

**ON IDENTITY OF THE TYPE SPECIES OF THE FEATHER MITE GENUS
ANHEMIALGES GAUD, 1958 (ASTIGMATA: ANALGIDAE), WITH THE
DESCRIPTION OF A NEW GENUS OF THE ANALGID SUBFAMILY MEGNINIINAE**

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ABSTRACT: This paper demonstrates that the genus *Anhemialges* Gaud, 1958 (Analgidae: Analginae) is based on the misidentified type species “*Anhemialges longipes* (Trouessart, 1899)”. As indicated originally (Gaud 1958) and subsequently, this species commonly occurs on the barn swallow, *Hirundo rustica* (Passeriformes), and some other hirundinid species worldwide. Examination of the holotype specimen of *Megninia longipes* Trouessart, 1899 described from the horned screamer, *Anhima cornuta* (Anseriformes), from South America revealed that it does not correspond to the species occurring on hirundinids and belongs to the subfamily Megniniinae rather than Analginae. The species actually involved in the misidentification, *Anhemialges gaudi* sp. n. (= *A. longipes* sensu Gaud, 1958, non Trouessart, 1899), is fixed here as the type species of the genus *Anhemialges* (Article 70.3.2, ICZN). A new genus, *Anhimomegninia* gen n., is established based on *Megninia longipes*. The genus *Anhemialges* is provided with an emended diagnosis and the species *Anhimomegninia longipes* (Trouessart, 1899), comb. n. is redescribed based on the holotype.

KEY WORDS: feather mites, Analgidae, *Anhemialges*, *Anhimomegninia*, new taxa, systematics, taxonomic correction

INTRODUCTION

The feather mite genus *Anhemialges* Gaud, 1958 (Analgidae) is a morphologically well outlined genus of the subfamily Analginae (Gaud 1958; Gaud and Till 1961; Gaud and Atyeo 1996). As for most Analgidae, representatives of this genus live on down feathers and on the downy parts of body covert feathers (Mironov 1999). This genus currently includes only four described species from passerines of the families Hirundinidae and Zosteropidae. However, taking in account that Atyeo (in: McClure and Ratanaworabhan 1973) reported unidentified *Anhemialges* species from 23 hosts of eight passerine families and even one species from a piciform host in South-Eastern Asia, it is possible to suggest that this genus is probably as diverse as *Analges* Nitzsch, 1818, most the species-richest genus in Analgidae, and also has a very wide host range.

Investigation of the type material of the type species of this genus, *Anhemialges longipes* (Trouessart, 1899), revealed confusion in the identity of the type species of the genus *Anhemialges* (see below for material and methods). It appeared that “*A. longipes*” in sense of Gaud (1958) and subsequent authors does not correspond to the type specimen, and the genus *Anhemialges* was actually based on a misidentified and undescribed mite species.

Gaud (1958) established the genus *Anhemialges* in the course of systematic investigations of feather mites in Morocco. Originally Gaud included in this genus a sole species, *Megninia longipes* Trouessart, 1899, which he collected in Morocco from the barn swallow *Hirundo rustica* Linnaeus (Passeriformes: Hirundinidae). In a bit earlier pa-

per Gaud (1953) reported this species from *H. smithi* in Oubangui-Chari (recently the Central African Republic). It is necessary to stress that Trouessart (1899) actually described *M. longipes* from the horned screamer *Anhima cornuta* (Linnaeus) (Anseriformes: Anhimidae) in Guyana. It is impossible to guess why Gaud (1958) identified the mite species he found on the barn swallow as *M. longipes*. The original description (Trouessart 1899) was very brief and without figures, and Gaud probably relied on the redescription of this species (Bonnet 1924), which included figures of the posterior end of opisthosoma and tarsus III of male. The finding of *M. longipes* on a host, which is phylogenetically very distant from the type host and taken from a different continent, also did not disturb Gaud. It is only possible to suggest that he considered the record of *M. longipes* from the horned screamer as the result of accidental contamination, because Trouessart collected feather mite samples from museum skins. In establishing the new genus *Anhemialges*, Gaud (1958) even did not mention the type host of *M. longipes*.

Further, Gaud and Mouchet (1959) reported *A. longipes* from the three more species of swallows, *H. nigrata* Gray G.R., *Cecropis abyssinica unitatis* Sclater et Mackworth-Praed, and *Psalidoprocne pristoptera petiti* Sharpe et Bouvier, in Cameroon. It is interesting that these authors indicated *Hirundo senegalensis* Linnaeus as the type host instead of *Anhima cornuta* in their paper. Apparently they based their statement about the host species on the paper of Bonnet (1924), who revised the genus *Megninia* Berlese, 1881 and listed for *M. longipes* the three quite different hosts: *Anh. cornuta*, *Streptoprocne zonaris* Shaw (Apod-

iformes: Apodidae) and *H. senegalensis*. No doubts that the first host was taken from the paper of Trouessart (1899), while two others were added by Bonnet (1924) based on his own material. The two latter records apparently represented mites from the genera *Cypselalges* Gaud et Atyeo, 1991 (a genus specific to swifts) and *Anhemialges* sensu Gaud, 1958, respectively. Thus, the “redescription” of *M. longipes* given by Bonnet (1924) was apparently based on three different species.

In their review of feather mites living in sub-Saharan Africa, Gaud and Till (1961: Fig. 108A, B) for the first time illustrated the mite from hirundinids that they considered to be *A. longipes*. In that work they also mentioned that the genus *Anhemialges* included two species. Unfortunately these authors did not name the second species, and it is only possible to guess that they probably meant *Megninia aestivalis subintegra* Berlese (1883), which was described from the martins *Delichon urbicum* (Linnaeus) and *Riparia riparia* (Linnaeus) (Hirundinidae) in Italy and was illustrated quite well (Berlese 1883: fasc. 26, No 1).

Since the 1960s, a number of subsequent authors reported *A. longipes* (sensu Gaud, 1958) from various hirundinids, mainly from common European species (Černý 1967, Arutunjan and Mironov 1983; Mironov 1983, 1996; Kolarova and Mitov 2008). In the review of suprageneric feather mite taxa of the World, Gaud and Atyeo (1996) once more gave the drawings of the male and female of *A. longipes* based on specimens from some hirundinids.

Investigation of the holotype specimen of *Megninia longipes* deposited in the Trouessart collection (Muséum national d’Histoire naturelle, Paris, France, slide 28i9) has shown that this species does not correspond to the species that commonly occurs on *Hirundo rustica*. Moreover, the specimen of *Megninia longipes* described by Trouessart (1899) even does not belong to the subfamily Analginae. It represents a quite distinctive species of the subfamily Megniniinae and deserves to be treated as a separate genus related to *Megninella* Gaud, 1958. Thus, Gaud (1958) actually misidentified a mite species, which he used as the type species for the genus *Anhemialges*. This species has never been formally described, only its figures were reproduced in three papers (Gaud and Till 1961; Arutunjan and Mironov 1983; Gaud and Atyeo 1996). Applying Article 70.3.2 of the International Code of Zoological Nomenclature (ICZN 1999), I describe *Anhemialges gaudi* sp. n. (=An-

hemialge longipes sensu Gaud, 1958, non Trouessart, 1999) and fix it here as the type species of the genus *Anhemialges*. I also provide in the present paper an emended diagnosis of the genus *Anhemialges*, establish a new genus *Anhimomegninia* gen. n. with the type species *Megninia longipes* Trouessart, 1899 and redescribe the latter species as *Anhimomegninia longipes* (Trouessart, 1899) comb. n.

