NUHIVABATES N. GEN., AND TWO NEW SPECIES, *N. NUKUHIVA* N. SP. AND *N. HIVAOA* N. SP. FROM MARQUESAS ISLANDS (ACARI: ORIBATIDA: MYCOBATIDAE)

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NUHIVIBATES
MYCOBATIDADE
TAXONOMY
SEXUAL DIMORPHISM
MARQUESAS ISLANDS

SUMMARY: A new genus and two new species of Oribatida, *Nuhivabates nukuhiva* n. gen., n. sp. and *N. hivaoa* n. sp. from the Marquesas Islands, French Polynesia, are described and illustrated based on adult specimens. *Nuhivabates nukuhiva* n. sp. is recorded from Nuku Hiva Island from the northern part of the archipelago, and *N. hivaoa* n. sp. from Hiva Oa Island in the southern part of the archipelago. *Nuhivabates* is considered a member of the Mycobatidae Grandjean. The two new species show distinct sexual dimorphism, with differences in size, position and number of notogastral porose areas, and males with a pair of posterior tubercles.

NUHIVIBATES
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DIMORPHISME SEXUEL
ÎLES MARQUISES

RÉSUMÉ : Un nouveau genre et deux espèces nouvelles des Îles Marquises (Polynésie française), *Nuhivabates nukuhiva* n. gen., n. sp. et *N. hivaoa* n. sp. sont décrits sur des individus adultes. *Nuhivabates nukuhiva* n. sp. provient de Nuku Hiva, île de la partie nord de l'archipel et *N. hivaoa* n. sp. de Hiva Oa, île de la partie méridionale de l'archipel. *Nuhivabates* est un nouveau genre de la famille des Mycobatidae Grandjean. Les deux nouvelles espèces montrent un dimorphisme sexuel : différence de taille, position et nombre des aires poreuses notogastrales, paire de tubercules postérieurs des mâles.

The Marquesas Islands are an isolated group of 12 volcanic islands in the Southeastern Pacific Ocean, located between 7°53′ and 10°35′S and 138°25′ and 141°27′W, and are one of the five archipelagos of French Polynesia. The islands range in age from 1.3 to 6 million years. They are positioned about 1600 km northeast of Tahiti in the Society Islands and 4850 km from the west coast of Mexico. The fauna of these islands is poorly known. JACOT (1934) described the first oribatid mites from Marquesas Islands and noted the endemic nature of the fauna and its relations with the fauna of New Zealand, East Indies and the Hawaiian Islands. NIEDBALA (1998) reported on seventeen species, including five new species on Marquesas Islands, in his investigation on ptyctimous mites of the Pacific Islands. SELLNICK (1959) described the oribatid fauna of southeastern Polynesia, based on specimens from the Mangarevan Expedition, but this did not encompass the Marquesas Islands. HAMMER (1967, 1970, 1971, 1972, 1973)

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investigated the oribatid fauna of many islands in the South Pacific, including New Zealand, Tonga and Tahiti in the Society Islands, but did not include the fauna of the Marquesas Islands in her review of the Oribatida of the Southern Pacific (Hammer 1982).

The purpose of this paper is to describe adults of new species in the newly proposed genus, *Nuhivabates,* from the Marquesas Islands. We provide evidence for placing this genus in the Mycobatidae (Ceratozetoidea). Other genera in this family known from New Zealand, West Samoa and Easter Islands include *Anellozetes* Hammer, *Cryptobothria* Wallwork, *Mycozetes* Spain, *Neomycobates* Wallwork and *Punctoribates* Berlese (Hammer 1967, 1970, 1973; Luxton 1985).

Material and Methods

Morphological terminology used in this study follows that developed by F. Grandjean (see Travé & Vachon (1975) for references).

The specimens were studied by scanning electron microscope (SEM, JEOL JSM-5200). All measurements, other than for porose areas and axillary saccule of the subcapitulum, were made by digital image recording system for the scanning electron microscope (SemAfore 4). The drawings were made with aid of a camera lucida attached to a compound microscope.

The following conventions of description and measurement are used: *prodorsal setae: ro*, rostral seta; *le*, lamellar seta; *in*, interlamellar seta; *ex,* exobothridial seta; *ss*, sensillus; *total length*, measured from tip of rostrum to posterior edge of notogaster; *notogastral length to width ratio*, measured when viewed perpendicular to circumgastric scissure; *leg setal formula*, famulus is included in tarsal setal count on leg I and solenidial counts are in parentheses.

The unideficient nomenclature for notogastral setae is used herein. Synonymies of this nomenclature with the holotrichous nomenclature based on probable homologies among Grandjean's notogastral setal nomenclatures, are outlined by R. A. Norton in Balogh & Balogh (1988, 1992).

Abbreviations for collections: ZMT, Zoological Museum, University of Turku, Finland; CNC, Canadian National Collection of Insects and Arachnids, Research Branch, Agriculture and Agri-Food Canada, Ottawa, Canada.

Nuhivabates n. gen.

Type species: Nuhivabates nukuhiva n. sp.

Diagnosis: Adults are unique among the Mycobatidae in having the following combination of character states. Genal tooth fused to lateral margin of rostrum so that only carina of tooth evident and genal incision lacking. Tutorium wide, with distal cusp. Pedotectum I with convex dorsal margin. Custodium absent. Circumpedal carina extending anteriorly to epimere I. Pteromorphs in shape of blunt equilateral triangle, projecting ventrally; line of desclerotization (hinge) present. Ten pairs of small, smooth notogastral setae. Distinct sexual dimorphism present, males with pair of posterior tubercles, each bearing porose area. Sexually dimorphic octotaxic system present: females with five to seven pairs of porose areas, males with multiple porose areas. Posterior notogastral tectum broad, without overlapping lobes.

