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Two new feather mite species of the genus *Cernyella* GAUD, 1968 (Acari: Freyanoidea: Freyanidae)

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ABSTRACT. Two new feather mite species of the genus *Cernyella* associated with the thick-knees *Burhinidae* are described: *Cernyella howei* sp. n. from the Double-striped Thick-knee *Burhinus bistriatus pediacus* and *C. thailandica* sp. n. from the Great Thick-knee *Esacus recurvirostris*.

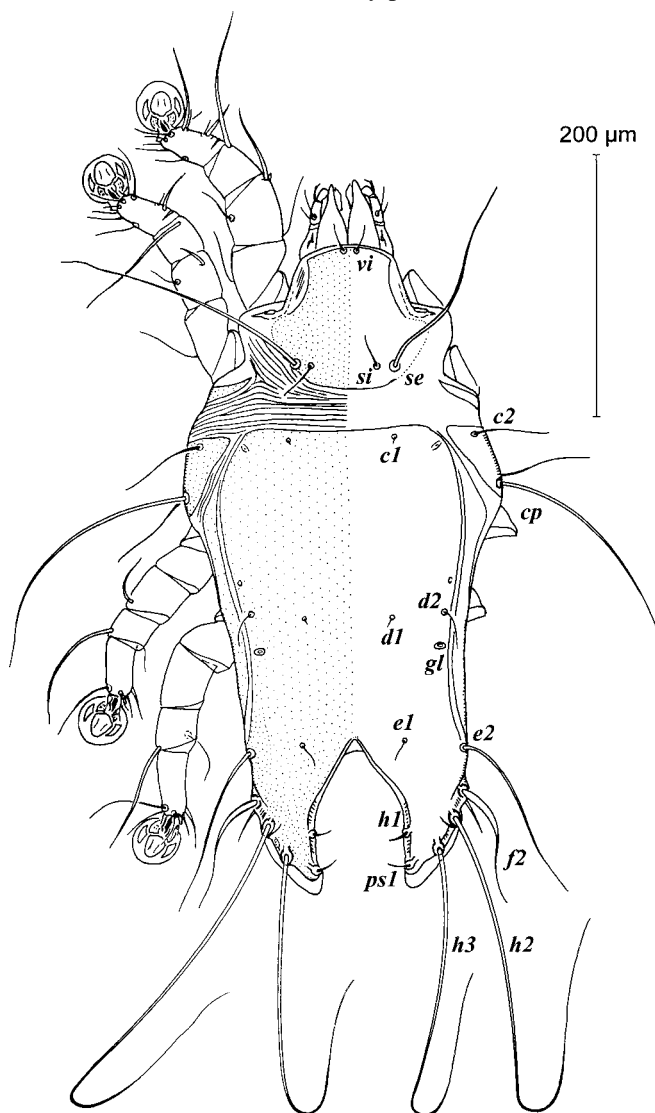
Key words: acarology, feather mites, *Freyanoidea*, *Burhinacarus*, *Cernyella*, new species, *Burhinidae*.

INTRODUCTION

The feather mite genus *Cernyella* GAUD, 1968 (*Freyanidae*: *Burhinacarinae*) included one described species *Cernyella intermedia* GAUD, 1968 living on the Cape Thick-knee *Burhinus capensis* in South Africa (GAUD 1968, 1972). In the revision of the subfamily *Burhinacarinae*, GAUD and ATYEO (1981) recognized one more species associated with the Beach Thick-knee *Esacus magnirostris* from Australia, but this species was not described. The present paper gives the descriptions of two new species of the genus *Cernyella*, which were found in the course of our taxonomic and phylogenetic studies of the family *Freyanidae*.

The mite material used in the present study was obtained from the feather mite collection of the University of Georgia (Athens, USA). The terminology and idiosomal chaetotaxy follow GRIFFITHS et al. (1990) and the leg chaetotaxy is that of ATYEO and GAUD (1966). All measurements are given in micrometers.

Holotypes and paratypes of all new species are deposited in ZMUM - the Zoological Museum of the University of Michigan, Ann Arbor, USA, as the collection from the UGA has been recently placed in this museum.



