

## MALGACHEBATES PEYRIERASI N. GEN., N. SP. (ACARI: ORIBATIDA: PLASMOBATIDAE) FROM MADAGASCAR

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**ABSTRACT** – *Malgachebates peyrierasi* n. gen. n. sp., collected from Ankarongambe Forest Station, Tamatave province, mid-eastern Madagascar, is described and illustrated based on adult specimens. The new genus is easily distinguishable by the following combination of character states: rectilinear notogastral structure near dorsosejugal furrow; microsculpture of notogastral cuticle devoid of foveate pattern, only small acicula and furrows present; a pair of notogastral depressions; macropore opening operculate or not, situated directly on cuticular surface; opisthosomal gland and opening of podocephalic canal on large conical apophysis; upper surface of epimeres plate-like and at different levels; sejugal apodeme present; epimeral sejugal furrow deeper than other furrows; seven pairs of genital setae; aggenital setae absent; larval scalp with three gibbose areas separated by transverse furrows. **Key words** – Acari, Oribatida, Plasmobatidae, *Malgachebates peyrierasi*, new genus, new species, Madagascar.

### INTRODUCTION

In 1929, Grandjean established the genus *Plasmobates* with *Plasmobates pagoda* (type species), and concurrently also described the species *P. orbiculus*, *P. transvectus*, and *P. cribratus* (Grandjean, 1929). Subsequently, in 1931, the same author proposed the genus *Solenozetes* with *Plasmobates cribratus* Grandjean, 1929 as type species, and in 1961 the genus *Orbiculobates* with *Plasmobates orbiculus* Grandjean, 1929 as type species (Grandjean, 1931, 1961). In 1961 Grandjean also established the family Plasmobatidae to accommodate these genera. The work of Grandjean (1961) is very important for a clearer understanding of the group with respect to new terminology as well as for some corrections of his earlier works of 1929 and 1931.

The family Plasmobatidae, which has a pantropical distribution (Subías, 2009), was until recently represented

by 18 species in the above mentioned three genera. Until recently, the family Plasmobatidae was not known from Madagascar (Mahunka, 2002).

### MATERIALS AND METHODS

During the past 4 years we have studied a large number of specimens of the family Plasmobatidae from Africa (Betsch collection from Madagascar and Coineau collection from Gabon), deposited in the Muséum National d'Histoire Naturelle, Paris, France. The large number of specimens allowed intensive study using scanning electron microscopy, which helped us to gain an understanding of the complexity of structures and assisted our observations with light microscopy.

All specimens were collected from decaying plant debris using a standard Berlese–Tullgren funnel extractor, and preserved in 70% ethanol. Specimens

studied with a light microscope were macerated in lactic acid, and observed in the same medium using the open-mount technique (cavity slide and cover slip) described by Grandjean (1949), (see also Krantz and Walter, 2009). Drawings were made using an Olympus BHC compound microscope equipped with a drawing tube.

Specimens were also studied under a scanning electron microscope. Ethanol-preserved specimens were carefully washed in distilled water by sucking them several times into a Pasteur pipette. Specimens from which the cerotegument was to be removed were macerated in a warm 70% lactic acid solution for 7–15 days, before the cerotegument was carefully removed using fine needles; all specimens were then dehydrated in a graded ethanol series and dried in a critical-point apparatus. After mounting on aluminum stubs with double-sided sticky tape, specimens were gold-coated in a sputter apparatus.

Specimen measurements are defined as follows: total length, from tip of rostrum to posterior edge of notogaster; width, widest part of notogaster; in micrometers ( $\mu\text{m}$ ). Setal formulae of the legs include the number of solenidia (in brackets); tarsal setal formulae include the famulus (*e*).

Study of the tracheal system involved dissection of legs and monitoring of the specimen during the lactic acid maceration process (macerating in warm 70% lactic acid). Staining with chlorazol black allowed internal observation of the cotyloid-acetabular wall. Study of the podocephalic canal involved monitoring of the specimen during the lactic acid maceration process and staining with chlorazol black.