Description: Poronotic, brachypyline oribatid mites, with character states of the Mycobatidae (Grandjean 1954). *Adult:* Granular cerotegument restricted to region between pteromorphs, pedotectum I, tutorium, and lateral body wall. Rostrum convex, margin medially concave, with lateral dens (Fig. 1, Plates II; A & IV; F). Rostral seta barbed, directed anteromedially. Lamellae well developed, translamella absent. Lamellar cusp with lateral teeth. Lamellar setae borne anteriorly on cusp. Interlamellar setae barbed, not borne on ridge. Bothridium with medial and lateral scales (Plate II; F). Sensillus clavate (Fig. 1, Plate II; F). Porose area Ad present. Genal tooth fused to lateral margin of rostrum so that only carina of tooth evident and genal incision lacking. Tutorium wide, with distal cusp, distal margin variable. Pedotectum I with convex dorsal margin. Porose areas Am, Ah present; Al not evident. Custodium absent, discidium present. Circumpedal carina extending anteriorly to epimere I. Posteriorly directed, semicircular carina present posterodorsal of acetabulum IV and close to margin of ventral plate and circumpedal carina. Postanal porose area pre-

sent. Dorsal apodemes (dorsophragmata) separate. Pteromorphs in shape of blunt equilateral triangle, projecting ventrally, movable, with line of desclerotization clearly evident, extending four-fifths length of pteromorph. Undivided posterior notogastral tectum present. Notogaster without medial process on anterior tectum**.** Lenticulus absent. Ten pairs of small, smooth notogastral setae. Lyrifissure *ia* positioned on pteromorph. Distinct sexual dimorphism present, males with pair of posterior tubercles, each bearing porose area. Sexually dimorphic octotaxic system present: females with five to seven pairs of porose areas, males with multiple porose areas; form and size of porose areas variable, even on same specimen. Six pairs of genital setae. Spermapositor (male genital sclerite) normal for family, approximately half length of genital plate, when measured in ventral view on slide-mounted specimens. Epimeral setal formula: 3-1-3-3. Subcapitulum without mental tectum. Gena without posteriorly directed tectum covering base of seta *m*. Seta *l'* of palptibia setose. Palp setal formula 0-2-1-3-9(1). Axillary saccule of the subcapitulum present. Tarsi tridactylous. Leg setation (I-IV), trochanters 1-1-2-1, femora 5-5-2-2, genua 3(1)-3(1)-1(1)-2, tibiae 4(2)-4(1)-3(1)-3(1) and tarsi 18(2)-15(2)-15-12. Dorsal integument of tibiae and tarsi I and II thickened, with dorsal ridges (Plate III; D). Genua I to III with ventrolateral spur. Tibiae I to III with dorsodistal spur. Femora I-IV laterally flatten with ventral carina. Tarsus IV with abaxial longitudinal groove dorsally, with seta ft'' positioned close to the distal edge of groove (Plate III; F). Seta *s* on tarsus I eupathidial.

Immatures: Unknown.

Classification: Within Ceratozetoidea, *Nuhivabates* is included in Mycobatidae on the basis of a developed posterior notogastral tectum, lamellar setae inserted on lamellar cusps, presence of a postanal porose area, porose area Aa positioned posterior to notogastral seta *c*, absence of prolamella, and absence of porose areas distoventrally and proximoventrally on tibiae and tarsi I to IV. The distinct sexual dimorphism of the notogaster in *Nuhivabates*, with males having a pair of posterior tubercles, is unique in the Mycobatidae. It is probable that the chamobatid species, *Xiphobates callipygis* Pavlitshenko, is also sexually dimorphic, as males have a pair of posterior tubercles, but only males have been described (Pavilitschenko 1991, 1994). Similar development of porose area bearing structures is found in the oripodoid genus *Mochloribatula* (Mochlozetidae), and the galumnid *Centroribates* (Norton & Alberti 1997). The sexually dimorphic octotaxic system, with males having many more porose areas than females and in a different arrangement is also found in the mycobatid genus *Zachvatkinibates*, and in the many genera in the Oripodoidea (Norton & Alberti 1997).

Nuhivabates n. gen. is unique in the Mycobatidae in having the following apomorphies: (1) the octotaxic system in females has more than 4 pairs of glands (Norton & Alberti 1997). This character state is found in the oripodoid family Mochlozetidae, but is rare in the Ceratozetoidea, and only known for the ceratozetid genera *Koreozetes* and *Trihumerozetes* (Norton & Alberti 1997) and *Jugatala tuberosa* Ewing (Behan-Pelletier 2000). (2) The genal tooth is fused to the lateral margin of rostrum so that only the carina of the tooth is evident and the genal incision is lacking. This character state is rare in the Ceratozetoidea, but is expressed in some species of *Melanozetes* (Ceratozetidae) (Behan-Pelletier 1986). (3) The abaxial longitudinal groove dorsally on tarsus IV, with seta ft'' positioned close to the distal edge of the groove, is more developed than in other Mycobatidae examined. A similar structure has been noted in *Anellozetes fusiformis* Hammer, described from Easter Island, and Hammer (1970) describes "... a strong chitinization on the dorsal side of tibia and tarsus. On tarsus it ends distally in a tip behind which there is stiff, thin spine or hair; a hollow can be seen below and in front of the chitinized tip**.**" Whether this groove is developed in other species of *Anellozetes* is unknown. Although *Anellozetes* was synonymized with the ceratozetid *Africoribates* by Balogh & Balogh (1992), we hesitate to accept this synonymy until the distribution of this longitudinal groove in included species has been studied. Furthermore, the development of the posterior notogastral tectum in *Anellozetes*, a character state absent from Ceratozetidae, is unclear.

Among Mycobatidae, *Nuhivabates* can be included in the subfamily Mycobatinae based on the presence of well-developed bothridial scales, almost complete

