

Entomol. Mitt. zool. Mus. Hamburg	14 (171): 237-243	Hamburg, 15. Juni 2005 ISSN 0044-5223
-----------------------------------	-------------------	--

A new species of the genus *Avenzoaria* Oudemans, 1905 (Acari: Avenzoariidae) from the Red Knot, *Calidris canutus* (L.) (Aves, Charadriiformes)

AGNIESZKA BADEK & JACEK DABERT

(With 12 figures)

Abstract

Avenzoaria canuti sp. n., a new species of the feather mite family Avenzoariidae (Acari: Astigmata: Analgoidea) is described from the flight feathers of the Red Knot, *Calidris canutus* (L.) (Scolopacidae, Charadriiformes). Up to now the new species has been identified as *Avenzoaria calidridis* (Oudemans, 1904), a typical commensal of calidrine sandpipers. *A. canuti* sp. n. is an intermediate form sharing some characters with both *A. calidridis* and *A. totani* (Canestrini, 1878), a common feather mite of tringine sandpipers (Scolopacidae).

Key words : Acari, Avenzoariidae, *Avenzoaria canuti* sp. n., taxonomy, Aves, Scolopacidae, South Africa, Poland.

Introduction

Feather mites of the genus *Avenzoaria* Oudemans, 1905 belong to the subfamily Avenzoariinae (Avenzoariidae), being typical vane inhabitants of the contour feathers of shore birds of the suborders Charadrii and Scolopacii (Charadriiformes). The genus includes 12 named valid species and two of unclear taxonomic position - *A. grillatoris* (Oudemans, 1904), *A. limicolae* (Oudemans, 1904) (see Mironov 1999). All species of *Avenzoaria* inhabit plumage of scolopacid sandpipers (Scolopacidae) of the tribes Tringini, Calidridini, Phalaropodini, Limosini, Arenariini, and Limnodromini. According to Mironov (1999) all species of *Avenzoaria* should be grouped into five species groups: *totani*, *tringae*, *calidridis*, *arenarii*, *punctata*.

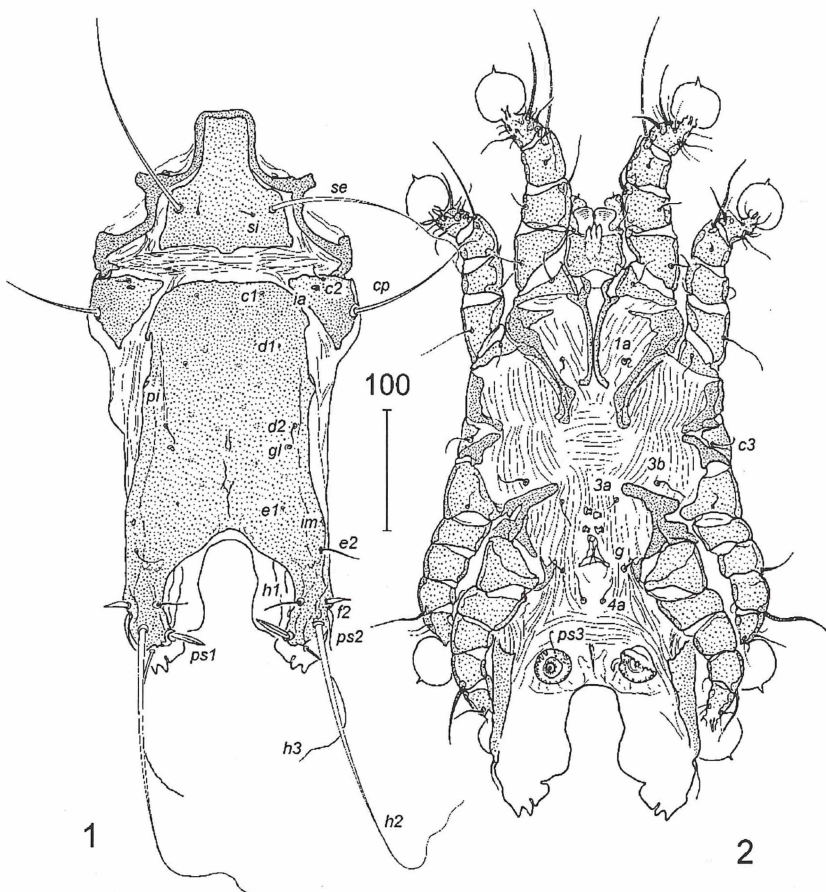
Whilst checking material of the *Avenzoaria calidridis* (Oudemans, 1904) from wide host range we found that the populations originating from *Calidris canutus* (L.) clearly differ from nominative form. Detailed morphological analysis has proved that this is a new species, which shares some characters of both *A. calidridis* and *A. totani* (Canestrini, 1878).

