FOLIA PARASITOLOGICA (PRAHA) 18: 55—61, 1971.

TWO MESOSTIGMATIC MITES (ACARINA: MACRONYSSIDAE AND DERMANYSSIDAE) ASSOCIATED WITH CUBAN BIRDS

F. DUSBÁBEK and V. ČERNÝ

Institute of Parasitology, Czechoslovak Academy of Sciences, Prague

Abstract. Two species of gamasid mites are reported to be associated with Cuban birds: *Ornithonyssus iheringi* (Fonseca, 1935) known from Brazil, and *Dermanyssus antillarum* sp. n.

During the parasitological investigations of Cuban birds carried out in cooperation of the members of the Institute of Parasitology of the Czechoslovak Academy of Sciences and the Institute of Biology of the Cuban Academy of Sciences several lots of gamasid mites were collected both from birds and from their nests. In the material two species have been discovered.

1. *Ornithonyssus iheringi* (Fonseca)

Liponissus iheringi Fonseca, 1935 — Mem. Inst. Butantan 9: 84

Material examined: 85 ♀♀ 15 ♂♂ and 74 protonymphs from the nest of *Mimus polyglottos orpheus* (L.), El Laguito, La Habana, 17.5. 1967, lgt. V. Černý; 7 ♀♀ and 3 protonymphs from the nest of *Passer domesticus* (L.), the same locality, 14. 6. 1967, lgt. V. Černý; 32 ♀♀ from the body of *Accipiter striatus fringilloides* Vigors, Topez de Collantes, Trinidad, Prov. of Las Villas, 13. 6. 1965, lgt. F. Dusbábek.

The species is known only from Brasil. It was found mostly in association with birds. Fonseca (1935, 1948) mentions as hosts the species *Donacobius atricapillus atricapillus* (L.), *Passer domesticus* (L.) and Hirundinidae g.sp. Although the author found the mite also on *Bradypus tridactylus* (L.) and on man, our findings give evidence about rather close relations of *O. iheringi* with the birds.

Our specimens fully correspond with the redescription of the species given by Fonseca (1948) but they are characterized by greater length of genital plate in female (till 286 μ). The setae S5 on the dorsal plate are a little longer (55—62 μ) and exceed in their length the setae Z5 whose length similarly as the length of the setae Z4—agrees in the limits of variability with the data of Fonseca (Z4 31—39 μ, Z5 50—59 μ). In the vicinity of Z4 a pair of very short setae x, 3—4 μ long, is developed. Despite of these minor differences we range our specimens with *O. iheringi*.

2. *Dermanyssus antillarum* sp. n. Figs. 1—3

Material examined: Holotype (female) and allotype (male) collected from the nest of *Tachornis phoenicobia iradii* (Lembeye) in Blanquizal, Prov. of Pinar del Río, 17. 1. 1968, lgt. V. Černý; numerous paratype specimens, females, males, protonymphs and deutonymphs were collected on the same occasion 17. 1. 1968 and 19. 1. 1968 by junior author. All material is deposited in the collections of the Institute of Parasitology of the Czechoslovak Academy of Sciences in Prague.

From each stage five specimens have been measured. All measurements are given in microns.