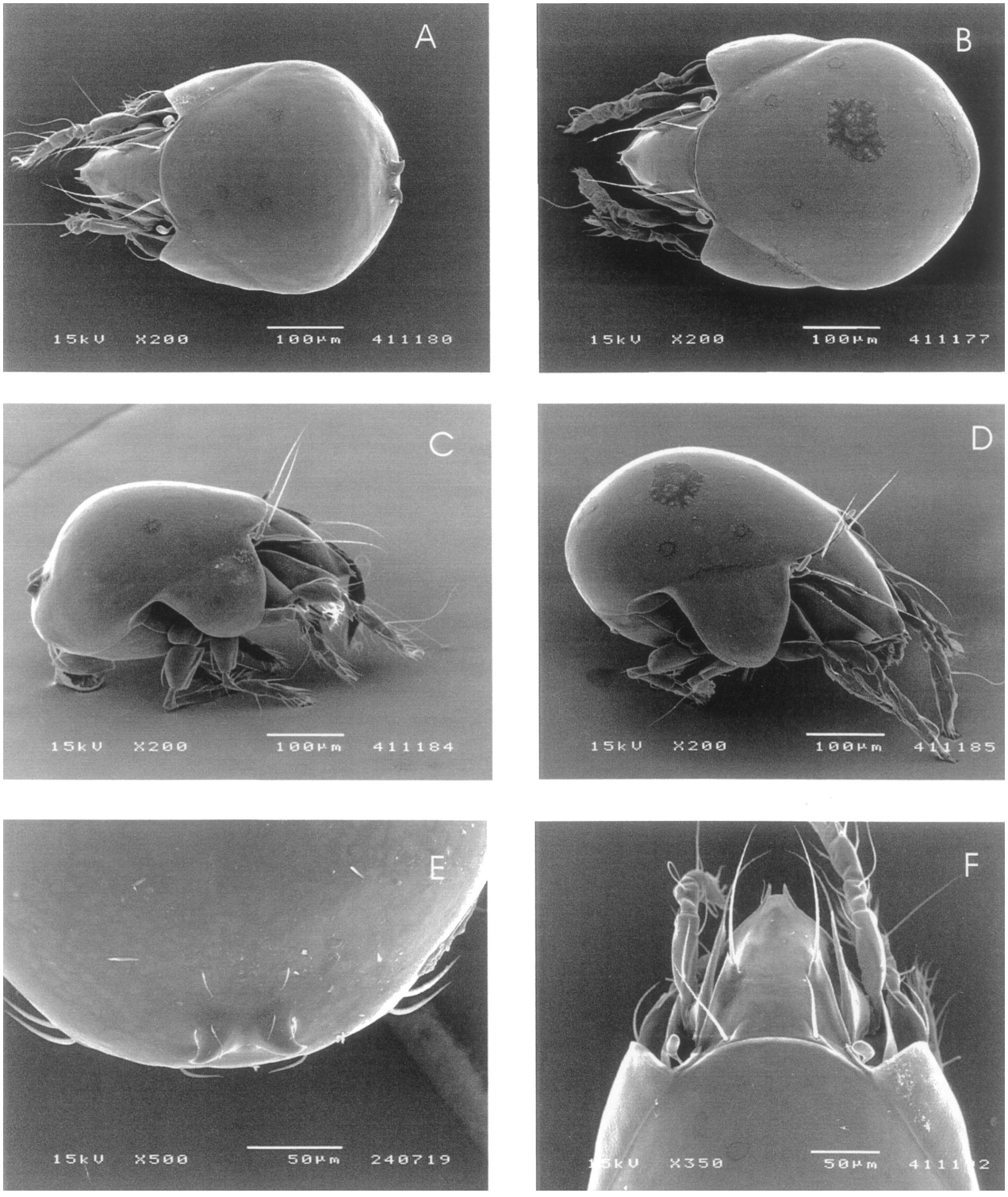

PLATE I: *Nuhivabates nukuhiva* n. sp. A. — Male, dorsal aspect. B. — Female, dorsal aspect. C. — Male, lateral aspect. D. — Female, lateral aspect. E. — Male, posterior part of notogaster. F. — Male, prodorsum in dorsal aspect.

line of desclerotization, and anterior notogastral tectum without medial projection (Grandjean 1954, Pavlitshenko 1994). Its systematic relationship to other genera in the Mycobatidae is outside the scope of this paper.

Etymology. *Nuhiva* is derived from the names of the islands, Nukuhiva and Hivaoe and the suffix *bates* is a common ending for Ceratozetoidea.

Nuhivabates nukuhiva n. sp.

(Figs. 1, 2, Plates I-III)

Material examined. Holotype (adult male) [ACA. ORI.POL 1.709] (in alcohol) and paratypes*:* 45 ♂ [ACA.ORI.POL 1.420] and 108 ♀ [ACA.ORI.POL 1.451] (in alcohol + on SEM stubs, in ZMT) and 4 paratypes (2 ♂ and 2 ♀, in CNC): Marquesas Islands, Nukuhiva, Toovii, 800 m, moss and epiphytes in cloud forest, 14.4.1988. Pekka T. Lehtinen leg..

Marquesas Islands, Nukuhiva, Toovii 800 m, epiphytes on *Weinmannia parviflora*, 11.4.1988, P. T. Lehtinen leg., 36 ♂ [ACA.ORI.POL 1.443] and 36 ♀ [ACA.ORI.POL 1.452] (in ZMT).

Marquesas Islands, Nukuhiva, Te Kou 1050 m, ferns (*Asplenium nidus*) epiphytic on *Pandanus*, 14.4.1988 P. T. Lehtinen leg. 5 ♂ [ACA.ORI.POL 1.252] and 3 ♀ [ACA.ORI.POL 1.453] (in ZMT).

Marquesas Islands, Nukuhiva, Toovii on vegetation of open field, 15.4.1988, P.T. Lehtinen leg. 2 ♀ [ACA.ORI.POL 1.560] (in ZMT).

Description.

Measurements. Total length: female (n = 5) 451 μm (range 429-462); male (n = 8) 447 μm (range 430-471). Mean notogastral width: female 314 μm (range 291-344); male 315 μm (range 298-332). Height of body, measured in lateral aspect: female 260 μm (252-259); male 247 μm (range 237-255).

Color. Medium brown.

Integument. Microtuberculate on posterior part of prodorsum, on notogaster between pteromorphs and on pteromorphs. Longitudinal, thin striae on lamellae, on ventral plate especially around genital plate, and on paraxial side of femora (Plate II; B, E & F, Plate III; C).