Material and Methods

The type material for the study was received from Dr. Allan J. Baker and originated from the Red Knot studies conducted in the Republic of South Africa in the 90ties. Additional and comparative material from *A. calidridis* and *A. totani* was collected in Poland by the present authors during trapping actions of shore birds carried out in the 80ties and recently.

Taxonomic description follows the standards applied for the avenzoariin mites by Mironov & Dabert (1995, 1997). The setal nomenclature follows that of Gaud & Atyeo (1996). All measurements are given in micrometers. Systematics and scientific names of birds follow Howard & Moore (1991).

Abbreviations for the type material repositions: AMU – Department of Animal Morphology, Adam Mickiewicz University, Poznan, Poland; ZMH – Zoological Museum Hamburg, Germany.



Figs 1-2. Male of *Avenzoaria canuti* sp. n.: 1 – dorsal view; 2 – ventral view.

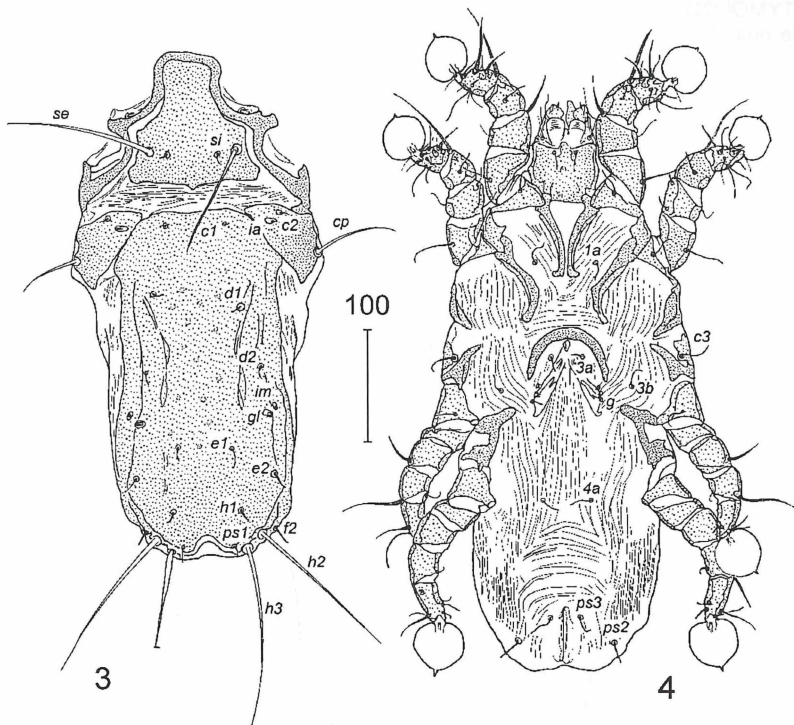
Description

Superfamily Analgoidea Trouessart & Mégnin, 1884

Family Avenzoariidae Oudemans, 1905

Genus *Avenzoaria* Oudemans, 1905

Avenzoaria canuti sp. n. (Figs 1-4)



Figs 3-4. Female of *Avenzoaria canuti* sp. n.: 3 – dorsal view; 4 – ventral view.

TYPE MATERIAL: holotype (♂), 30 November 1991, A. J. BAKER coll. (No. AMU 01349). Deposited in ZMH, Acc. No. A39/05). (The holotype is mounted on the same microslide with two paratype ♀)