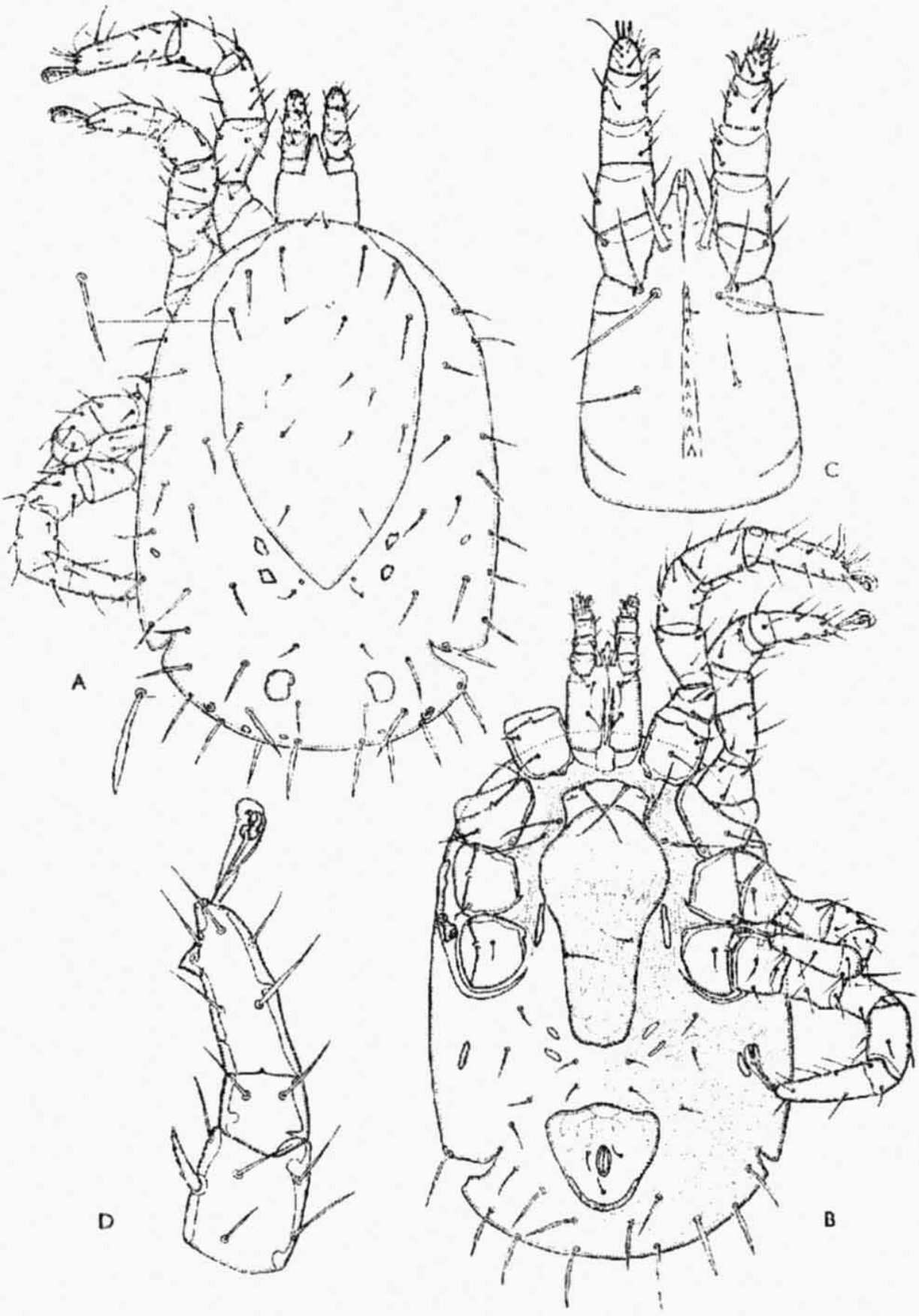

Fig. 1. *Dermanyssus antillarum* sp. n.: A — dorsal view of female, B — ventral view of female, C — gnathosoma of female, ventral view, D — tibia and tarsus III of male, ventro-lateral view.

Female: (holotype № PÚ ČSAV 1634): Body length 552 (503—590 in paratypes), width 387 (329—407). Fully engorged specimens as much as 1000 × 678 large. Integument finely striated.

Dorsum (Fig. 1A): Dorsal plate 366 (358—368) long, 233 (215—240) wide, pointed posteriorly. Only 10 pairs of setae are developed on the plate. Setae j1 indistinguishable, j3 absent. From the J series only J1 situated on the plate. Lateral setae z2, z4 and s4 long (32—36) and slightly barbed, setae j4 and z6 shorter (23—27) and also with fine barbs. The other scutal setae (j5—6, z6 and J1) short (19) and smooth. A pair of small pygidial platelets and 3 pairs of lateral platelets are developed. Uncovered dorsum bears about 23 pairs of barbed setae from which the setae of J series are shorter (20 - 27), the remaining reach 39—43. On the same posterior margin of the body very long (53 - 60) and heavily barbed setae are developed.