Prodorsum. Rostral margin with rectangular notch, about 11.2 × 8.72 μm, bordered by sharp teeth

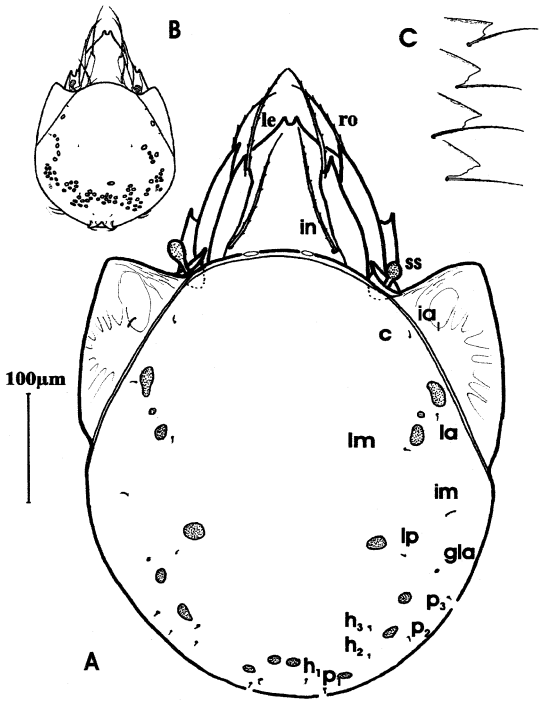

Fig. 1: *Nuhivabates nukuhiva* n. sp. A. — Female, dorsal view. B. — Male, dorsal view. C. — Tutorium, various shapes of cusps.

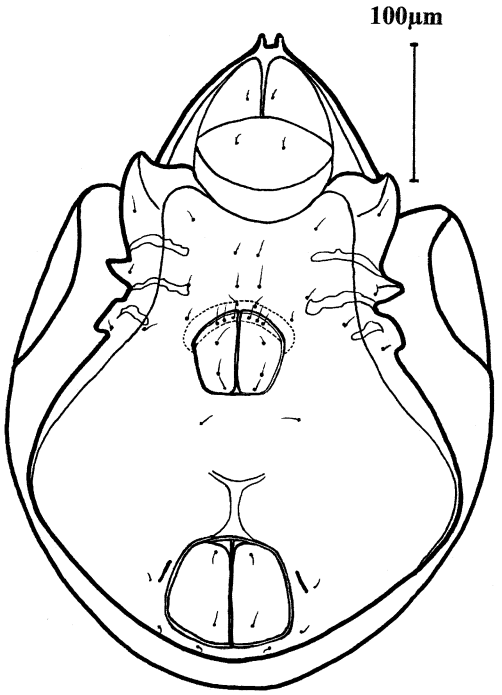

Fig. 2. — *Nuhivabates nukuhiva* n. sp. Female, ventral view.

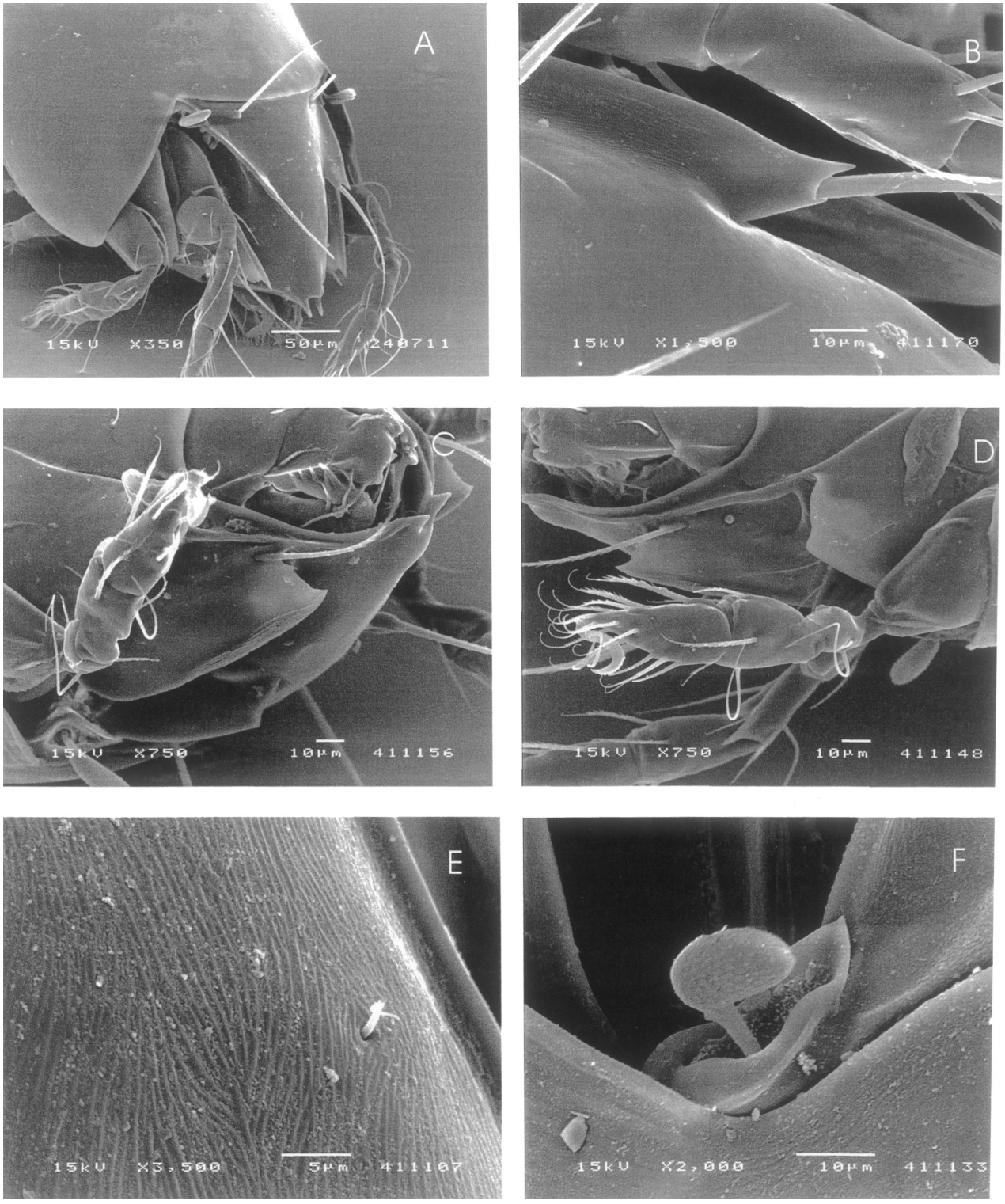

PLATE II: *Nuhivabates nukuhiva* n. sp. A. — Male, Prodorsum in dorsolateral aspect. B. — Female, tip of lamella. C. — Tutorium, female. D. — Female, pedotectum. E. — Male, sculpt of cerotegument around sete 4b, ventral aspect. F. — Sensillus, male.