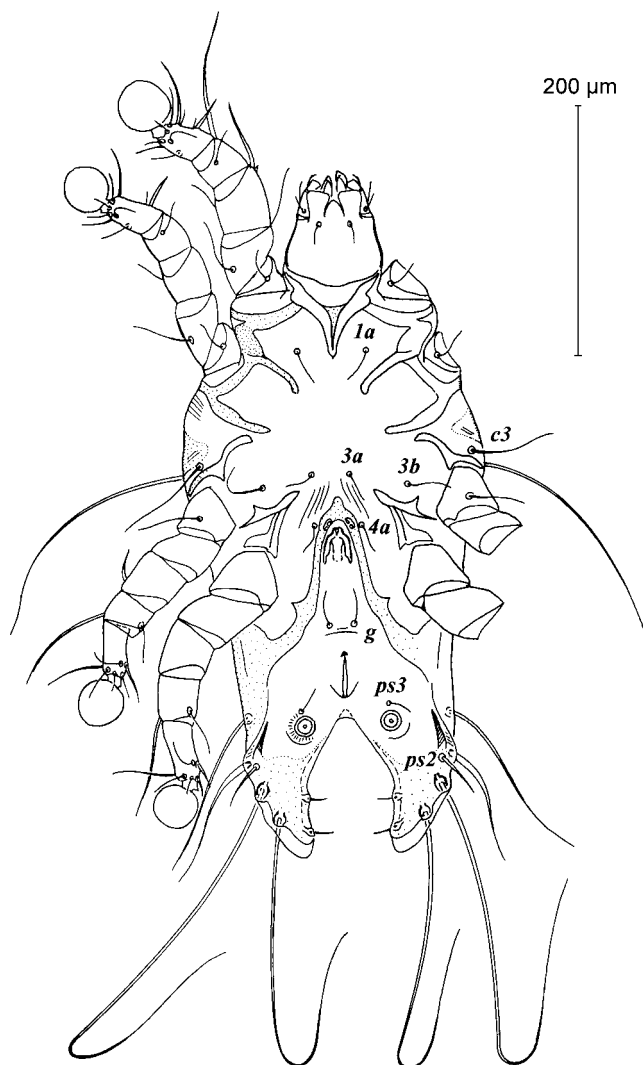
1. *Cernyella howei* sp. n., dorsal aspect of heteromorph male

***Cernyella howei* sp. n.**

(Figs 1-4)

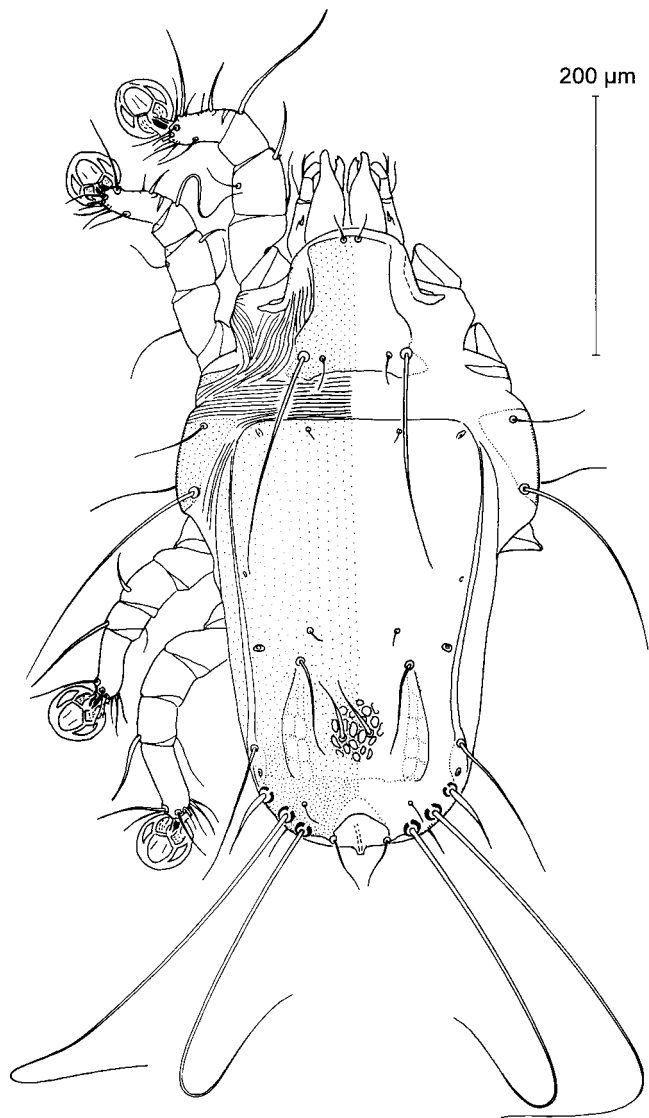
DESCRIPTION

Heteromorph male (holotype). Idiosoma 496 in length, 245 in width. Prodorsal shield 114 in length, 108 in width, with slightly convex posterior margin; distance between setae *se* 77. Hysteronotal shield 348 in length, 180 in width. Both dorsal shields uniformly dotted. Setae *c2*, *c3* hair-like, slightly longer than



