avenzoariinae* with
establishing two new genera
(*Acarina: Analgoidea: Avenzoariidae*)

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ABSTRACT. Based on cladistic analysis two new genera of avenzoariine feather mites
are established: *Rostratobia* gen. n. and *Rafalskiata* gen. n. *Avenzoaria bartramica*
MIRONOV & DABERT, 1995 is transferred to the genus *Pomeranzevia*.

Key words: acarology, *Analgoidea*, *Avenzoariinae*, taxonomy, new genera.

INTRODUCTION

The *Avenzoariinae* OUDEMANS, 1905 are a highly specialized subfamily of feather
mites restricted in their host association to the shore birds (*Charadriiformes*) only
(GAUD 1972a, MIRONOV & VASYUKOVA 1991). Ten genera with about 65 species
(including 11 new *Bychovskiata* in press) have been recognized up to date.

Taxonomic and phylogenetic studies on the feather mite subfamily *Avenzoariinae*
carried out during the last four years resulted in description of several new taxa of
generic and species rank (MIRONOV & DABERT 1992, 1995). Taxonomic reviews of the
genera *Bregetovia* (MIRONOV et al. 1993) and *Bychovskiata* (MIRONOV & DABERT
1997b) were given.

This paper is a continuation of the taxonomic studies on the subfamily and
includes the descriptions of two new genera: *Rostratobia* gen. n. and *Rafalskiata* gen.
n. Besides, one species formerly described within the genus *Avenzoaria* OUDEMANS,
1905 is transferred to the genus *Pomeranzevia* DUBININ, 1951. The taxonomic conclu-
sions and establishment of the new genera are based on a former cladistic analysis

(MIRONOV & DABERT 1997a). The chaetotaxy nomenclature used in the paper follows GRIFFITHS et al., 1990.

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Rostratobia gen. n.

GAUD 1972a: 34-37, Figs 14, 16b (*Avenzoaria setifera*); MIRONOV & DABERT 1995: 202 - 203, Figs 1-3 (*Avenzoaria trifolia*).

Type species: *Avenzoaria setifera* GAUD, 1972 from the Painted Snipe *Rostratula bengalensis* (*Rostratulidae*), by original designation.

ETYMOLOGY

Rostrat - root part of the host family name, *bios* - Gr. life.

DIAGNOSIS

Both sexes. Epimeres I free. Bases of epimeres I and II connected by sclerotized bulk. Prodorsal shield with short widely rounded posterior angles. Cupules *ia* situated slightly laterally to setae *c2*. Hysteronotal shield slightly enlarged in anterior part, anterior angles widely rounded, with a pair of small lateral extensions.

Male. Hysteronotal shield entire, with anterior margin almost straight. Posterior tips of epimeres I free from epimeres II. Opisthosoma bilobate, opisthosomal lobes almost straight, slightly enlarged to apex, terminal cleft wide, transversely oval. Interlobar membrane narrow along all cleft margin. Terminal membrane with 3 rounded teeth. Setae *ps1* lanceolate, setae *f2* short setiform, setae *e2* long setiform. Adanal apodemes and adanal membranes absent. Genital arch as an inverted "Y", aedeagus short stiletto-like. Paragenital apodemes and epiandrum absent. Adanal shields absent, setae *ps3* on striated tegument. Anal discs with multidentate corolla. Setae *3a* and *3b* situated at the same level. Coxal setae *4a* at midlength level of genital arch. Epimeres IVa almost absent. Legs III slightly bigger than legs IV.

Female. Hysteronotal shield with anterior margin straight or slightly convex. Setae *e2* and *ps3* long setiform, both extending behind posterior margin of opisthosoma.

DIFFERENTIAL DIAGNOSIS

This genus is superficially similar to the genus *Avenzoaria* OUDEMANS, 1905. However, it is well distinguished from all the genera of the *Avenzoaria*-like group (*Avenzoaria*, *Attagivora*, *Bregetovia*, *Capelloptes*, *Pomeranzevia*, *Pseudavenzoaria*, and *Rafalskiata* gen. n. - see below) by several unique characters. Both sexes of *Rostratobia* have cupules *ia* positioned laterally to setae *c2*, females with setae *e2*, *ps2* and *ps3* long setiform. Males have setae *e2* setiform and terminal membrane with rounded teeth only. In the other named genera cupules *ia* are situated far medially to setae *c2*, in females setae *e2*, *ps2*, *ps3* short setiform, not longer than anal slit. In the

7 genera listed above males have different structure of terminal membrane indentation, with two or more acute teeth or without indentation at all; and in 5 genera (except *Attagivora* and *Capelloptes*) males have setae *f2* lanceolate or spine-like. The genus *Rostratobia* is apparently the most deviating genus within the group of *Avenzoaria*-like genera.

INCLUDED SPECIES

Rostratobia setifera (GAUD, 1972) **comb. n.** - from *Rostratula bengalensis*; *R. trifolia* (MIRONOV & DABERT, 1995) **comb. n.** - from *Rostratula semicollaris*. Both hosts belong to the family *Rostratulidae*.