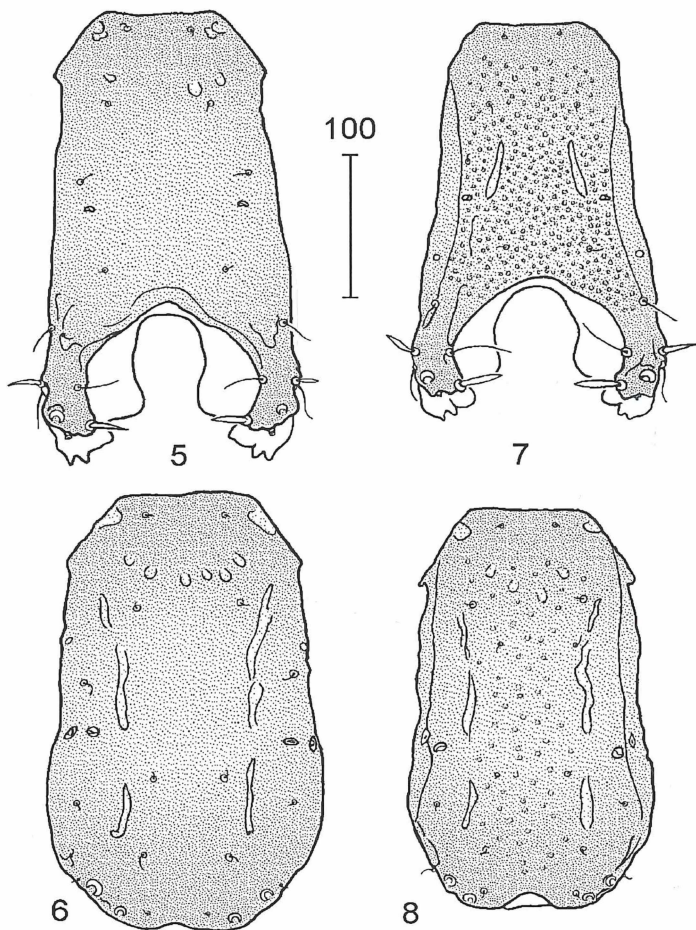
Type locality. – Republic of South Africa, Cape Prov., Velddrif, from the Red Knot, *C. canutus* (Scolopacidae)

Paratypes: 5 ♂, 40 ♀, all data as for holotype; 2 ♀, data as for holotype (AMU 01351); ♂, ♀, data as for holotype (AMU 01353); ♀, data as for holotype (AMU

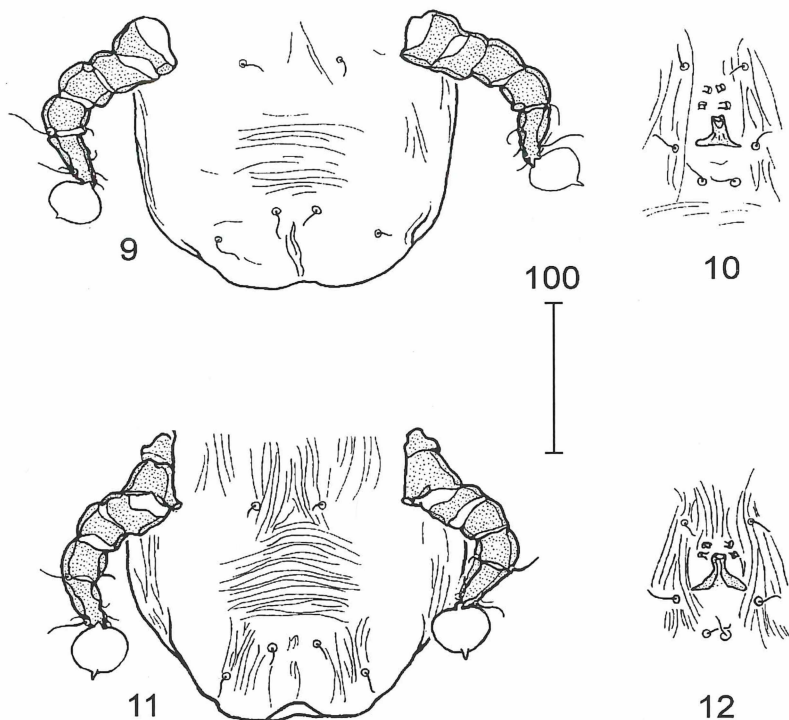
01354); ♂, data as for holotype (AMU 01355); 2 ♀, data as for holotype (AMU 01348). [Some paratypes (3 ♂, 20 ♀) deposited in ZMH (Acc. No. A40/05), the remaining paratypes in AMU].

Additional material examined (all deposited in AMU): 3 ♀, 27 August 1985, Ujście Wisły, Poland, P. Michalak coll.; the same host (AMU 00869); 3 ♂, 32 ♀, same data (AMU 00873); 2 ♂, same data, except 29 August 1985 (AMU 00834); ♀, same data (AMU 00835); 10 ♀, same data, except 30 August 1985 (AMU 00789); 2 ♀, same data (AMU 00823); ♂, ♀, same data, except 05 September 1990; collector unknown (AMU 01271).

ETYMOLOGY: The name of the new species derives from the specific epithet of the host Red Knot, *C. canutus*.



Figs 5-8. Hysteronotal region of male (5, 7) and female (6, 8). 5, 6 - *Avenzoaria totani* (Oud.), 7, 8 - *A. calidridis* (Can.).