MATERIAL AND METHODS

The type specimen of *Megninia longipes* was loaned from the Muséum national d’Histoire naturelle (Paris, France); other specimens used in the present study belong to the collection of the Zoological Institute of the Russian Academy of Sciences (Saint Petersburg, Russia).

The diagnoses and descriptions are given in the modern formats used for analgid mites (Gaud and Atyeo 1991; Mironov and Galloway 2002a, 2002b). General morphological terms, leg and idiosomal chaetotaxy follow Gaud and Atyeo (1996). All measurements are in micrometres (µm). Measurement standards for particular structures are as follows: (i) idiosoma is measured from its anterior margin to lobar apices in males and to posterior margin of opisthosoma in females, (ii) prodorsal shield length is the greatest length from anterior end to level of posterior angles and width is the greatest width of its posterior part; (iii) hysterosoma is measured from the level of the sejugal furrow to lobar apices in males and to the posterior margin of opisthosoma in females; (iv) hysteronotal shield length is the greatest length from the anterior margin to lobar apices; width is measured at the anterior margin; (v) distance between setae of different pairs is the shortest distance between the transverse levels formed by setae of corresponding pairs.

Depositories of examined material: TRT — the Muséum national d’Histoire naturelle, Paris, France; ZISP — the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg, Russia. Systematics and scientific names of birds follow Dickinson (2003).

SYSTEMATICS

Family Analgidae Trouessart et Mégnin, 1884 Subfamily Analginae Trouessart et Mégnin, 1884

Genus *Anhemialges* Gaud, 1958

Gaud 1958: 36; Gaud and Mouchet 1959: 159; Gaud and Till, 1961: 192, Arutunjan and Mironov 1996: 232; Gaud and Atyeo 1996 (Pt. I): 53, (Pt. II): 26.

Type species: *Megninia longipes* non Trouessart, 1899 by monotypy (ex *Hirundo rustica*, Morrocco) (= *Anhemialges gaudi* sp. n. ex *H. rustica*).

Diagnosis. Both sexes. Medium sized analgines. Prodorsal shield occupying median part of prodorsum, shaped as narrow trapezium, with pair of longitudinal median ridges, with pair of acute suprategumental extensions on posterior margin of this shield (Figs. 1A, 2A). Laterocoxal setae present, setiform. Scapular shields with suprategumental extension on inner margin. Hysteronotal setae absent: *c1*, *h1*. Vertical setae *ve* present, rudimentary. Epimerites I fused into a Y with long sternum, anterior and central parts of these epimerites strongly thickened (Figs. 1B, 2B). Femur I with large hook-like lateral apophysis rounded apically, trochanter I with tooth-like lateral apophysis opposing to femoral apophysis (Figs. 3A, C); femur II with small hook-like lateral apophysis or without it. Tarsi I, II with cuff-like (machete-like) ventral apophyses, tibiae I, II with spine-like ventral apophyses. Tarsus I with 8 setae (*ba*, *d*, *e*, *f*, *la*, *ra*, *wa*, *s*), tarsus II with 7 setae, ventral seta *wa* absent (Figs. 3A, B, D).

Male. Idiosoma moderately elongated; lateral margins of opisthosoma slightly attenuate posteriorly, without deep incisions. Opisthosoma bilobate; opisthosomal lobes of moderate size, roughly rectangular or angular, separated by rectangular or trapezoidal terminal cleft, which is 2–3 times wider than opisthosomal lobe width; terminal cleft occupied by interlobar membrane with deep median incision and short extensions extending beyond lobar apices. Lateral membranes absent. Hysteronotal shield with acute or rectangular anterior angles, anterior margin straight or moderately concave. Setae *c2* situated on humeral shields. Setae *d2*, *e2* represented by macrosetae, these setal pairs far removed from each other and both distant from anterior angles of hysteronotal shield: setae *d2* situated at level of trochanters III, setae *e2* posterior to level of trochanters IV. Setae *h3* on lobar apices, setae *h2* on lateral margins of lobes. Setae *ps1* on lateral margins of terminal cleft, far anterior to level of setae *h3*.

Coxal field III closed, rarely may be open in mesal angles. Genital apparatus at level of trochanters III. Epiandrium present or absent, thin bow-shaped if present, paragenital apodemes represented by narrow longitudinal bands flanking genital apparatus laterally. Genital shield absent. Anal field (ventral area of opisthosoma bearing anal opening, anal suckers, setae *ps3*, and adanal

shield), flanked laterally by wide adanal membranes stretching from adanal shield to bases of setae *ps2*. Area between anal field and posterior ends of paragenital apodemes covered with large gastral shield (paired or unpaired). Anal suckers cylindrical, low, corolla not dentate.

Legs III hypertrophied, slightly thicker and about 1.5 times longer than legs IV. Femur, genu and tibia III cylindrical, without apophyses. Tarsus III elongated subequal in length to corresponding tibia and slightly curved, setae *s* and *w* of tarsus III lanceolate, spiculiform, or blade-like, other setae of this segment setiform. Tarsus IV subequal in length to corresponding tibia, conical and curved, with bidentate apical process; seta *d* button-like, seta *e* stick-like, minute, situated on apical process. Pretarsi III, IV developed as on legs I, II.

Males are strongly intraspecifically variable in body size and particularly in size of opisthosomal lobes, but polymorphism is continuous, without the contrasting qualitative features observed in *Analges* or *Hemialges* Trouessart et Neumann, 1888 that allows designation of heteromorph and homeomorph forms.

Female. Hysteronotal shield absent. Setae *e1*, *d1* present or absent (variation occurs among individuals of the same species). Epigynum present, bow-shaped, free from epimerites, distant from posterior tips of epimerites I, II. Lateral flaps of oviporus not sclerotized. Epimerites IIIa short, not extending to posterior end of oviporus flaps.

Other included species: *Anhemialges subinteger* (Berlese, 1883) from *Delichon urbicum* (Linnaeus) (Hirundinidae); *A. albidus* (Tyrrell, 1882)¹ comb. n. from *Tachycineta bicolor* (Vieillot) (Hirundinidae), *A. gracillimus* (Bonnet, 1924) from *Zosterops maderaspatanus* (Linnaeus) (*Z. madagascariensis* in the original description) (Zosteropidae). Only type hosts are listed.

***Anhemialges gaudi* sp. n.**

Figs. 1–3

Megninia longipes (non Trouessart, 1899): Bonnet 1924: 174, fig. 33, 34 (part.); Gaud 1953: 211; Radford 1953: 207 (part.) [misidentification].