2. *Cernyella howei* sp. n., ventral aspect of heteromorph male

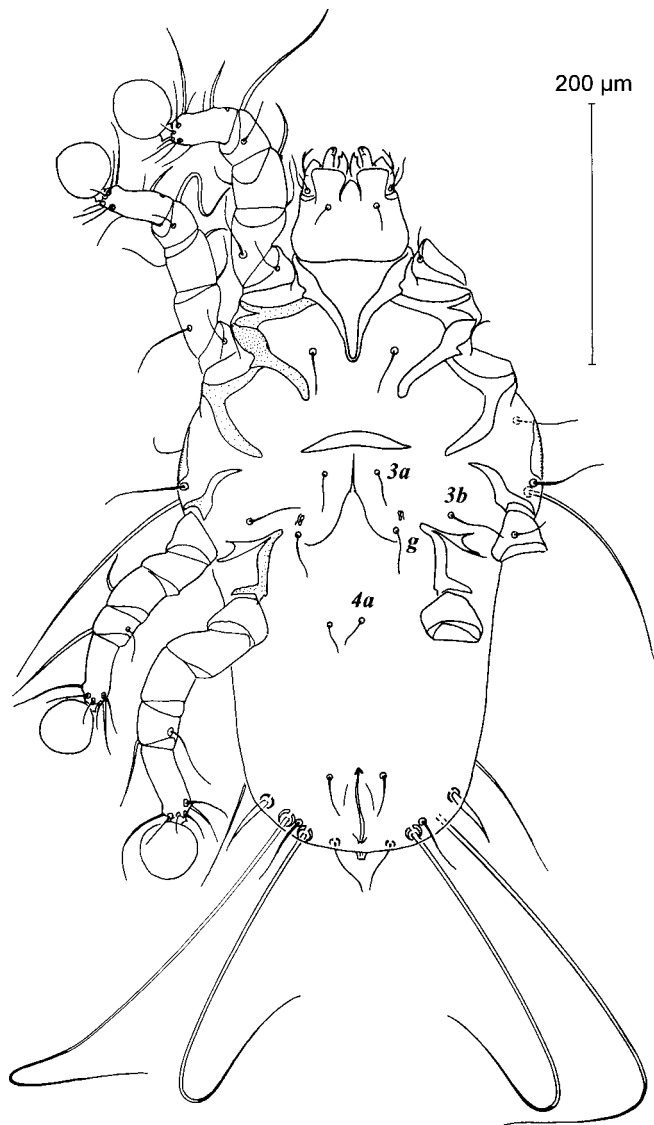
femora I, II. Opisthosomal lobes with attenuate apices, with narrow lateral membranes spreading from bases of setae *h2* to lobar apices (Fig. 1). Terminal cleft ovoid, with narrowed anterior part, 97 in length, 62 in width, without interlobar membrane. Setae *e2* hair-like, long, extending beyond lobar apices; setae *f2* with slightly enlarged basal part and thread-like distal part, setae *h2*, *h3* situated on lateral margin of lobes, setae *ps1* on lobar apices.



3. *Cernyella howei* sp. n., dorsal aspect of female

Epimerites I fused V-shapely. Genital apparatus situated between levels of trochanters III and IV, 26 in length, 17 in width. Genital apodemes fused into long and narrow arch encompassing genital apparatus, posterior ends of this arch fused with opisthoventral shields (Fig. 2). Genital discs and setae *4a* situated at level of genital apparatus apex. Distances between setae: *3a-4a* 40, *4a-g* 83, *g-ps3* 68, *4a-4a* 37, *g-g* 20, *ps3-ps3* 71.

Homeomorph male unknown.