(about 8.7 μm long) (Fig. 1, Plate I; A, B & F, Plate II; A). Insertion of rostral setae at base of tutorial cusp; *ro* (94 μm long) barbed, strongly curved medially, extending beyond tip of rostrum (Plate I; F). Lamellae long (86 μm) and broad (13.8 -15.1 μm), extending to middle of prodorsum. Cusp of lamellae about 17.6-19.5 μm long, ending in short (5-6 μm), sharp, lateral tooth (Plate II; B). Setae *le* barbed, about 119 μm long, extending beyond the tip of rostrum (Plate I; A & B). Setae *in* barbed, about 115 μm long, erect, not reaching tip of rostrum (Plate I; C, D & F). Mutual distances between setae *in*— *in* and *le*— *le* approximately 69 μm and 62 μm, respectively. Setae *ex* short and smooth covered by pedotectum I. Sensillus about 21 μm long, with short stalk and barbed head. Bothridium with dorsomedial (*sdm*) and ventromedial (*svm*) scales forming sharp angle (Plate II; F).

Lateral aspect of podosoma. Genal carina extending to base of rostral tooth (Plate II; C & D). Tutorium about 96 μm long, extending to insertion of *ro,* cusp pointed anterodorsally, shape variable (Fig. 1; C). Circumpedal carina extending anterior to level of seta *1c*.

Notogaster. Notogaster of female slightly longer than wide; 1,1:1,0; that of male wider than long; 1,0:1,1. Notogaster of female convex posteriorly; that of male flattened posteriorly (Fig. 1; A & B, Plate I; C & D). Male with two terminal, horn-like tubercles, about 6 μm long x 24 μm wide (Plate I; A, C & E). Notogastral setae smooth and short; except setae *p1-p3* of male; of which setae *p1* long and curved medially, and the setae *p1* & *p2* strong, long and curved anterolaterally (Fig. 1; A & B, Plates I; E & III; A). Octotaxic system of female with 8 pairs of porose areas: with 2 pairs of Aa, Aa_1 anterior to seta *la*, equal in size to larger pair Aa_2, positioned between setae *la* and *lm*, with third, smaller porose area medial to seta *la*; porose areas A1 positioned medial to seta *lp*; 2 pairs of porose areas A2, one medial of seta p_3 and second medial of seta p_2; and 2 pairs of porose areas in A3 position, one pair anterolateral of seta p_1 and second pair anteromedial of seta h_1 (Fig. 1; A). Octotaxic system of male with about 30 pairs of porose areas, with anterior Aa positioned between setae *c* and *la*, separated from other 5 pairs in 'Aa cluster'; posterior part of notogaster with about 25 pairs of porose areas, including porose areas borne on horn-like tubercles (Fig. 1; B, Plate I; E). All porose areas, other than pair on tubercles, variable in size, shape and position in different specimens and even on same specimen.

Ventral region. Epimeral setae finely barbed. Genital setae g_{1-3} arranged at the same level on anterior of genital plate, setae g_4 positioned medially, setae g_5 positioned posterior to middle of plate, setae g_6 on posterior of plate; setae g_1 and g_2 reaching to base of setae *3a;* setae g_6 reaching to insertion of setae g_5. Aggenital, anal, and adanal setae smooth. Postanal porose area about 30 μm long and 5 μm wide.

Gnathosomal region. Setae *m* and *a* slightly barbed. Cheliceral digits toothed. On palptarsus solenidia *T* and *acml* fused distally (Plate III; B). Axillary saccule of the subcapitulum about 8 μm long.

Legs. Genu I, II with large, and genu III with smaller ventrolateral distal spurs (Plate III; E), tibia I-III with smaller dorsodistal spurs. Solenidia on tubercles on tibia and tarsus I. Solenidia and famulus on tarsus inserted proximally, famulus positioned distally to solenidion *T2.* Tarsus IV with abaxial longitudinal groove dorsally, with seta ft'' positioned close to the distal edge of groove (Plate III; F).

Nuhivabates hivaoa n. sp.

(Fig. 3-5, Plates IV-V)

Material examined: Holotype (adult male) [ACA. ORI.POL 1.708] (in alcohol) and paratypes; 40 ♀ [ACA.ORI.POL 1.454] and 32 ♂ [ACA.ORI.POL 1.245] (in alcohol + on SEM stubs) (in ZMT) and 4 paratypes (2 ♂ and 2 ♀, in CNC): Marquesas Islands, Hivaoa Mt. Temetius, 1000 m, soil at the base of hanging ferns, 27.4.1988, P.T.Lehtinen leg.

Marquesas Islands, Hivaoa Mt. Temetius, 1210 m, ferns and moss of wet rock wall in cloud forest, 19.9.1990, P.T.Lehtinen leg., 11 ♂ [ACA.ORI.POL 1.622] and 16 ♀ [ACA.ORI.POL 1.621] (in ZMT).

Description.

Measurements. Total length: female (n = 8) 417 μm (range 409-431); male (n = 8) 413 μm (range 405-436). Mean notogastral width: female; 279 μm (range 267-285); male 264 μm (range 259-272). Height of