Anhemialges longipes (non Trouessart, 1899): Gaud 1958: 36; Gaud and Mouchet 1959: 159;

¹ This species was originally described by Tyrrell (1882) in the genus *Megninia* Berlese, 1881. Formally, Černý (1967) for the first time used the combination *Anhemialges albidus*, but it was given in the unpublished museum catalog of the Cuban fauna.

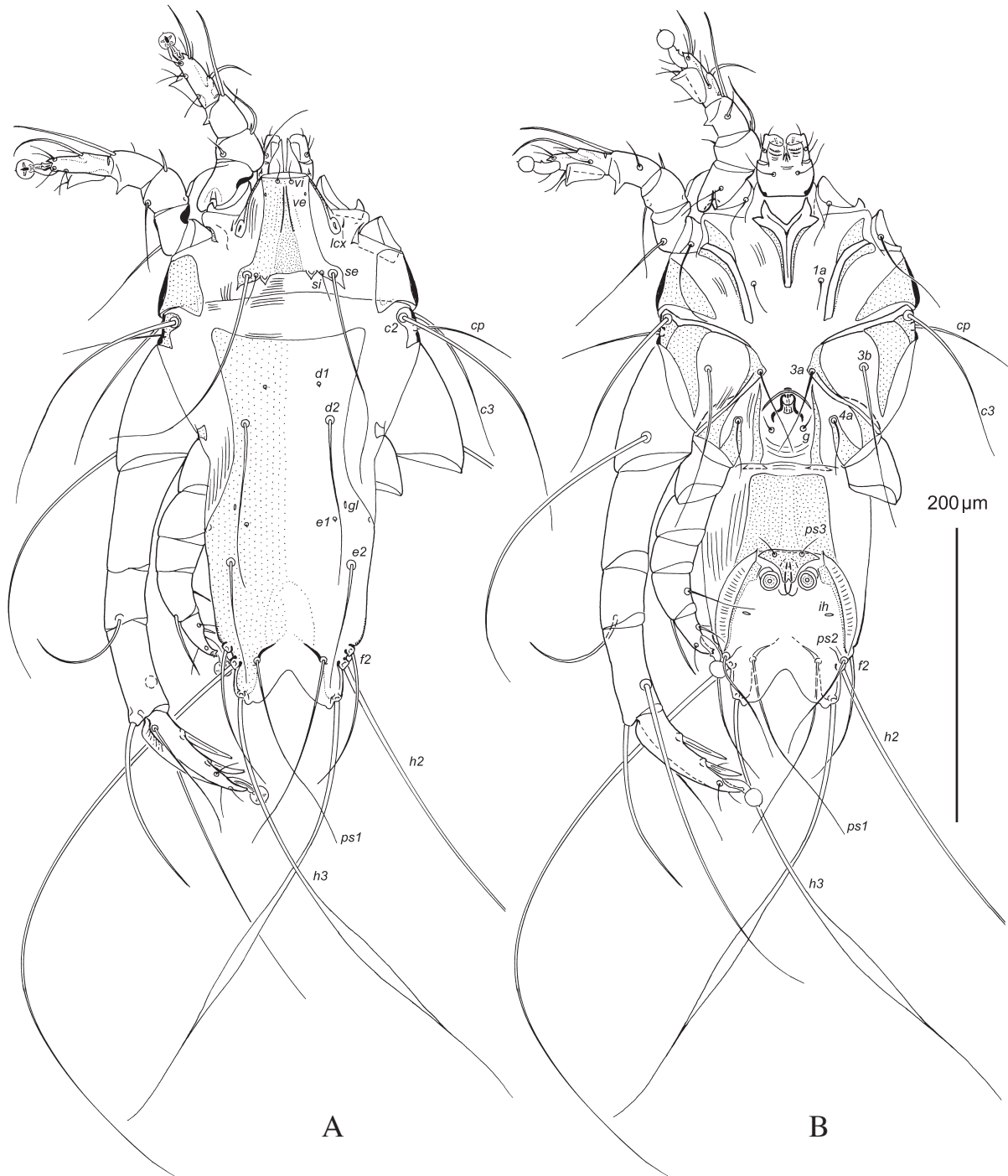


Fig. 1. *Anhemialges gaudi*, sp.n., male holotype. A — dorsal view, B — ventral view.

Gaud and Till 1961: 193, fig. 108A, B; Černý 1967: 17; Arutunjan and Mironov 1983: 232, fig. 9, 1–4; Mironov 1996: 255; Gaud and Atyeo 1996 (Pt. II): 26, fig. 37A–E; Kolarova and Mitov 2008: 94. [misidentification].

Type material. Male holotype, (ZISP 4481), 7 males and 6 female paratypes (ZISP 4482 – 4493) ex *Hirundo rustica* Linnaeus (Passeriformes: Hirundinidae), RUSSIA, Kaliningrad Province, Rybachy, 55°05' N, 20°44' E, 27 May 1982, S.V. Mironov.

Additional material. 1 male, 1 female (ZISP 16 653) ex *H. rustica*, FRANCE, La Roche sur Yon, August, 1962, J. Gaud; 1 female (ZISP 16 654), same host, FRANCE, Dinan, September 1967, J. Gaud; 1 male (ZISP 16 655), same host, FRANCE, Angoulême, August 1963, J. Gaud. All specimens are identified by J. Gaud as *Anhemialges longipes*.

Description. Male (Holotype, range of measurements for 8 paratypes in parentheses). Idiosoma, length × width, 370 × 183 (365–410 ×