Figs 9-12. Female ventral opisthosoma (9, 11) and male genital region (10, 12) of: 9, 10 – *Avenzoaria totani* (Oud.), 11, 12 – *A. calidridis* (Can.).

DIAGNOSIS: Males: Idiosoma is the longest among *Avenzoaria* species inhabiting scolopacid birds of the genus *Calidris*. Pronotal shield large, triangular with posterior corners extending laterally the bases of setae *se*. Hysteronotal shield with numerous rounded lacunes in medial part. Setae *h1* not reaching the medial margins of the interlobar membranes. Postlobar membranes consist of three teeth: two external are small and triangular, the inner one is either rectangular with concave terminal margin or semicircular. Both pairs of genital acetabules situated anterior to aedeagus base.

Females: Idiosoma the longest among *Avenzoaria* species from both *Calidris* and *Tringa*. Legs IV reaching or extending the body terminal margin.

DESCRIPTION: (male, holotype). Gnathosoma shaped as a transverse rectangle or square, frequently with minute, lateral ledges. Idiosoma elongated, widest at the level of humeral setae and slightly narrowed terminally. Length: holotype 554 μ m (paratypes 494-585), width: 289 (233-308). Pronotal shield large, triangular with anterior and posterior margins

straight; posterior margin with medial projection. Length: 132 (126-148), width: 148 (132-151). Posterior corners of the pronotal shield extending laterally the bases of setae *se*. Scapular setae *se* strong and long. Setae *si* very short and piliform. Humeral shields large, triangular with setae *cp* and *c3* situated on lateral margin and on ventral part of the shield respectively. Length of the hysterosoma: 390 (362-409). Hysteronotal shield uniformly dotted and covered with numerous, small, round lacunes coupled in central part of the shield. Well defined anterior margin with cut antero-lateral corners; frequently in these places small, irregular appendixes. Dorsal setae *h1* not reaching medial margins of the interlobar membranes. Length of the setae *h1*: 40 (32-48). Setae *f2* and *ps1* lanceolate and short; lengths 25 (19-33), *i* 41 (37-44) respectively. Opisthosomal lobes rectangular, slightly bent inwards; length: 125 (118-138), width 41 (35-48). Interlobar cleft shaped as a transverse ellipse. Interlobar membranes widest at the distal ends of the lobes. Cleft between membranes has rounded anterior margin and almost parallel-sided medial margins with shallow incisions in the midlength; distance between membranes: min 51 (49- 73), max 65 (56- 84). Postlobar membranes tridentate: two external teeth triangular, third internal tooth either rectangular with concave terminal margin or semicircular. Dorsal measurements: *c1-c1* 73 (57-79), *d1-d1* 103 (89-116), *d2-d2* 141 (118-151), *e1-e1* 114 (100-124), *e2-e2* 203 (184-216), *h1-h1* 156 (146-175), *f2-f2* 219 (200- 248), *ps1-ps1* 130 (127-157), *c1-d1* 73 (56-79), *d1-d2* 70 (65-83), *d2-gl* 22 (22- 35), *gl-e2* 118 (92-127), *e2-h1* 64 (54-70), *h1-ps1* 38 (35-40).

Epimerites I free, parallel-sided with distal ends curved outwards. Small epimerites IV present. Aedeagus short. Both pairs of genital acetabules set anterior to the aedeagus base. Small adanal sclerites present. Adanal discs provided with 17-21 teeth. Opisthoventral sclerites wide and narrowed terminally. Ventral measurements: *3a-3a* 60 (44-62), *g-g* (57-76), *3a-g* 73 (62-79), *4a-4a* 21 (18-25), *ps3-ps3* 73 (60-79), *c3-c3* 267 (200-286), *3b-3b* 143 (118-156), *3a-3b* 44 (40-54), *3b-g* 103 (84-110), *4a-ps3* 67 (51-70). Setae *3a* posteriorly to *3b*, setae *4a* at the same level as epimerites IV, setae *g* posteriorly to aedeagus. Distance *3a-4a* twice longer than *4a-g*.

Legs IV not reaching terminal end of the body.