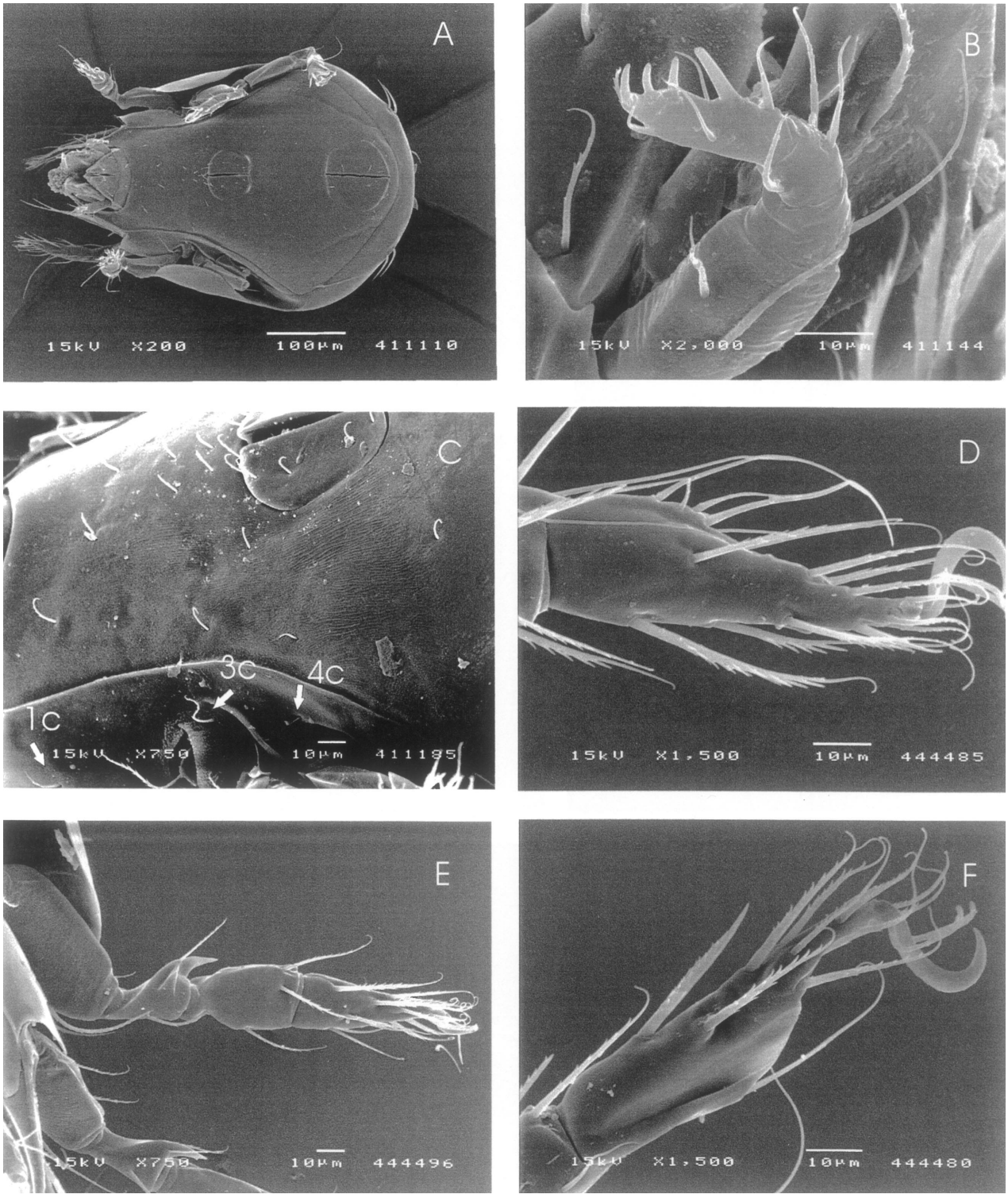

PLATE III: *Nuhivabates nukuhiva* n. sp., male (A:E) & female (F). A. — ventral aspect. B. — Palp, antiaxial aspect. C. — Coxisternal region, the outermost epimeral setae with numbers. D. — Tarsus I. E. — Leg II. F. — Female Tarsus IV.

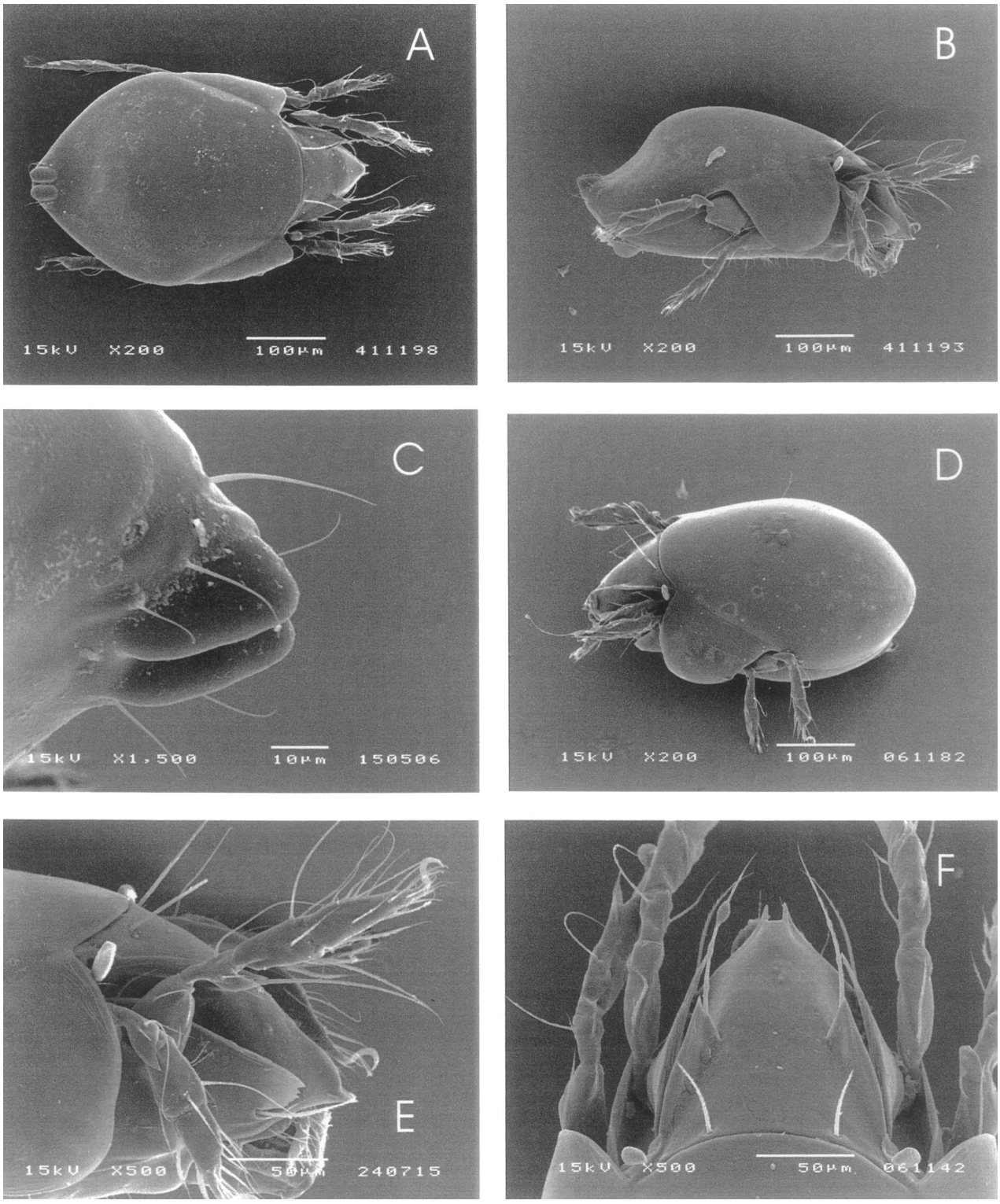

PLATE IV: *Nuhivabates hivaoa* n. sp. A. — Male, dorsal aspect. B. —. Male, lateral aspect. C. — Appendices of male C. — Male, lateral aspect. D. — Female, dorsolateral aspect. E. — lateral aspect of prodorsum. F. — Dorsal side of prodorsum.