***Rafalskiata* gen. n.**

GAUD 1972b: 243-246, Figs 1-4 (*Avenzoaria rackae*); MIRONOV 1981: 67 - 69, Figs 1-4 (*Avenzoaria rackae*).

Type species: *Avenzoaria rackae* GAUD, 1972b from Jacksnipe *Lymnocyrtes minimus* (*Scolopacidae*), by original designation.

ETYMOLOGY

The genus is dedicated to Prof. Jan RAFALSKI, a great Polish zoologist.

DIAGNOSIS

Both sexes. Epimeres I free. Bases of epimeres I and II are not connected with sclerotized bulk. Cupules *ia* situated medially to setae *c2*. Hysteronotal shield with rounded anterior angles, not enlarged in anterior part.

Male. Prodorsal shield with short rectangular or slightly rounded lateral angles. Hysteronotal shield entire, with anterior margin slightly concave. Posterior tips of epimeres I free from epimeres II. Opisthosoma bilobate, opisthosomal lobes almost straight, slightly curved medially, terminal cleft longitudinally oval. Interlobar membrane wide along all margin of terminal cleft, enlarged posterad. Terminal membrane well separated from interlobar one, with 4 acute teeth. Setae *ps1* lanceolate, setae *f2* lanceolate, setae *e2* short setiform. Adanal apodemes and adanal membranes absent. Genital arch as an inverted "Y", aedeagus short stiletto-like. Paragenital apodemes and epandrium absent. Adanal shields absent, setae *ps3* on striated tegument. Cupules *ih* well developed. Adanal discs with multidentate corolla. Setae *3a* situated posterior to setae *3b*. Coxal setae *4a* at basis level of genital arch. Epimeres IVa short. Legs IV slightly thicker than legs III.

Female. Prodorsal shield with short acute lateral angles. Hysteronotal shield with anterior margin slightly concave. Setae *e2* and *ps3* short setiform, shorter than anal slit.

DIFFERENTIAL DIAGNOSIS

This genus has a mixture of some characters of the genera *Avenzoaria* OUDEMANS, 1905 and *Pomeranzevia* DUBININ, 1951. In its general appearance it resembles the genus *Avenzoaria*. However, it differs in the structure of anterior part of hysteronotal shield, in the absence of sclerotized bulk between epimeres I and II bases in both sexes and in the 4 acute teeth in terminal membrane. Both sexes of the genus *Avenzoaria* have clear trapezoidal anterior part of hysteronotal shield and strong sclerotized bulk connecting the bases of epimeres I and II; in males the terminal membrane has heterogeneous indentation, always one rounded and two (or in certain species 4-5) acute teeth. The structure of opisthosomal lobes in *Rafalskiata* males is similar to that of the genus *Pomeranzevia*. Males of the genus *Rafalskiata* differ from those of *Pomeranzevia* in tips of epimeres I free from epimeres II, setiform setae *e2*, absence of paragenital apodemes and in short epimeres IVa. In typical species of *Pomeranzevia* males have epimere tips fused to epimeres II, setae *e2* as thick macrochaetae, paragenital apodemes of different form and long epimeres IVa with setae *4a* in their anterior tips. It is probable that the genus *Rafalskiata* is most closely related to the common ancestor of the more derived genera *Avenzoaria* and *Pomeranzevia*.

INCLUDED SPECIES

Rafalskiata rackae (GAUD, 1972) **comb. n.** from the Jacksnipe *Lymnocyptes minimus* (*Scolopacidae*).

***Pomeranzevia* DUBININ, 1951**

This genus formerly included 4 species (Gaud 1972a, VASYUKOVA & MIRONOV 1991) associated exclusively with the curlews *Numenius* (*Scolopacidae: Numenini*). Recent taxonomic and cladistic studies have revealed that one more species, formerly regarded as a member of the genus *Avenzoaria*, should be transferred to the genus *Pomeranzevia*.

***Pomeranzevia bartramica* (MIRONOV & DABERT, 1995) comb. n.**

MIRONOV & DABERT 1995: 204 - 205, Figs 4-5 (*Avenzoaria bartramica*).

This species, associated exclusively with the Upland Sandpiper *Bartramia longicauda* (*Scolopacidae: Numenini*), was originally described within the genus *Avenzoaria*. In the description (MIRONOV & DABERT 1995) it was already noted that the male of this species had several characters similar to those of the genus *Pomeranzevia*. They are as follows: 4 acute teeth on terminal membrane, long and thick setae *e2*, long epimerites IV with setae *4a* in their anterior tips, well developed cupules *ih*, absence of sclerotized bulk between bases of epimeres I and II. Recent

comparative morphological analysis and cladistic analysis (MIRONOV & DABERT 1997a) have shown that this species should be included in the genus *Pomeranzevia*. According to our analysis *P. bartramica* is the most primitive species of this genus, because of the absence of paragenital apodemes and absence of epimeres I tips fusion to epimeres II, relatively short opisthosomal lobes and terminal cleft in males.

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