Venter (Fig. 1B): Tritosternal lacinia barbed. Sternal plate very small, only 27 (27—40) long, 84 (78—90) wide at the level of sternal pores, anteriorly convex, posteriorly concave, without any structure. Only one pair of sternal pores situated on the plate. Three pairs of sternal setae very long (60 - 62) from which only the first pair is situated on the plate. Metasternal setae absent. Genital plate connected with sternal plate, 250 (243—250) long, 86 (78—92) wide at the level of genital setae, slightly sculptured. Genital setae measure 39. Anal plate 117 (109—117) long, 129 (121—130) wide, in its anterior part slightly sculptured. Anal setae situated at the level of the first quarter of the anal pore and similarly as the postanal seta measure 18. A pair of narrow paragenital, a pair of narrow metapodal and 2 pairs of small platelets near the posterior margin of the genital plate are developed. Peritreme situated ventrally, only 78—84 long, with characteristic poststigmatal bulbus, reaching up to the middle or anterior margin of coxa III. Uncovered venter with 12 - 13 pairs of setae from which the anterior ones are finer and shorter (27—40), the posterior ones more robust, barbed and longer (50 - 60).

Gnathosoma (Fig. 1C): Deutostornum with 11 denticles arranged in a single file. Gnathosomal setae smooth, 25 long, internal proximal hypostomal setae flagelliform and 39 long, external ones setiform and 35 long. Distal hypostomal setae spine-like, rough to barbed, 27 long. Tectum elongated, triangular, with smooth margin. All palpal setae setiform, apotele two-tined. Chelicera with segment I only 20 long, segment II about 235 long. Chelae rudimental.

Legs: Coxal setae barbed excluding proximal seta of coxa I and seta on coxa IV which are smooth. Distal seta of coxa I slightly enlarged and blunt. Posterior seta of coxa II very long (43). Some setae of legs slightly barbed.

Male (allotype № PÚ ČSAV 1635): Body ovoid, striated, 586 (513—640) long, 349 (330—417) wide.

Dorsum (Fig. 2A): Dorsal plate 528 (484—533) long, 270 (255—270) wide, reaching near the posterior margin of the body, finely punctated. In the anterior quarter it is broad, at the level of anterior margin of coxa III strongly narrowed and forming thus lateral corniculi. Twelve pairs of setae developed on the plate. Setae j1 situated anteriorly to the plate. In the posterior part of the plate one unpaired seta is developed in the allotype and some paratypes. The anterolateral setae and a posterior pair of setae are longer (20—27) and slightly barbed, the median setae shorter (12—18) and smooth. About 14 pairs of barbed setae developed on unarmed dorsum from which the anterior and lateral ones are shorter (27—31), the posterior ones very long (35—40) and stout.

Venter (Fig. 2B): Tritosternal lacinia barbed. Ventral armature divided. Genitoventral plate 211 (203—227) long, 121 (112—121) wide at the level between coxa II and III, with open reticular pattern anteriorly, and laterally compressed lines posteriorly. Four pairs of setae (13—16) and one pair of pores between the first and second pairs of these setae situated on the plate. Ventro-anal plate 204 (177—204) long, 149 (130—164)

wide, with reticular pattern. Seven setae, including anal and postanal setae, smooth or with very fine barb near the apex, situated on the plate. Two pairs of similar setae situated laterally to the plate. All these setae measure 15—17. A pair of longer barbed setae (34) situated at the level of cribrum. About 4 or 5 pairs of stout barbed setae (38—42) situated on the posterior body margin. Laterally to the anterior margin of ventro-anal plate 2 pairs of rounded metapodal platelets are developed. Peritreme 115 long, reaching up to the mid-level of coxa II, with poststigmatal bulbus as in female.