4. *Cernyella howei* sp. n., ventral aspect of female

Female (paratype). Idiosoma 498 in length, 275 in width. Prodorsal shield 113 x 90, with concave posterior margin, surface uniformly dotted; distance between setae *se* 78. Setae *c2*, *c3* as in male. Hysteronotal shield 332 in length, 220 in width; posterior part of this shield with medial patch of small lacunae and with a pair of narrow longitudinal areas of faint network (Fig. 3). Setae *d2* hair-like, situated medially and slightly posterior to hysteronotal gland openings *gl*. Setae *e1* slightly enlarged in basal part, situated in medial patch of lacunae. Setae *e2* hair-like, long, extending beyond posterior margin of opisthosoma. Setae *ps1* hair-like, short. Short tube-like external spermaduct present. Distances between setae: *d2-e2* 66, *e1-e1* 23, *e1-ps1* 85, *ps1-ps1* 43. Epimerites I fused in narrow U. Epigynium as transversal sclerite with acute tips, 11 in length, 76 in width (Fig. 4).

DIFFERENTIAL DIAGNOSIS

The heteromorph male of *Cernyella howei* sp.n. differs from *C. intermedia* in having attenuate apices of opisthosomal lobes and the apodemal arch encompassing the genital apparatus. The female of the new species is distinguished by having the medial patch of small lacunae in the posterior part of hysteronotal shield, the setae *e2* situated posterior to openings *gl*, and simple hair-like setae *ps1*. In heteromorph males of *C. intermedia*, the opisthosomal lobes have rounded apices, and the genital apodemes are absent; in the females, the posterior part of hysteronotal shield without lacunae, setae *e2* are located anterior to openings *gl*, and setae *ps1* are lanceolate.

MATERIAL

Heteromorph male holotype, 2 females paratypes (NU 9197, USNM 368 603), from the Double-striped Thick-knee *Burhinus bistriatus pediacus*, Puerto Estrella, Colombia, 3.05.1941, A. WHETMORE and M. A. CARRIKER Jr. coll.

ETYMOLOGY

The species is named in a honor of Prof. Dr. Jürgen HOWE, the rector of the University Vechta (Germany) and our friend.

Cernyella thailandica sp. n.

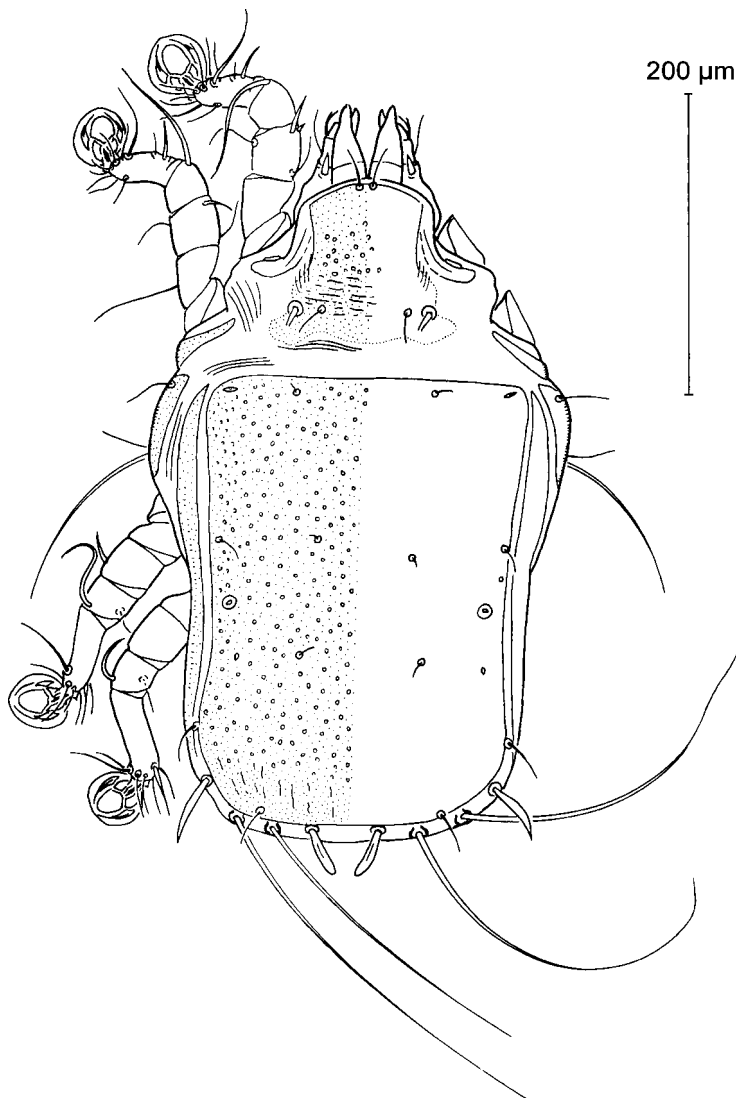
(Fig. 5, 6)

DESCRIPTION

Homeomorph male (holotype). Length of idiosoma 449, width of idiosoma 276. Prodorsal shield 119 x 115, posterior margin slightly sinuous, distance between setae *se* 88. Hysteronotal shield 301 in length, 214 in width. Surface of both shields with numerous small pit-like lacunae (Fig. 5). Setae *c2*, *c3* hair-like, short. Opisthosomal lobes not developed, opisthosoma bluntly rounded. Opisthosomal membranes absent. Setae *ps1* lanceolate, with rounded apex, 30 x 6.2, distance between their bases 46.