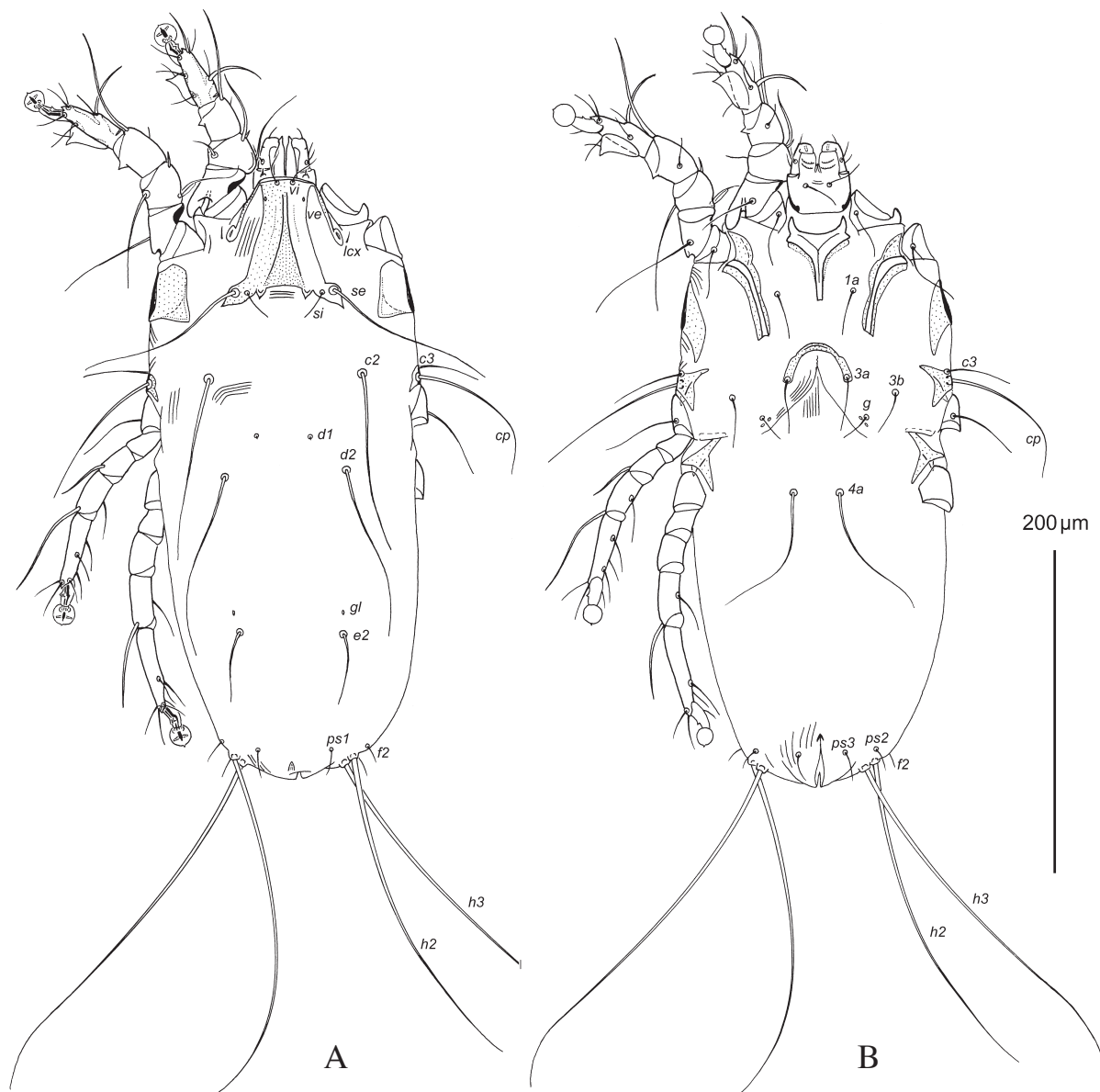


Fig. 2. *Anhemialges gaudi* sp. n., female paratype. A — dorsal view, B — ventral view.

180–215), length of hysterosoma 268 (265–305). Gnathosoma without spines on lateral margins of subcapitulum. Prodorsal shield: narrowly trapezoidal, length 75 (70–85), width 78 (75–80), posterior margin concave, with pair of acute suprategumental extensions about 6 (6–8) long, setae *se* separated by 62 (60–88). Scapular shield with angular suprategumental extensions in postero-mesal angle. Hysteronotal shield: length 260 (255–290), width at anterior margin 100 (96–115), lateral margins, anterior margin slightly concave, surface evenly punctate, without other ornamentation. Terminal cleft: parallel-sided, anterior margin concave, with unclear border, length 48 (42–53), width 47 (45–55). Supranal concavity large semi-ovate, with poorly distinct lateral borders. Interlobar membrane occupies most space between lobes

and forms short extensions on lobar apices, incision in interlobar membrane angular, 26 (20–27) long. Setae *d1*, *e1* present. Setae *e1* posterior to hysteronotal gland openings *gl*. Setae *ps1* at level of setae *h2* or slightly anterior. Setae *h3* flattened and enlarged in medial part, greatest wide 8 (8–10). Distance between hysteronotal setae: *c2:d2* 75 (70–76), *d2:e2* 100 (90–105), *e2:h2* 71 (69–85), *h2:h3* 24 (20–24), *ps1:h3* 24 (22–28), *ps2:ps2* 82 (80–102), *h2:h2* 75 (72–90), *h3:h3* 68 (65–75), *d1:d2* 27 (25–33), *e1:e2* 31 (22–35).

Sternum about 2/3 of total length of epimerites I, basal part of these epimerites strongly thickened. Coxal fields II and III with large triangular sclerotized areas in lateral parts. Epimerites IVa wide triangular, with setae *4a* on anterior end. Genital arch 22 × 26 (17–22 × 24–26), aedeagus minute,