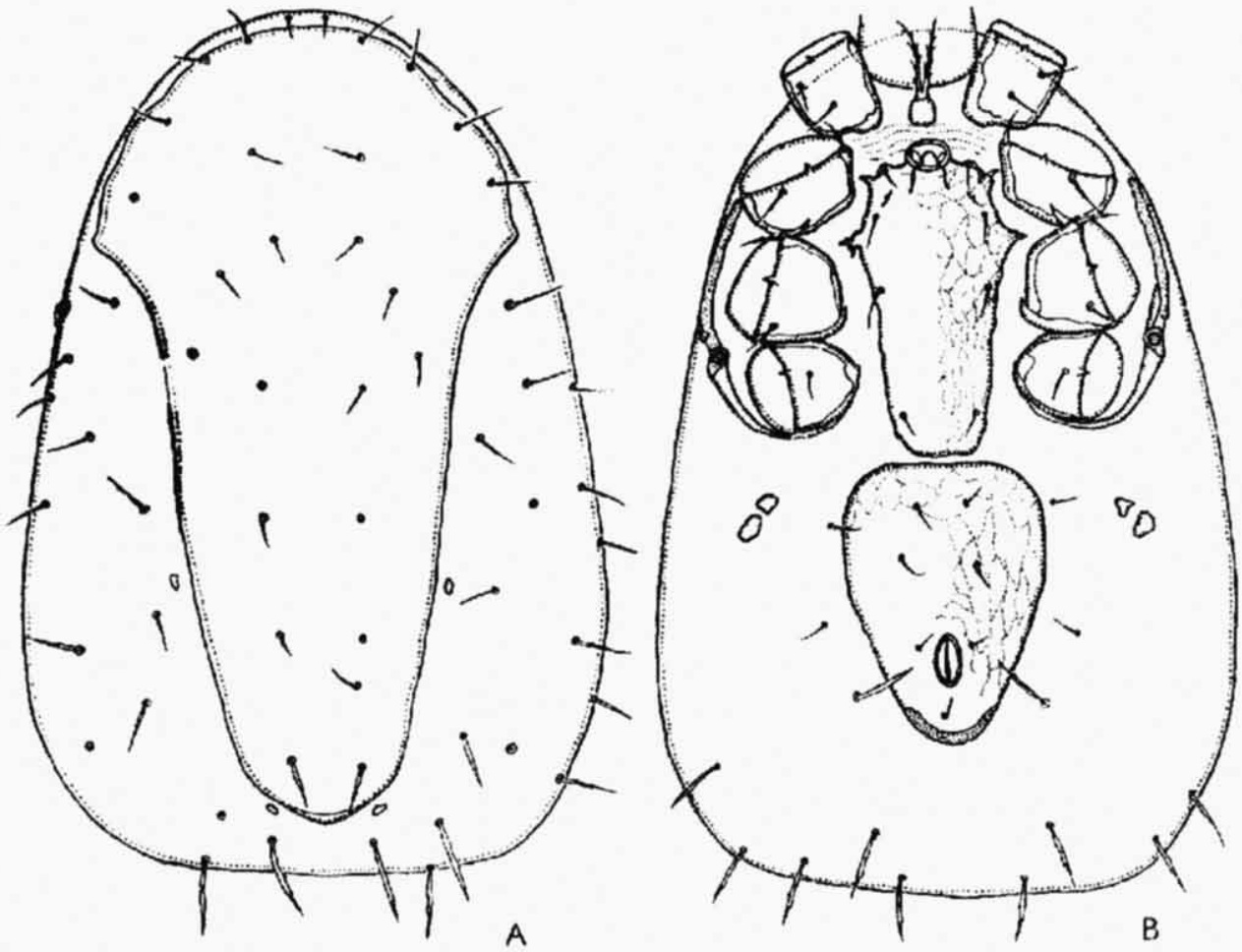

Fig. 2. *Dermanyssus antillarum* sp. n., male: A — dorsal view, B — ventral view.