**Morphological terminology** – Morphological terms and abbreviations used herein are those developed by Grandjean (1928–1974) (cf. Travé and Vachon, 1975) as well as those used by Norton and Behan-Pelletier (2009). However, a number of specific morphological characters have not been previously described in detail and hence no terminology or abbreviations exist. For clarity we have included the following in the text and on the figures: acicula (*aci*); amorphous cement layer (*a.c.l*); amorphous porous layer (*a.p.l*); conical apophysis of opisthosomal gland (*apo.gla*); opening of podocephalic canal on large conical apophysis (*c.apo.p*); flat zone (*f.z*); longitudinal furrow (*fu*); gibbose areas (*gi*); macropores (*mp*); medial band (*m.b*); cauliflower-like microtubercles (*cau*); mushroom-like microtubercles (*mus*); notogastral depression (*n.d*); parallel furrows (*p.fu*); peripheral dentate ridge (*p.d.r*); podocephalic canal (*p.c*); rectilinear structure (*r.s*); rectilinear wall (*r.w*); smooth zone (*s.z*); transversal furrows (*t.f*); wax layer (*w.l*).

## Family PLASMOBATIDAE Grandjean, 1961

### *Malgachebates* n. gen.

**Diagnosis (adult female)** – The new genus is readily distinguishable by the following combination of character states: microsculpture on notogastral cuticle lacking foveate pattern; rectilinear structure near dorsosejugal furrow; notogaster with a pair of notogastral depressions; macropores directly on cuticular surface; opisthosomal gland and opening of podocephalic canal on large conical apophysis; plate-like epimeres, at different levels on top surface; sejugal apodeme present; sejugal furrow deeper; seven pairs of genital setae; no aggenital setae; larval scalp with three gibbose areas separated by transverse furrows (See Table 1).

**Type species** – *Malgachebates peyrierasi* (n. gen. n. sp.)

**Etymology** – Malgache is the French word for Malagasy, i.e. language or inhabitant of Madagascar.

### *Malgachebates peyrierasi* n. sp.

(Figs. 1–53)

**Material examined** – Holotype female and 10 paratypes (5 males, 5 females), mid-eastern Madagascar, Tamatave province, Ankarongambe forest (10 km E/SE of Ambohidray, 18°36'0" South, 48°18'0" East), altitude 900 m, dense humid forest with bamboo (diameter 5–8 cm), 9 June 1967, tube no. 865, 866, J-M BETSCH, coll.

Holotype and six paratypes, deposited in the Collection of the Muséum National d'Histoire Naturelle, Paris, France; two paratypes in Museum d'Histoire Naturelle, Geneva, Switzerland, and two paratypes in Natal Museum, South Africa; all specimens preserved in 70% ethanol.

**Etymology** – The species is dedicated in homage to Dr. A. Peyrieras, an entomologist in the team of French researchers who participated in the collecting missions in Madagascar.