Female (paratype). Gnathosoma shaped as in male, without lateral ledges. Idiosoma elongated with almost parallel sides. Length: allotype 554 (paratypes 525-601), width 283 (245-314). Pronotal and humeral shields as in male. Length of pronotal shield: 135 (126-157), width 151 (138-164). Setae of pronotum and humeral region as in males. Hysterosoma length: 396 (374-418). Hysteronotal shield sculptured and shaped in anterior part as in males. The shield is slightly narrower in central part at the level of setae *d2*. Posterior margin of the shield has stronger sclerotization. Lateral sclerites completely fused with the shield. Posterior part of the opisthosoma rounded with small, terminal cleft. Dorsal measurements: *c1-c1* 73 (60-83), *d1-d1* 105 (92-127), *d2-d2* 132 (119-152), *e1-e1* 60 (54-73), *e2-e2* 160 (152-178), *h1-h1* 64 (63-95), *h2-h2* 121 (105-137), *ps1-ps1* 60 (60-76), *c1-d1* 81 (65-98), *d1-d2* 89 (71-111), *gl-gl* 146 (137-162), *d2-gl* 60 (48-67), *gl-e2* 62 (51-73), *e2-h1* 57 (48-67), *h1-ps1* 41 (32-51).

Epimerites shaped as in males with exception of absence of epimerites IV. Oviporus is situated between coxal fields III. Both pairs of genital acetabules set anteriorly to setae *g*; first pair situated at the level of setae *3b*. Epigynium horseshoe-like, variable in size. Length: 62 (51-70), width 89 (79-111). Copulatory opening located dorso-terminally. Ventral measurements: *c3-c3* 260 (222-300), *3b-3b* 151 (133-178), *3a-3b* 67 (57-76), *3b-g* 40 (35-44), *g-4a* 118 (102-130), *4a-ps3* 132 (111-152), *3a-g* 54 (43-60), *ps3-ps2* 49 (41-54), *ps2-ps2* 108 (89-117).

Legs IV reaching the terminal end of the body or even extending (Fig. 4).

DIFFERENTIAL DIAGNOSIS: The new species shares some common features with both *A. calidridis* and *A. totani*. It resembles *A. calidridis* in presence of numerous, small and rounded lacunes on hysteronotal shield in both sexes (Figs 1, 3, 7, 8) that are absent in *A. totani* (Figs 5, 6). On the other hand it is close to *A. totani* in anterial location of both genital acetabules in respect to the aedeagus base (Figs 2, 10) and setae *h1* not reaching medial margins of interlobar membranes (Figs 1, 5). Males of *A. canuti* sp. n. are longer than those of *A. calidridis* (mean length 540 versus 480). Females also are longer than *A. totani* (560 versus 540 in *A. totani* and 515 in *A. calidridis*). Females of *A. canuti* sp. n. differ from females of both remaining species in lengths of legs IV: in the new species they reach or extend the body terminus (Fig. 4), in *A. calidridis* and *A. totani* legs IV do not reach the terminal margin of opisthosoma (Figs 9, 11).

References

- Gaud, J. & Atyeo, W. T. 1996. Feather mites of the world (Acarina, Astigmata): The supraspecific taxa. Part 1, Text. - Ann. Mus. Roy. Afr. Centr., Sc. zool., 277: 1-193. Tervuren.
- Howard, R. & Moore, A. A. 1991. A complete check-list of the birds of the world. - Academic Press, 730 pp. London.
- Mironov, S. V., 1999. Feather mites of the family Avenzoariidae and Alloptidae (systematics, phylogeny and coevolutionary relationships with birds). - Unpublished Dr. Sci. thesis, 625 pp., Zoological Institute, Russian Academy of Sciences. St. Petersburg.
- Mironov, S.V. & Dabert, J. 1995. New species of feather mites of the subfamily Avenzoariinae from waders (Aves: Charadriiformes) of the New World (Acarina: Analgoidea). - Genus, 6: 201-223. Wroclaw.
- Mironov, S.V. & Dabert, J. 1997. Taxonomic notes on the feather mite subfamily Avenzoariinae with establishing two new genera (Acarina: Analgoidea: Avenzoariidae). - Genus, 8: 75-79. Wroclaw.

Authors' address:

MSc. A. BADEK, Dr. hab. J. DABERT, Department of Animal Morphology, Institute of Environmental Biology, A. Mickiewicz University, Umultowska 89, 61-614 Poznan, Poland.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Entomologische Mitteilungen aus dem Zoologischen Museum Hamburg](#)

Jahr/Year: 2007

Band/Volume: [14](#)

Autor(en)/Author(s): Badek Agnieszka, Dabert Jacek

Artikel/Article: [new species of the genus Avenzodris Oudemans 1905 \(Acari: Avenzoariidae\) from the Red Knot Calidris canutus \(L.\) \(Aves, Charadriiformes\) 237-243](#)