Gnathosoma: All palpal and gnathosomal setae smooth. Gnathosomal setae short (27), internal proximal hypostomal setae flagolliform, 70 long, external ones only 23 long. Distal hypostomal setae setiform and smooth, 63 long. Spermatodactyl measures 75. Tectum with slightly serrated margin, slender and tongue-shaped.
Legs: Coxal setae and setae of legs as in female. (The distal seta of left coxa I setiform.) Posterior seta of coxa II only 34 long. Genu and tibia III and IV bear ventrally one stout barbed spine-like seta 16 long (Fig. 1D). Tarsi III and IV bearing a modified ventral seta forming a stout, blunt, posteriorly directed process, as described in *Dermanyssus furalloni* Nelson et Furman, 1967.
Deutonymph: Body length 372 (368—746), width 252 (251—513).
Dorsum (Fig. 3C): Dorsal plate of similar form as in female, 266 long, 172 wide, without remarkable sculpturing, bearing 9 pairs of setae. Seta j1 anterior to the plate. Uncovered dorsum with about 20 pairs of setae. The setae of the j and J series and z5—6 shorter (12—16) and smooth, the other setae longer (27—32) and barbed. Some setae of the posterior body margin very stout, long (78—86) and barbed. Two pairs of small platelets

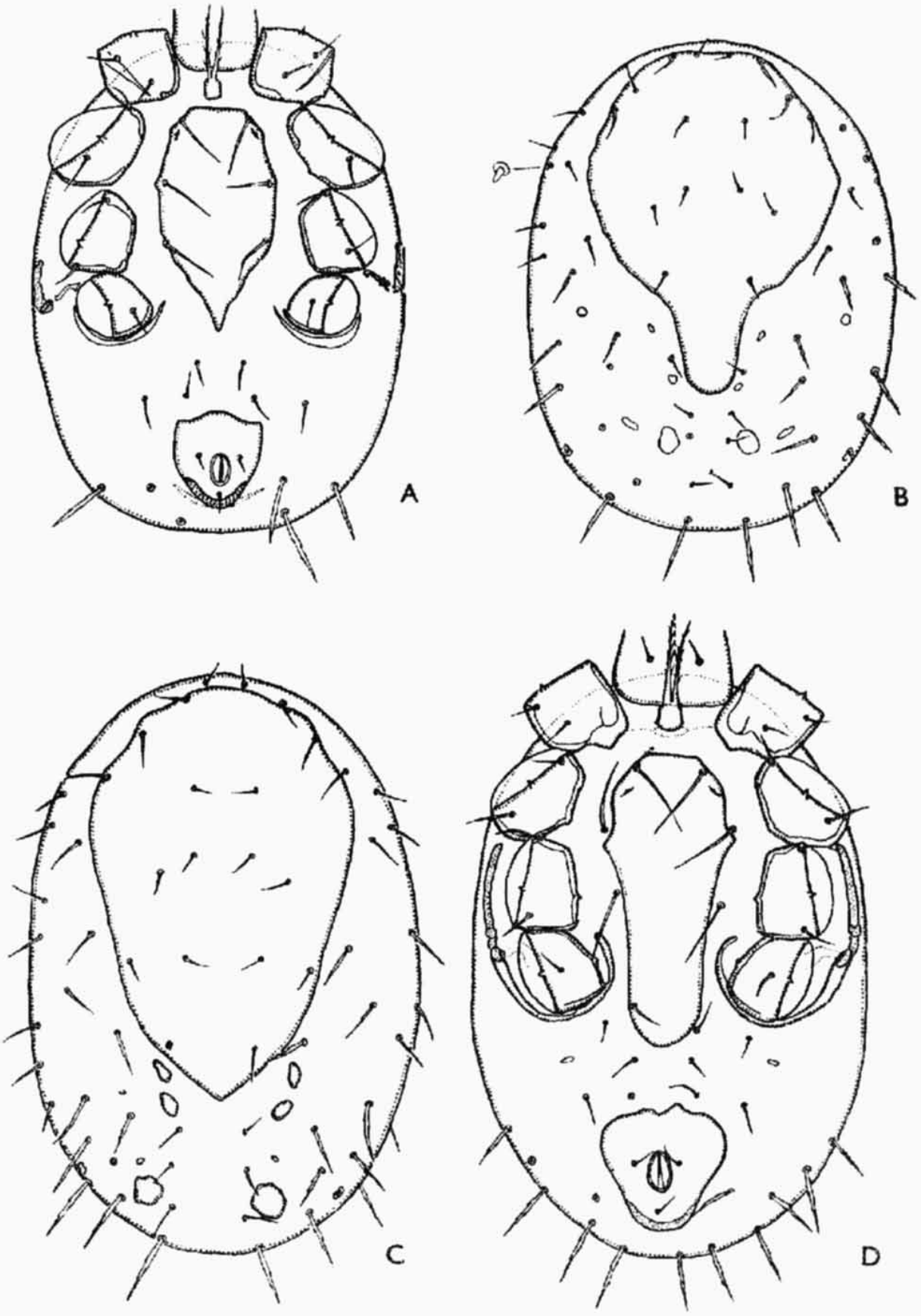

Fig. 3. *Dermanyssus antillarum* sp. n.: A — protonymph, ventral view, B — protonymph, dorsal view, C — deutonymph, dorsal view, D — deutonymph, ventral view.

near the posterior margin of the plate and a pair of platelets in the posterior part of opisthosoma developed as in female.

Venter (Fig. 3D): Tritosternal lacinia barbed. Sternal plate 168 long, 106 wide, without any sculpture. Three pairs of longer (40—47) and one pair of short (16) smooth setae developed on the same margin or out of the plate. A pair of sternal pores situated between the first and second pairs of sternal setae. Anal plate 78 long, 70 wide, anal and postanal setae smooth. Four pairs of short smooth setae (16—20) developed between the sternal and anal plates. Laterally to the posterior part of anal plate a pair of longer (31) barbed setae developed. Posterior body margin with about 6 stout, long (47) barbed setae. Peritreme 67 long, reaching up to the anterior margin of coxa III, with a poststigmatal bulbus and a fine posterior part.