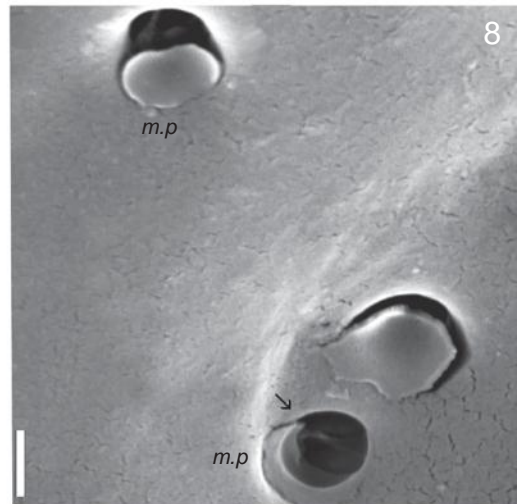
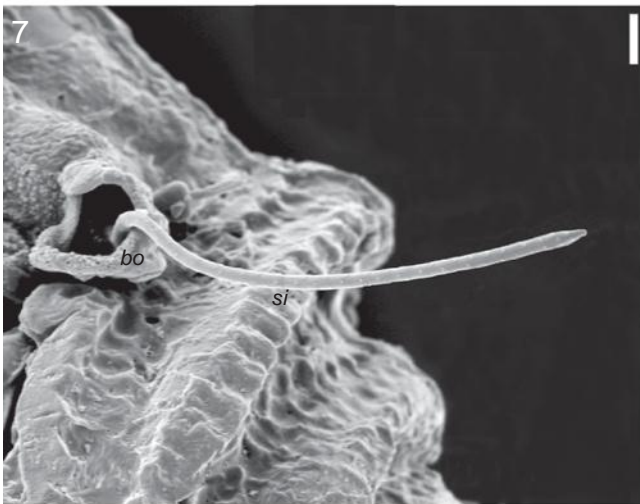
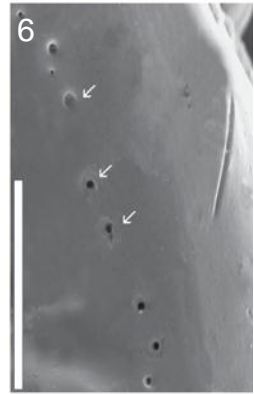
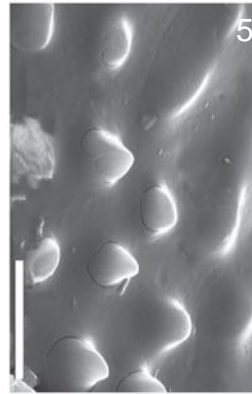
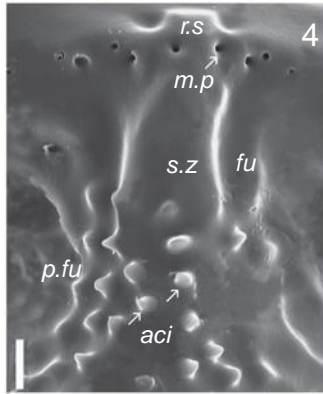
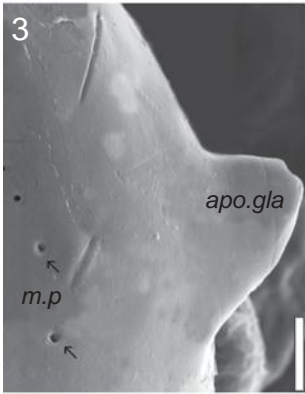
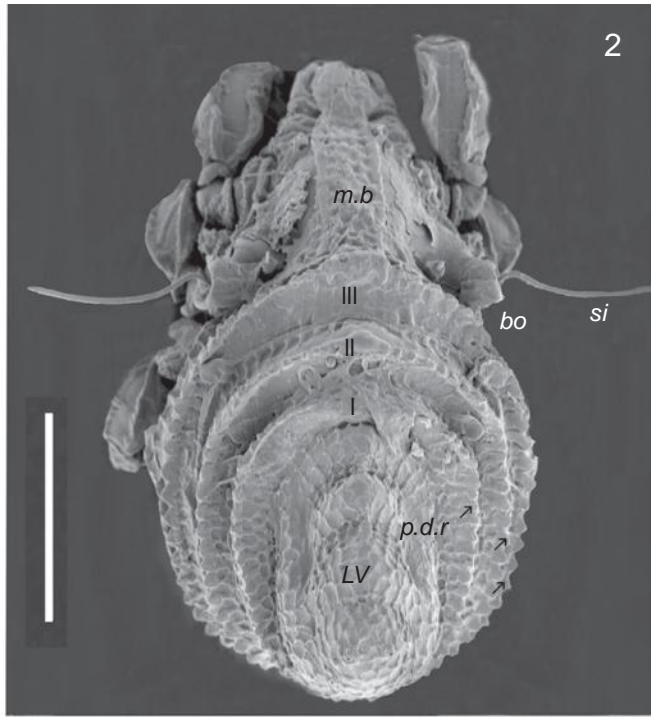
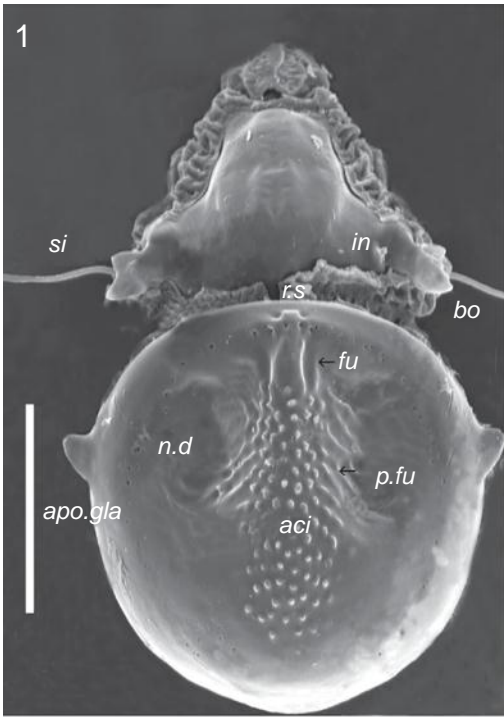
**Diagnosis (adult female)** – Characterized by the following combination of characters: cerotegument: amorphous porous layer, associated or not with mushroom-like microtubercles and cauliflower-like microtubercles; cuticle of notogaster smooth, with small acicula and furrows; anteromedial notogastral zone smooth, bordered on either side by a longitudinal furrow; sensillus filiform, minutely barbed; rostral seta forked; interlamellar seta forked; short conical apophysis of opisthosomal gland extending anteriorly; notogastral setae five pairs; epimeric