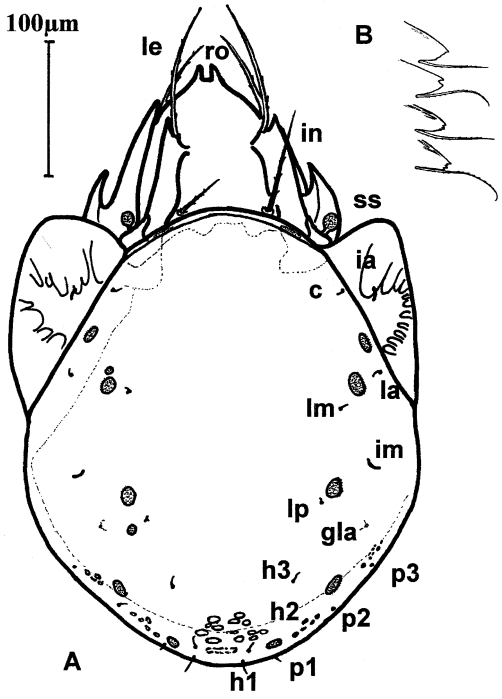

FIG. 3. — *Nuhivabates hivaoa* n. sp. Female. A. — Dorsal view. B. — Tutorium (different shapes of cusps).

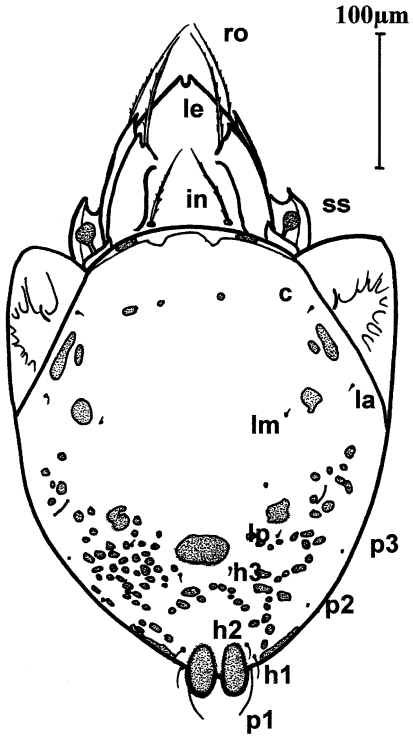

FIG. 4. — *Nuhivabates hivaoa* n. sp. Males, dorsal view.

body, measured on lateral aspect: female 217 µm (205-232); male 200 µm (range 178-219).

Color. Medium brown.

Integument. Microtubercules on prodorsum and anterior part of pteromorphs (PLATE V; C & D).

Prodorsum. Rostral margin with rectangular notch, about 7.5 × 8.6 µm, bordered by sharp teeth, about 8.6 µm long. Insertion of rostral setae at base of tutorial cusp; *ro* (58-69 µm) barbed, strongly curved medially, extending beyond tip of rostrum. Lamellae about 85.7 µm long extending to middle of prodorsum; outer margins directed dorsolaterally (FIG. 3; A, PLATE IV; F). Lamellae widest (about 22 µm) at base of cusp. Cusp 17.9-8.6 µm long, with small, sharp tooth (about 9 µm). Lamellar setae 86—94 µm long, barbed, extending beyond tip of rostrum. Mutual distance between setae *le — le and in — in,* about 65 µm and 58 µm, respectively. Setae *in* long (73-93 µm) and barbed. Setae *ex* short and smooth covered by pedotectum I. Sensillus about 18 µm, with short stalk and barbed head. Bothridium with scales *sdm* and *svm* forming sharp angle (PLATE V; C).

Lateral aspect of podosoma. Tutorium wide, with striations along dorsal margin; about 93 µm long, with broad cusp; shape of cusp variable in different specimens (FIG. 3; B). Pedotectum I broad and flat with blunt cusp. Circumpedal carina extending anterior to level of seta *1c*.

Notogaster. Notogaster slightly longer than wide: female: 1,14:1; male: 1,24:1. Notogaster of female convex posteriorly; that of male with concave depression posteriorly (PLATE IV; B & D). Male with two terminal tubercles, oval in dorsal aspect, triangular in lateral aspect; about 21 µm long x 30 µm wide (FIG. 4., PLATE IV, A & C). Notogastral setae short, except the setae *p1* and h1 and *h2* in male; with setae *p3* twice as long as setae *h1* and *h2*. Octotaxic system of female with 5 to 8 pairs of porose areas: of Aa cluster, Aa_1 anterior to seta la; one or two pairs of porose areas Aa_2 between setae *la* and *lm*; one or two pairs of porose areas A1 positioned lateral of seta *lp*; 1 pair of porose areas A2 posterolateral of setae h_3, and one pair of A3 lateral of setae h_2 (FIG. 3). Octotaxic system of male with variable number of porose areas, at least 30: one or two pairs of Aa cluster anterior of setae *la*; large, single, medial porose area (Am) between setae *lp*, variable in shape from oval to round