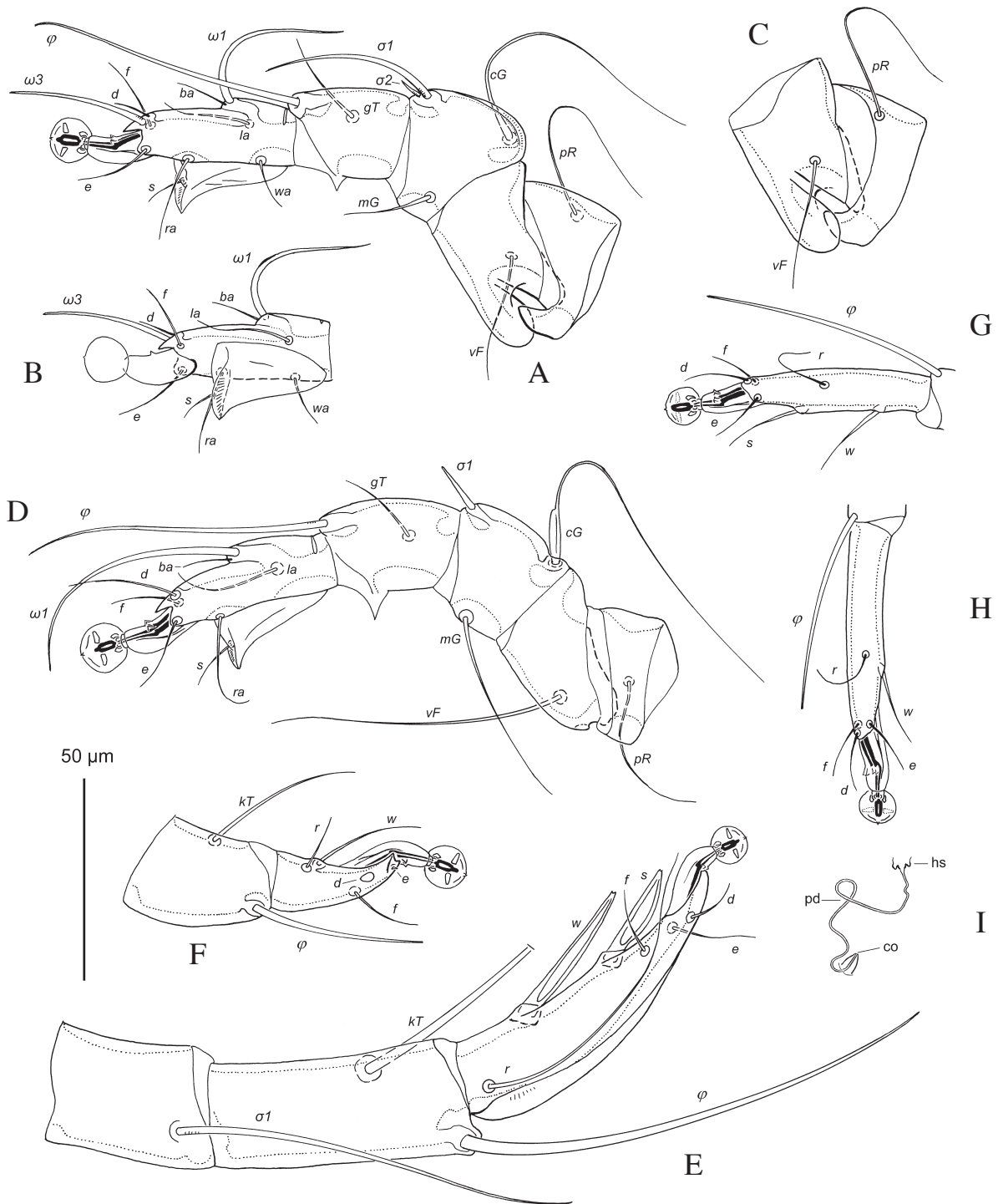


Fig. 3. *Anhemialges gaudi* sp. n., details. A–D — male, G–I — female. A — leg I, dorsal view, B — tarsus I, ventral view, C — trochanter and femur I, ventral view, D — leg II, dorsal view, E — genu, tibia and tarsus III, dorsal view, F — tibia and tarsus IV, dorsal view, G — tarsus III, dorsal view, H — tarsus IV, dorsal view, I — primary spermaduct and head of spermatheca. co — copulatory opening, hs — dead of spermatheca, pd — primary spermaduct.

much shorter than arch. Epiandrum thin, bow-shaped, 18 (16–20) long, 37 (35–40) wide. Paragenital apodemes flank area with epiandrum and genital apparatus from level of setae *3a* to midlevel of trochanters IV. Gastral shield trapezoidal, 65 (50–66) long (in small-sized individuals may be split longitudinally). Adanal shield triangular,

covering anterior half of anal opening, setae *ps3* setiform, situated near anterior margin of adanal shield. Adanal membranes wide, stretching from lateral ends of adanal shield to bases of setae *ps2*, base of membranes with narrow and poorly sclerotized adanal apodemes. Anal suckers low cylindrical, 14 (13–17) in diameter. Cupules *ih* approx-

imately at midlevel of adanal membranes. Length of anal field from anterior margin of adanal shield to lobar apices 130 (110–135). Distance between ventral setae: *3a:4a* 30 (30–35), *3a:g* 42 (40–44), *g:ps3* 88 (80–92).

Femur II with short lateral apophysis curved ventrally (in small-sized individuals may be indistinct). Genua seta *cGI* long setiform, seta *cGII* with foliate enlargement at base and with long filiform apical part. Tarsus III 86 (82–95) long, with narrow crest along lateral margin, blade like setae *w* and *s* 39 (33–40) and 29 (22–30) long, respectively; seta *r* slightly longer than this segment. Tarsus IV conical, slightly curved, with bidentate apex, 33 (32–38) long. Legs IV extending by ambulacral discs to level of setae *h2*.

Female (range of measurements for 6 paratypes). Idiosoma, length × width, 380–400 × 160–180, length of hysterosoma from anterior margin of humeral shields to posterior end of opisthosoma 255–270.

Prodorsal shield shaped as in male, length 78–85, width 72–80, acute suprategumental extension 7–9 long, setae *se* separated by 60–70. Scapular shields as in male. Setae *c2* at level of humeral shields, setae *d2* at level of trochanters IV, length of setae *c2*, *d2* about $\frac{3}{4}$ of idiosoma's greatest width. Setae *e2* not extending to posterior margin of opisthosoma, 2–2.5 times shorter than setae *c2*, *d2*. Setae *e1* absent, setae *d1* present or absent. Distance between setae: *c2:d2* 55–62, *d2:e2* 100–115, *e2:h2* 84–90, *h5:h3* 60–66. Copulatory opening on small conical extension near posterior margin of opisthosoma, secondary spermaducts indistinct, primary spermaduct and head of spermatheca as in Fig. 3I.

Epimerites I as in male. Epigynum semicircular, with slightly thickened posterior, 24–28 long, 39–45 wide. Setae *3a* on tips of epigynum. Genital papillae mesal to bases of setae *g*.

Tarsus III 45–50 long, tarsus IV 52–57, tibial solenidion ϕ III slightly longer than corresponding tarsus, solenidion ϕ IV slightly shorter than corresponding tarsus. Legs IV maximally extending by ambulacral disc to level of setae *f2*.

Differential diagnosis. Males of *Anhemialges gaudi* sp. n. differ from a closely related species, *A. subinteger* from *Delichon urbicum*, by having a uniformly punctate hysteronotal shield, incision in interlobar membrane extending at least to midlevel of terminal cleft, and longer seta *w* of tarsi III extending to midlength of corresponding seta *s*; females differ by the position of the copula-

tory opening on a small conical extension. In males of *A. subinteger*, the median part of hysteronotal shield from its anterior margin to the level of trochanters IV is covered with transverse wavy striae, incision in interlobar membrane shallow, and seta *w* of tarsi III extends only to bases of corresponding seta *s*; in females, the copulatory opening is situated on small blunt extension with a little pit on apex.

Remarks. In establishing the genus *Anhemialges*, Gaud (1958) considered “*Anhemialges longipes*” collected only from *Hirundo rustica* in Morocco and did not mention other hosts. Therefore it is more reasonable to choose this bird species as the type host of the new species; although in the earlier publication Gaud (1953) reported “*Megninia longipes*” from *H. smithi* and *H. senegalensis*. The record for the latter host was cited as Trouessart (1899), however this is apparently an error and he meant Bonnet (1924), who first indicated that *M. longipes* had three different hosts (including *H. senegalensis*), though Bonnet was actually dealing with three different mite species (see Introduction).

So far, five hirundinid species of three genera have been indicated as hosts of *A. gaudi* (Gaud and 1958; Gaud Mouchet 1959; Gaud and Till 1961). Taking into consideration that hirundinid species from the genera *Delichon* Horsfield et Moore and *Tachycineta* Cabanis bear other *Anhemialges* species (Tyrrell 1882, Berlese 1883), it cannot be excluded that Gaud and Till (1961) actually dealt with a complex of closely related mites and that swallows from genera other than *Hirundo* could bear separate mite species.

It is unknown at present, whether the “*Anhemialges longipes*” specimens from *H. hirundo* collected by Gaud in Morocco still exist, but it is potentially possible that they are retained in some collection, where he deposited his materials.

Etymology. The species is named after Prof. Jean Gaud, the greatest French expert in feather mites.

Subfamily Megniniinae Gaud et Atyeo, 1981

Genus *Anhimomegninia* gen. n.

Type species: *Megninia longipes* Trouessart, 1899 from the horned screamer *Anhima cornuta*, Guyana.