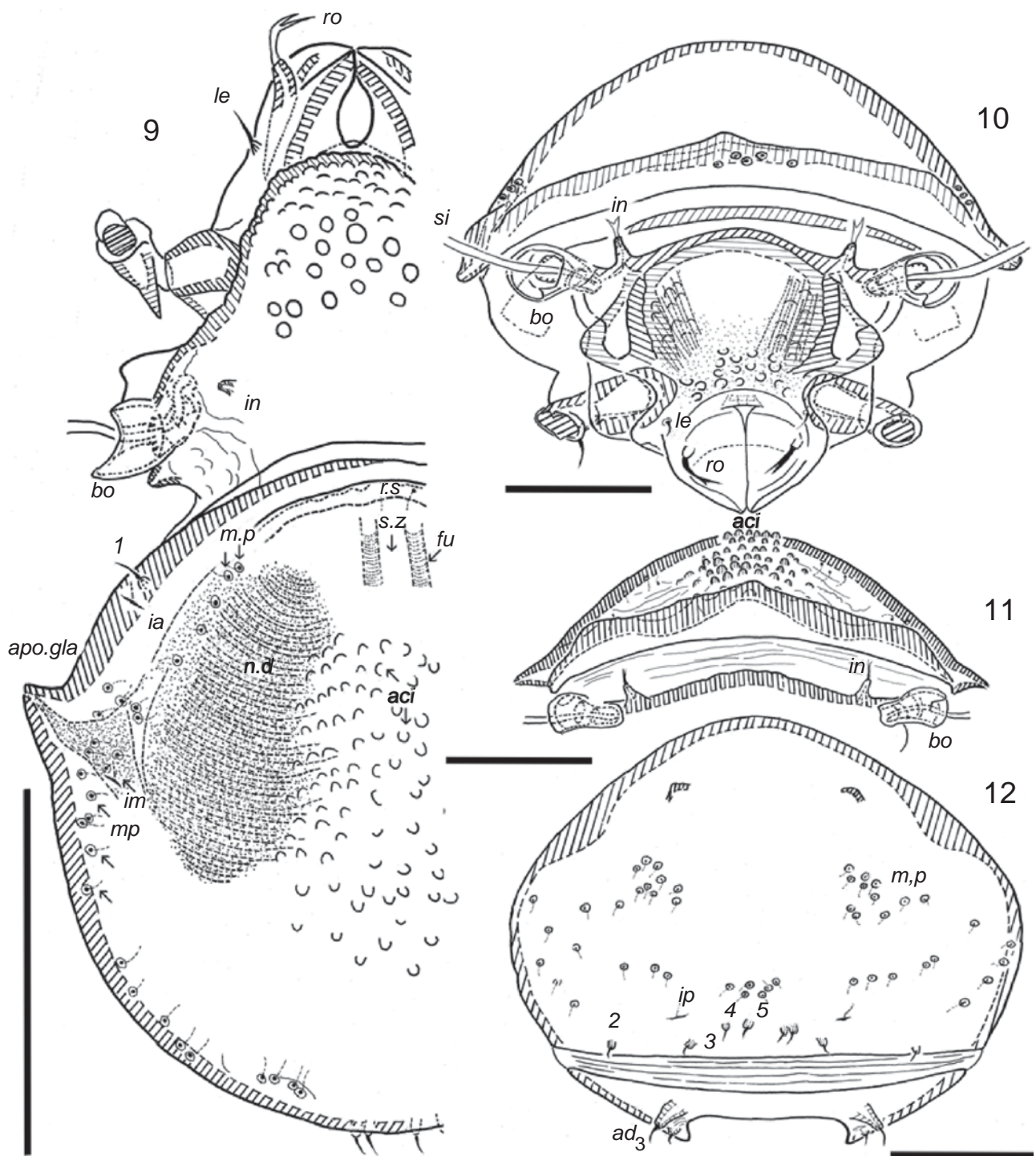
Table 1. Comparison of Plasmobatidae.