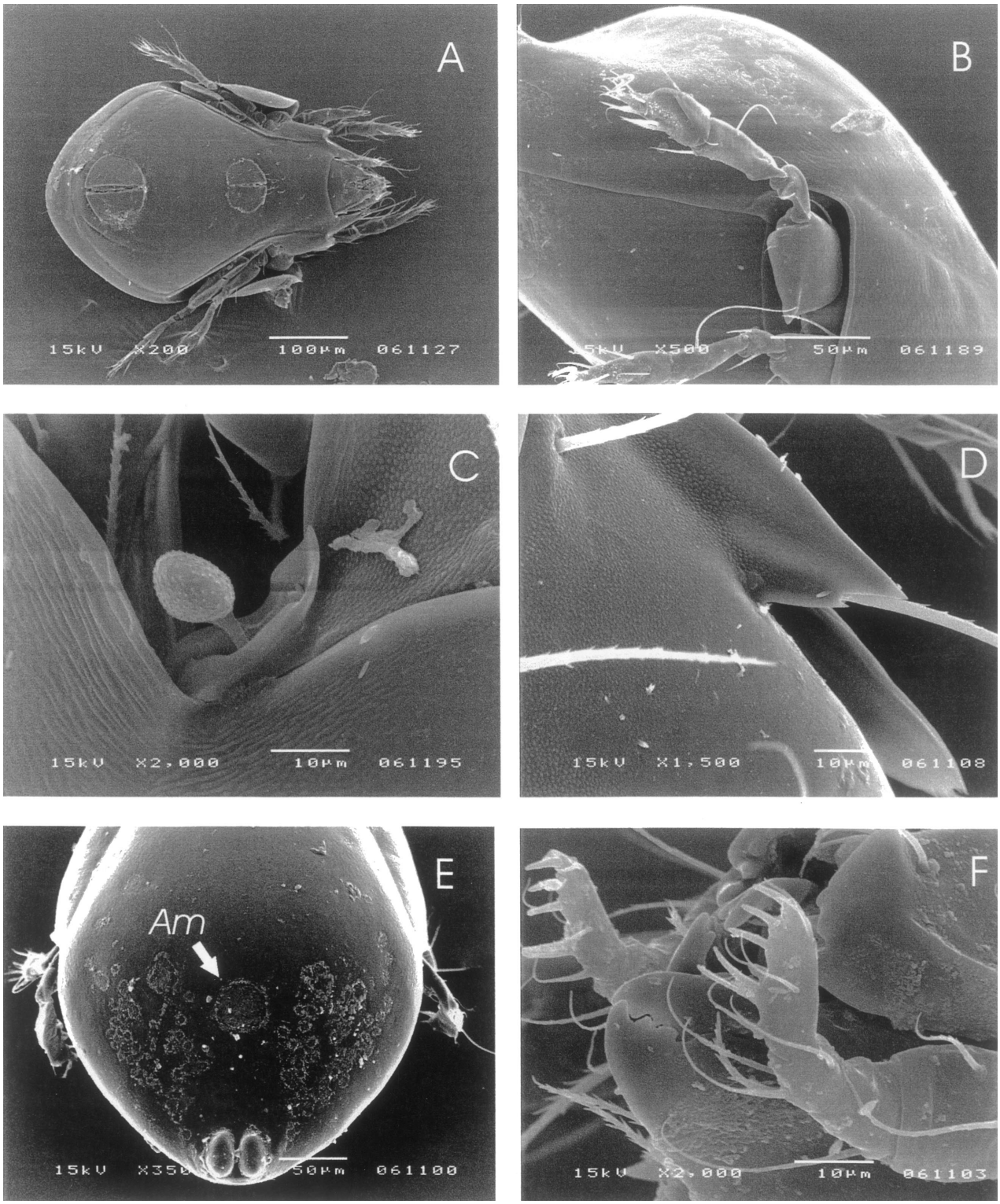

PLATE V: *Nuhivabates hivaoa* n. sp. A. — Female, ventrl view. B. —.Male, Leg IV. C. — Bothridium. D. — Cusp of lamella. E. — Posterior part of notogaster (Am= mediopostrerial porose area. F. — Antiaxial aspect of palp.

(FIG. 4., PLATE V; E); multiple pairs of porose area A2; pair of porose areas carried on posterior tubercles; porose areas A3 lateral to posterior tubercles and setae *h1*, either oval or divided into small, undefined porose areas; multiple porose areas in region of lyrifissure *im*, and lateral and posterior of A1 (FIG. 4).

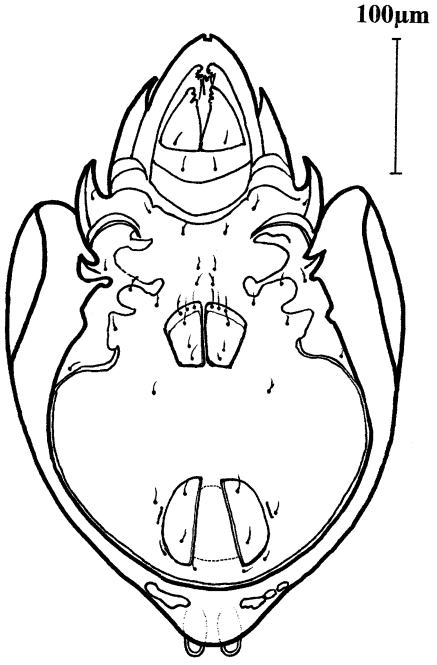

FIG. 5. — *Nuhivabates hivaoa* n. sp. Male, ventral view.

Ventral region (PLATE V; A). Epimeral setae (10-11 µm) slightly barbed. Genital setae arranged as in FIG. 5. Genital, aggenital, anal, and adanal setae finely barbed. Postanal porose area oval, about 25 µm long and 12 µm wide at maximum width.

Gnathosomal region. Setae *m* and *a* slightly barbed. Cheliceral digits toothed (PLATE V; F). Axillary saccule of the subcapitulum about 8 µm long.

Legs. Genu I and II with large and genu III with smaller ventrolateral spur (PLATE IV; E), tibia I-III with small dorsal spur. Femora I-IV flattened laterally, with ventral carina (PLATE IV; B). Solenidia on tubercles on tibia and tarsus I. Solenidia and famulus on tarsus inserted proximally, famulus positioned distally to solenidion *T 2*. Tarsus IV with abaxial longitudinal groove dorsally, with seta ft'' positioned close to the distal edge of groove (PLATE V; B).

Remarks: Nuhivabates hivaoa n. sp. differs from N. nukuhiva n. sp. in the shape of notogaster, broader lamellae, shape of the tutorial cusp, numbers and forms of porose areas in both sexes and shape, and size of posterior tubercles in males.

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