Diagnosis. Male. Small-sized megniniines. Idiosoma strongly enlarged in area of humeral and scapular shields. Prodorsal shield occupying median part of prodorsum, shaped as long and narrow

band expanded at level of scapular setae, with median longitudinal ridges in anterior part, without suprategumental extensions on margins. Laterocoxal setae *lcx* absent. Vertical setae *vi* present. Idiosomal setae absent: *ve*, *c1*, *dl*, *e1*, *h1*. Lateral margins of opisthosoma slightly attenuate posteriorly. Opisthosoma bilobate; lobes angular, moderately elongated, separated by ovate terminal cleft. Terminal cleft occupied by interlobar membrane with median incision. Lateral membranes absent. Hysteronotal shield with roughly rectangular anterior part. Scapular and humeral shields fused. Setae *c2* situated on scapular shields. Setae *h3* on lobar apices, setae *h2* on lateral margins of opisthosomal lobes, setae *ps1* on lateral margins of terminal cleft, far anterior to level of setae *h3*.

Epimerites I fused into a Y with long sternum. Coxal field III not closed. Genital apparatus at level of trochanters III. Epiandrum absent. Paragenital apodemes present, flanking genital apparatus laterally. Genital shield absent. Adanal membrane entire, horseshoe-shaped, encircling anterior half of anal field. Adanal and gastral shields present, situated in anterior part of anal field. Anal suckers disc-like, corolla not indented.

Ambulacral discs of legs II–IV narrowly ovate, much smaller than on legs I and provided with thin apical extension (Figs. 6A–D). Central sclerite of ambulacral discs of all legs represented by pair of longitudinal rods. Distal half of ambulacral stalk of tarsi I, II with noticeably convex dorsal side. Femora I, II without lateral apophyses. Tarsi I, II with semicircular ventral expansions (Figs. 6A, B). Tibiae I, II with spine-like ventral apophyses. Tarsi I, II with 8 setae. Solenidion $\omega 1$ and seta *ba* of tarsus II closer to apex than to base of this segment, solenidion $\omega 1$ of tarsus II 2.5–3 times longer than on tarsus I. Legs III hypertrophied, much thicker and longer than legs IV, femur and genu III without apophyses; distal end of tibia III with two apophyses; tarsus III much thinner than other segments of this leg, strongly elongated, with acute apex, setae *s* and *w* lanceolate or spiniform, other setae setiform. Tarsus IV subequal in length to corresponding tibia, with dorsobasal process; setae *d*, *e* barrel-shaped, with discoid cap. Ambulacral stalk of tarsi III, IV strongly elongated, 2–3 times longer than on tarsi I, II.

Female. Unknown.

Differential diagnosis. *Anhimomegninia* gen. n. is close to *Megniniella* Gaud, 1958 by having the following characters in male: the prodorsal

shield narrow, not larger than the distance between scapular setae *se*, epimerites I are fused into a Y, tarsus III is strongly elongated and bears two blade-like setae (*w*, *s*), and ambulacral discs of pretarsi II–IV are strongly reduced compared to those on legs I. Males of *Anhimomegninia* differ from those of *Megniniella* by having semicircular ventral extensions on tarsi I, II (a feature which should occur in females), the scapular and humeral shields fused, and strongly elongated ambulacral stalks of tarsi III, IV. In *Megniniella*, the ventral extensions of tarsi I, II are acute (as in most genera of Megniniinae), the scapular and humeral shields are free, ambulacral stalks of tarsi I, II are only 1.5–2 times longer than those on tarsi I, II.

Semicircular form of the ventral extension on tarsi I, II and central sclerites of ambulacra represented by a pair of longitudinal pieces in all legs are unique characters within Megniniinae. These features should eventually allow to recognize females of this genus, which are unknown at present.

Etymology. Contraction of *Anhima* (the generic name of the host of the type species) and the feather mite genus *Megninia*, gender feminine.

***Anhimomegninia longipes* (Trouessart, 1899)
comb. n.**

Figs. 4–6

Megninia longipes Trouessart 1899: 26; Canestrini and Kramer 1899: 101; Bonnet 1924: 174, figs. 33, 34 (part.); Radford 1953: 207 (part.)

Material examined. Male holotype (by monotypy) (TRT 28i9) ex *Anhima cornuta* (Linnaeus) (Anseriformes: Anhimidae), Guyana.

Description. Male (holotype). Idiosoma, length \times width, 335 \times 218, length of hysterosoma 268–305. Subcapitulum with slightly convex lateral margins, without lateral spines. Prodorsal shield a narrow longitudinal plate slightly enlarged between bases of scapular setae and with pair of short angle-shaped lateral extensions anterior to scapular setae, posterior end slightly extending beyond level of scapular setae, posterior margin straight, length 80, width at level of lateral extensions 47. Both pair of scapular setae off prodorsal shield, setae *se* separated by 53. Setae *c2* on inner margins of scapular shields. Hysteronotal shield: length 222, width at anterior margin 78, anterior angles rounded, anterior margin straight, lateral margins parallel-sided in anterior part, slightly divergent posteriorly, surface punctured, posterior half with fine longitudinal striae and dashes. Ter-