Characters	Genera			
	<i>Plasmobates</i> Grandjean, 1929	<i>Solenozetes</i> Grandjean, 1931	<i>Orbiculobates</i> Grandjean, 1961	<i>Malgachebates</i> <b>n. gen.</b>
Posterior end of prodorsal incision	Triangular	Rounded	More or less triangular	Rounded
Notogastral shape	Globe-shaped without depression	Globe-shaped without depression	Globe-shaped without depression	Globe-shaped with a pair of prominent antiaxial depressions
Microsculpture notogastral cuticle	Foveate pattern	Foveate pattern	Smooth; punctate	Smooth; anterior zone with longitudinal and parallel furrows and small aciculae
Region of dorsosejugal scisure	Without particular structure	Without particular structure	Protruding chitinous spines	Rectilinear structure
Macropore openings	On fovea	?	Directly on cuticular surface	Directly on cuticular surface
Apophysis of opisthosomal gland	Flat, triangular	Not flat, irregular, tuberculated	Elongated	Conical
Apophysis of podocephalic canal	Absent	Absent	Absent	Present
Sejugal apodeme	Present	?	Absent	Present
Sejugal furrow	Superficial	?	Deeper	Deeper
Opening podocephalic canal	Pore simple	?	Pore simple	On large apophysis
Genital setae	Seven pairs	?	Six pairs	Seven pairs
Aggenital setae	One pair	?	Nil	Nil
Larval scalp	Three transversal furrows	?	One transversal furrow	Three transversal furrows
Tritonymphal scalps	Not incised	?	Incised	Not incised

?, not reported, nor figured by Grandjean (1929, 1931, 1961).

Figs. 1–8. *Malgachebates peyrierasi* **n. gen. n. sp.**, adult, SEM – 1. dorsal view without scalp and cerotegument; 2. dorsal view with scalps and cerotegument; 3. dorsal view of apophysis of opisthosomal gland; 4. notogaster anterior zone, general view of microsculpture; 5. aciculate zone; 6. macropores; 7. bothridium and sensillus; 8. macropores, detail; with and without opercula. Abbreviations: see Materials and methods. Scale: 1, 2 = 100 µm; 3–7 = 10 µm; 8 = 1 µm.





Figs. 9–12. *Malgachebates peyrierasi* n. gen. n. sp., adult – 9. dorsal view; 10. prodorsum frontal, detail; 11. notogastral detail, frontal view; 12. posterior view. Abbreviations: see Materials and methods. Scale: 9 = 100 μm; 10 = 40 μm; 11, 12 = 50 μm.

furrows large; infracapitulum a short suckorial tube; large, plate-like mentum; scalps with alveolate reticula; medial band with polyhedric microsculpture; nymphal scalp with prominent dentate peripheral ridge.