Epimerites I fused as narrow U. Genital apparatus at level of posterior margins of trochanters IV, 31 in length, 36 in width. Genital apodemes absent. Genital discs and setae *4a* situated anterior to genital apparatus apex (Fig. 6). Distances between setae: *3a-4a* 45, *4a-g* 68, *g-ps3* 63, *4a-4a* 28, *g-g* 42. Adanal discs absent. (Seta *ps3* on one side absent).

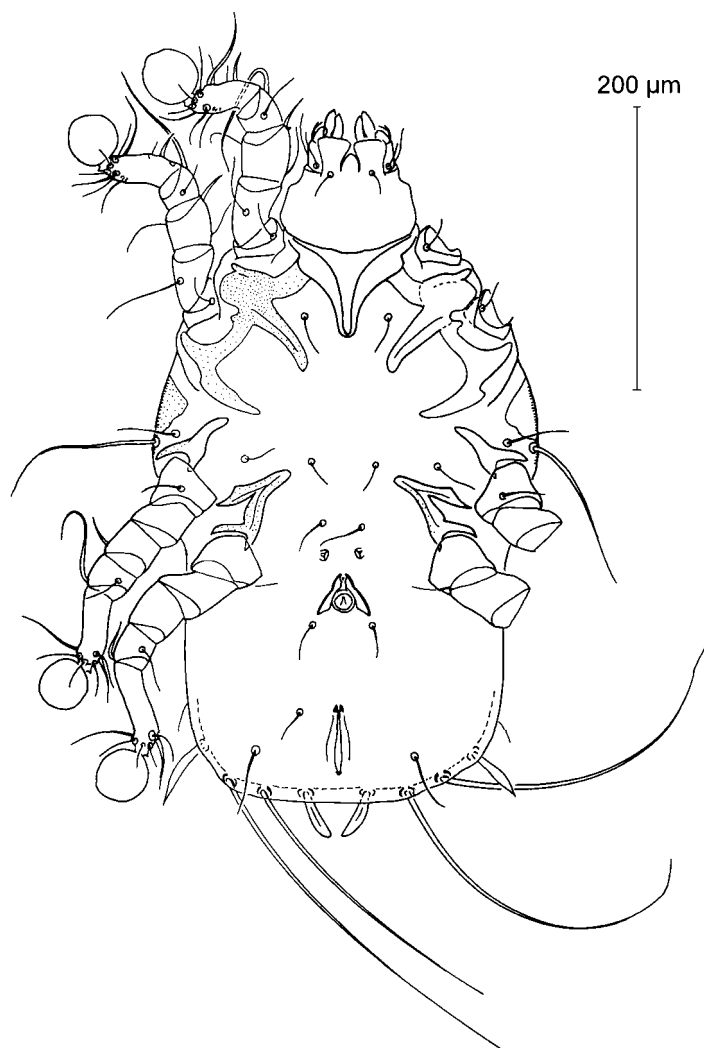
Heteromorph male and female unknown.



5. *Cernyella thailandica* sp. n., dorsal aspect of homeomorph male

DIAGNOSIS

The homeomorph male of *Cernyella thailandica* sp.n. differs from both male forms of *C. intermedia* and also from the preceding species in having the prodorsal and hysteronotal shields with numerous pit-like lacunae. It also differs from the homeomorph male of *C. intermedia* by bluntly rounded posterior margin of opisthosoma. In both forms of males of *C. intermedia*, the dorsal shields are uniformly dotted; in the homeomorph males, the posterior margin of opisthosoma between setae *h2* is shallowly concave.



6. *Cernyella thailandica* sp. n., ventral aspect of homeomorph male

MATERIAL

Homeomorph male holotype (NU 9206, USNM 336 973) from the Great Thick-knee *Esacus recurvirostris*, Chiang Saen, Chiangrai province, Thailand, 9.01.1937, H. G. DEIGNAN coll.

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