Gnathosoma: Distal hypostomal setae spine-like and barbed, the other gnathosomal and palpal setae smooth. Chelicerae as in female.

Legs: Coxal setae as in female. Distal seta of coxa I setiform. Posterior seta of coxa II 30 long. Some setae of legs with fine barbs.

Protonymph: Body length 313 (313—625), width 235 (235—470).

Dorsum (Fig. 3B): Podonotal plate 220 long, 165 wide, with posterior end narrowly attenuated, extending to the middle distance between setae J1 and J3. It bears 8 pairs of setae including j1 which are situated at the same anterior margin of the plate. The setae of the j and J series and z5 are short (10—13) and smooth, the other ones longer (15—23) and with a fine barbs. Some stout, long (40—43) and barbed setae on the posterior body margin are developed. At the place of humeral poros a short (4) setiform structure is present. One pair of pygidial and 3 pairs of mesonotal platelets are developed.

Venter (Fig. 3A): Tritosternal lacinia barbed. Sternal plate 137 long, 78 wide, with 3 pairs of smooth setae (28—31) and 1 pair of pores near the first pair of sternal setae. Anal plate 57 long, 52 wide, anal and postanal setae smooth. Between sternal and anal plates 3 pairs of smooth setae (16—19). Three pairs of stout barbed setae (33—45) at the posterior body margin. Peritreme very short (21), reaching up to the middle of coxa III, with distinguishable posterior part.

Gnathosoma: Distal hypostomal setae spine-like and barbed, the other gnathosomal and palpal setae smooth. Chelicerae as in female.

Legs: Coxal setae as in female but all setiform. Some setae on legs barbed.

Dermanyssus antillarum sp. n. is very close to American species *D. triscutatus* Krantz, 1959 and *D. americanus* Ewing, 1922. The female of the new species differs from *D. triscutatus* in the absence of metasternal setae and in the form of sternal plate, from *D. americanus* in the form of dorsal plate, and from both species in the presence of strong barbed setae on the posterior body margin and in the spine-like barbed distal hypostomal setae. The male is characterized by the presence of a ventral process on tarsus III and IV similarly as *D. faralloni* Nelson et Furman, 1967 but differs from the latter in the presence of a spine-like seta on genu and tibia III and IV and especially in divided ventral armature.