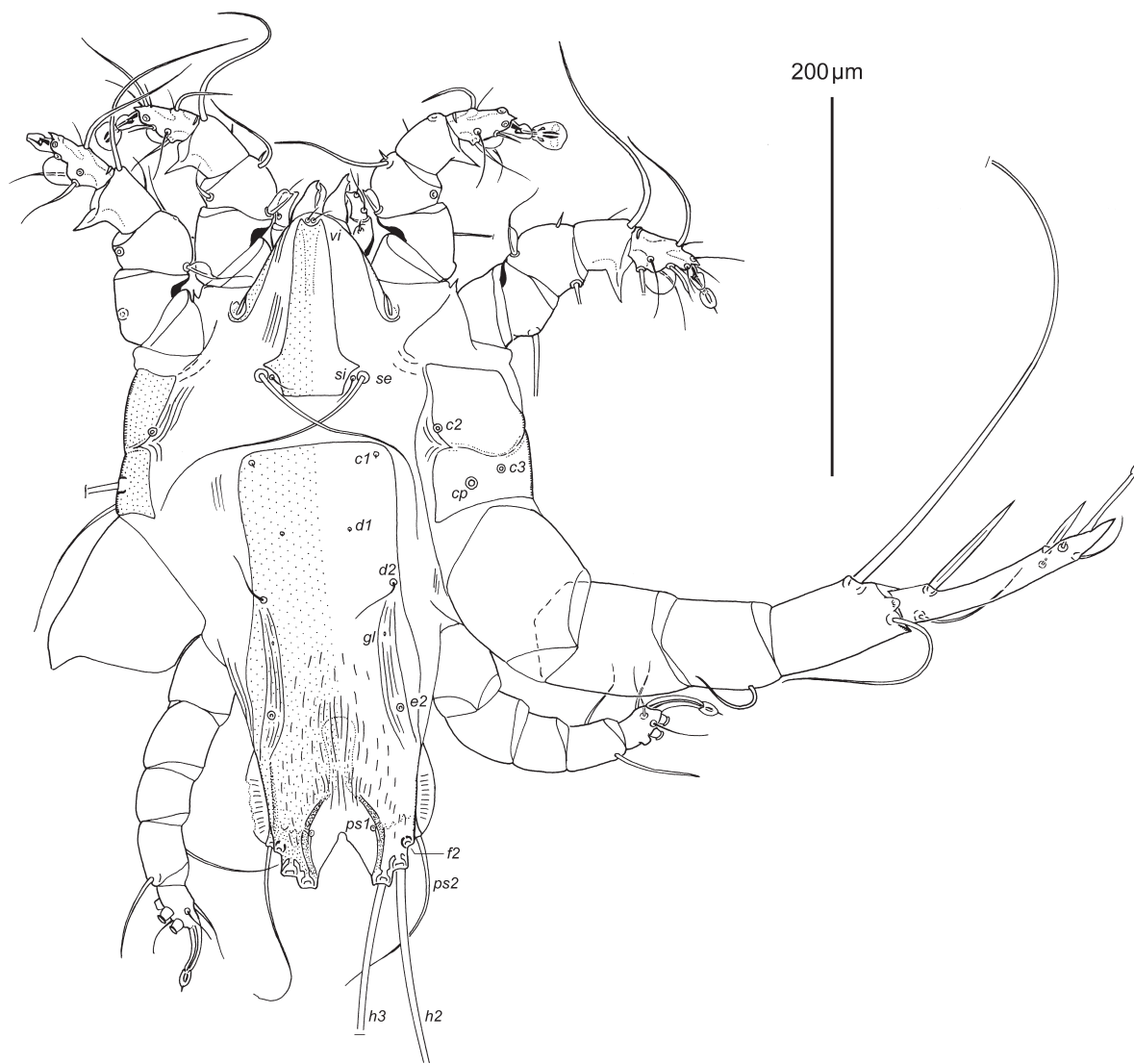


Fig. 4. *Anhimomegninia longipes* (Trouessart, 1899), male holotype: dorsal view.

terminal cleft: ovate, lateral margins well sclerotized, length 47, greatest width 31. Supranal concavity longitudinal, poorly outlined, open posteriorly into terminal cleft. Interlobar membrane occupies most space between lobes, incision in interlobar membrane angular, 29 long. Setae *ps1* slightly anterior to midlevel of terminal cleft. Distance between hysteronotal setae *c2:d2* 80, *d2:e2* 66, *e2:h2* 84, *h2:h3* 7, *ps1:h3* 27, *ps2:ps2* 75, *h2:h2* 55, *h3:h3* 42, *d1:d2* 35.

Sternum slightly longer than half of total length of epimerites I. Coxal fields I–III without large sclerotized areas in lateral parts. Epimerites IVa wide triangular, setae *4a* mesal to their anterior ends. Genital arch: length 20, width at base 20; aedeagus directed anteriorly, curved, 16 long. Paragenital apodemes flanking genital apparatus from anterior and lateral sides, connected by thin longitudinal bands with inner tips of epimerites

IIIa. Inner tips of epimerites IIIa bearing setae *3a* and with narrow extension directed laterally. Adanal membrane large horseshoe-shaped, encircling anal field (ventral area of opisthosoma bearing anal opening, anal suckers, adanal and gastral shields) from anterior and lateral sides and extending to bases of setae *ps2*. Adanal shields roughly rectangular 15×27 , with truncate extension on posterior margin, covering anterior half of anal opening. Gastral shield 21 in length along midline, with two poorly sclerotized branches (adanal apodemes) stretching posteriorly, along basal margin of adanal membrane. Anal suckers disc-like, 116 in diameter. Cupules *ih* close to anal suckers. Length of anal field (from anterior margin of gastral shield to lobar apices) 108. Distance between ventral setae: *3a:4a* 22, *3a:g* 33, *g:ps3* 55.

Femur I with small rounded ledge on lateral margin, femur with rounded margin. Genua seta

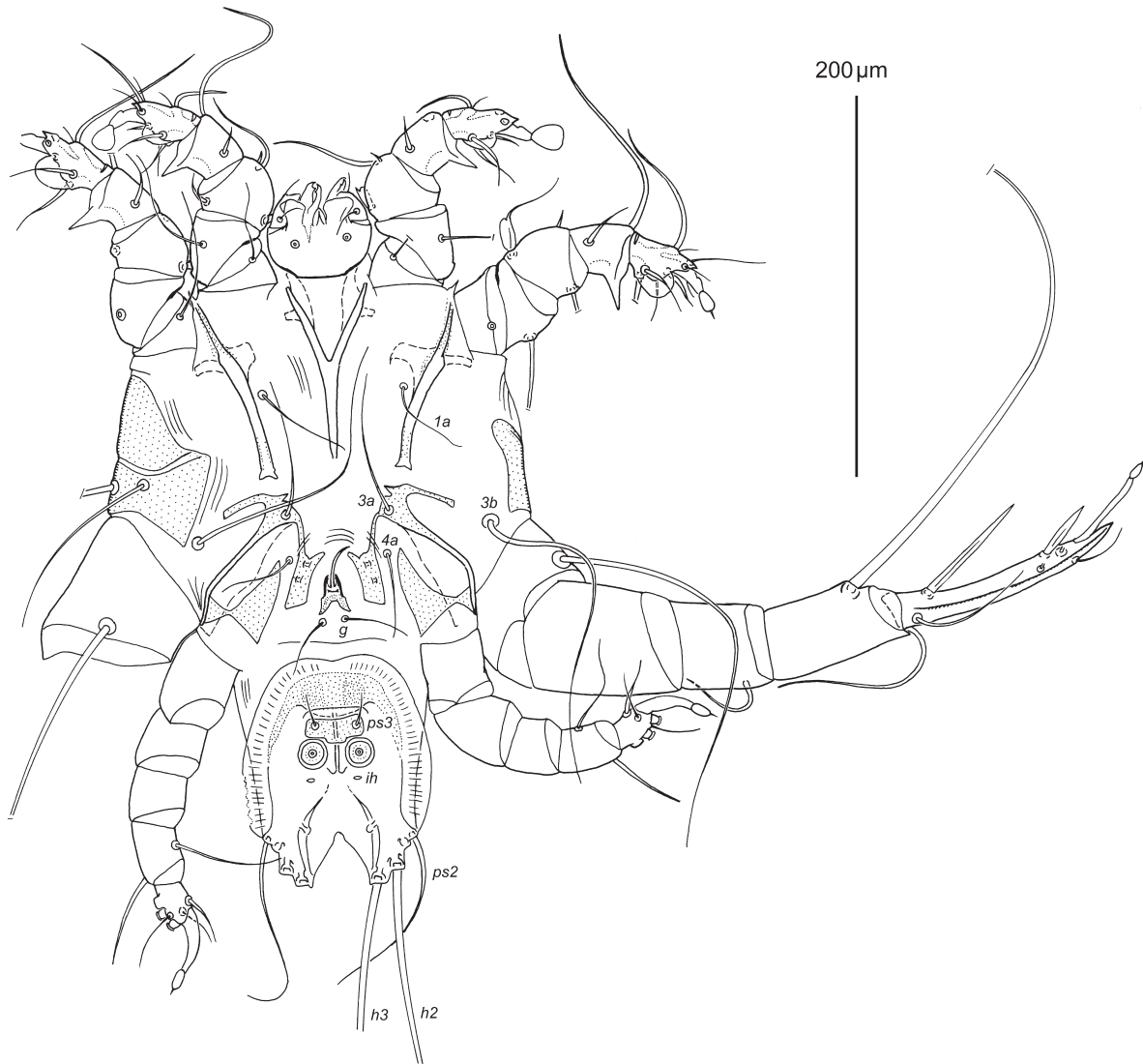


Fig. 5. *Anhimomegninia longipes* (Trouessart, 1899), male holotype: ventral view.

*c*GI short, with foliate lateral enlargement, seta *c*GII with basal foliate enlargement and filiform apical part (Figs. 6A, B). Tarsus III 129 long, approximately 1.5 times longer and 2 times thinner than corresponding tibia, with straight and acute apical extension; setae *w* spiculiform, 62 long, seta *s* lanceolate, 33 long; seta *r* slightly shorter than a half of this segment length (Fig. 6C). Tarsus IV 24 long, slightly shorter than corresponding tibia, with rectangular dorsobasal extension, setae *d*, *e* barrel-like, with discoid apical caps (Fig. 6D).

Remarks. Trouessart (1899) described *Megninia longipes* only from the male and mentioned one host species from one location; unfortunately there is no direct indication in the text that he had a sole male. Since the description is given for a male and the examined slide still retaining the original labels written by the Trouessart's hand is

the only specimen of *M. longipes* from *Anhima cornuta* existing in the Trouessart collection, it is highly probable that Trouessart had in the hands a sole male, and therefore this specimen is the holotype by monotypy (ICZN 1999, Article 73.1.2)

Bonnet (1924: 174, Figs. 33, 34) illustrated the opisthosoma and tarsus III of "*Megninia longipes*" male and listed the three host species: *Anhima cornuta*, *Streptoprocne zonaris* and *Hirundo senegalensis*. The figured structures correspond much more closely to those in the genus *Cypselalges* Gaud et Atyeo, 1991, a genus specific to apodids in the analgid subfamily Protalginae: the extensions of interlobar membrane protruding beyond lobar apices are acute (Fig. 33), tarsus III is cone-like, straight and relatively thick at base (Fig. 34). In *Anhimomegninia*, the extensions of the membrane are absent, in *Anhimalges* they are rounded (if present), and in both genera, tarsus III of male is much

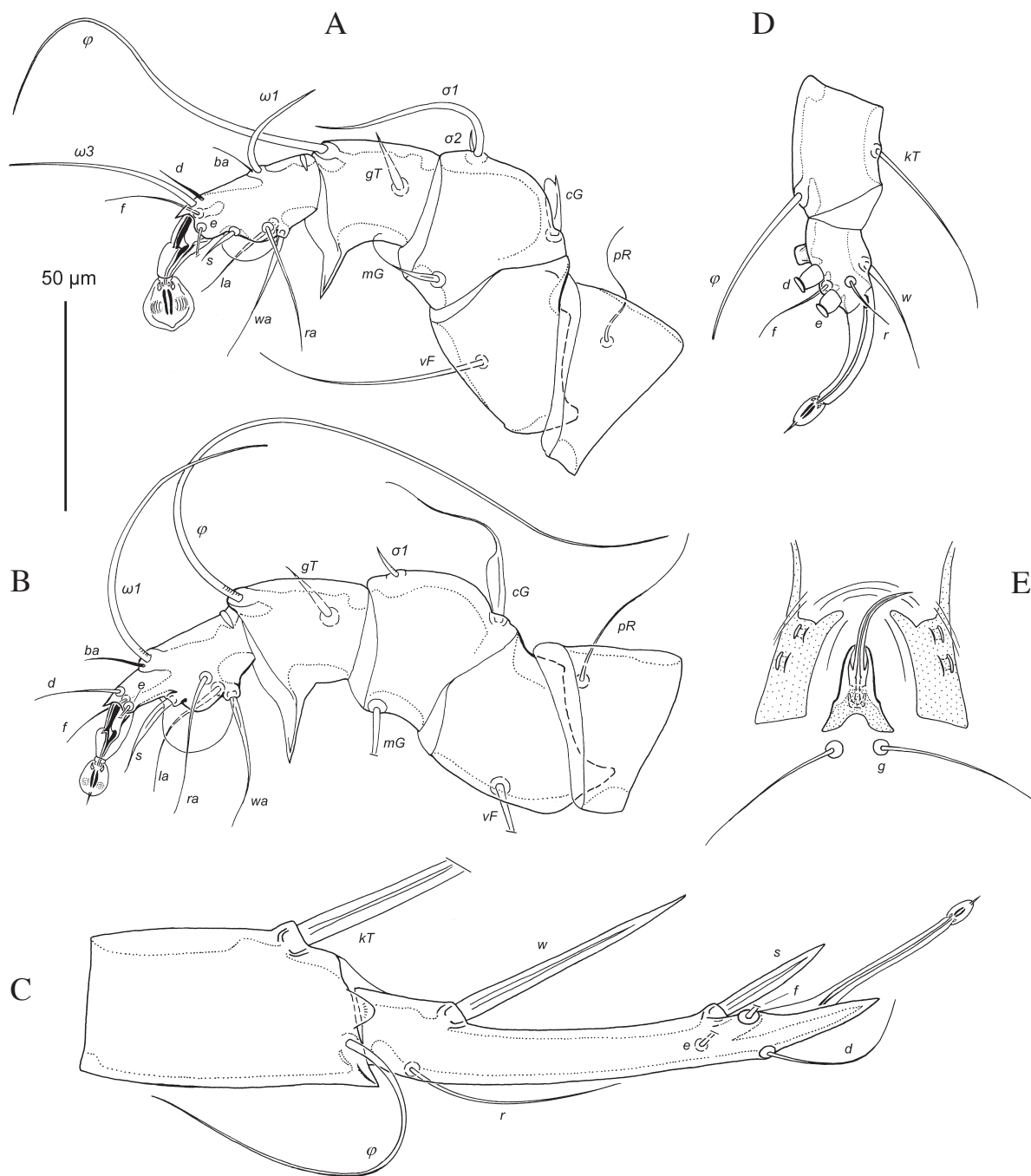


Fig. 6. *Anhimomegninia longipes* (Trouessart, 1899), details of male. A — leg I, dorsal view, B — leg II, dorsal view, C — tibia and tarsus III, dorsal view, D — tibia and tarsus IV, dorsal view, E — genital apparatus and paragenital apodemes. Setation of legs I, II is combined from legs of different sides, because many setae are broken in the holotype specimen.

thinner than was illustrated by Bonnet and definitely curved. Therefore it is quite probable that a *Cypselalges* species from *Streptoprocne zonaris* was actually used for making these drawings.

Feather mites from the families Alloptidae and Freyanidae are known from both genera of screamers, *Anhima* Brisson and *Chauna* Illiger (Dubinin 1950; Peterson 1971), but the finding of *Anhimomegninia longipes* is the only record of an analgid species on birds from the family Anhimidae. Therefore the question remains: is *A. longipes*

a natural parasite of screamers, or is this record caused by the accidental contamination. This question may be solved by additional investigation screamers in relation of their feather mite fauna.

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