**Description** – Measurements: SEM (without scalps) 302  $\mu\text{m}$  (270–330) by 204  $\mu\text{m}$  (180–230). Light microscopy (without scalps) 320  $\mu\text{m}$  (310–350) by 210  $\mu\text{m}$  (180–250). No differences between males and females. Adult with scalps of preceding stages.

**Shape** – Elongate oval gibbose areas (with scalps); without scalps hardly ovoid; central notogastral zone elevated, bordered laterally by depressions (Figs. 1 and 9). Sex-ratio 1 : 1.

**Colour** – Specimens without cerotegument and scalps: light brown to dark brown.

**Cerotegument (scalps not considered)** – Amorphous layer, present all over, significant, thick, complex, composed of wax layer (*w.l*) and amorphous cement layer (*a.c.l*) (Norton *et al.*, 1997) (Fig. 21).

**Wax layer** – transparent (Norton *et al.*, 1997); 0.3–0.5  $\mu\text{m}$  thick (Fig. 21); disappears in well-macerated specimens.

**Amorphous layer** – Not associated with porous, rugous layer, 0.5–1.5  $\mu\text{m}$  thick, thickened (Fig. 36) on prodorsum (Fig. 9), on anterior zone of bothridia (Fig. 41) and tubercle of seta *in* (Fig. 40). Flat zones (*f.z*) present on epimeres, genital plate and surrounding zone, and anal plate and surrounding zone (Fig. 31). Associated with mushroom-like microtubercles (*mus*) connected by irregular polygonal reticulae (Figs. 22 and 23); diameter 0.3–1.1  $\mu\text{m}$ , height 0.2–2.2  $\mu\text{m}$ . Distribution: posterior region behind bothridia, ventral zone and epimeres; cauliflower-like microtubercles (*cau*) (Figs. 20 and 24) never isolated, always associated with *mus.*; diameter 1–2.3  $\mu\text{m}$ , height 0.8–2.5  $\mu\text{m}$ . Distribution: infracapitulum, marginal epimeric area, and epimeric furrows (Figs. 18 and 31).

**Flat zones (f.z)** (Fig. 19) – Amorphous, rugous. Distribution: infracapitulum at level of setae *h*; epimeres 1, 2 (absent on sejugal furrow), 3 (small paraxial zone); genital plates and surrounding zone; anal plate and surrounding zone (Figs. 6 and 18).

**Legs** (excluding trochanter) covered by amorphous layer, with prominent folds (Fig. 37). Trochanter covered by mushroom-like and cauliflower-like microtubercles.

**Cuticle** – Posterior zone of prodorsum smooth; foveate pattern in central zone with small acicula (Figs. 1 and 9).

**Notogaster** smooth; paraxial anterior zone with a pair of furrows (*fu*) (Figs. 1 and 9), small acicula (*aci*) between notogastral depressions (*n.d*), and parallel furrows (*p.fu*) (Figs. 1, 4, 5, and 9). Macropores, (*mp*) directly on cuticular surface, circumgastric distribution (Figs. 1 and 9).

**Setation** – Lamellar, notogastral, subcapitular, epimeric, genital, and anal setae spiniform; rostral seta forked (Figs. 9 and 10); interlamellar seta small, forked, minutely barbed (10–12  $\mu\text{m}$ ) (Figs. 38 and 39).

**Prodorsum** – Specimens with scalps (Figs. 2 and 37) – medial band (*m.b*) on central part up to rostrum. Specimens without scalps (Figs. 1, 9, 10, and 26) – central zone, gibbose (Fig. 1), with microtubercles and slightly foveate. Internal muscular insertion, clearly visible (Fig. 26).

**Interlamellar seta (*in*)**, forked, inserted on large protuberance, extending forward, situated far from bothridium (Figs. 9–11, 26, and 38); lamellar seta (*le*), small, inserted on small protuberance; rostral seta (*ro*) inserted on protuberance; cuticular folds present at base of protuberance (Fig. 10).

**Rostrum** incised (Figs. 9 and 10). Incision (*fi*) slender, ending anteriorly in sharp tooth and rounded posteriorly (Fig. 9).

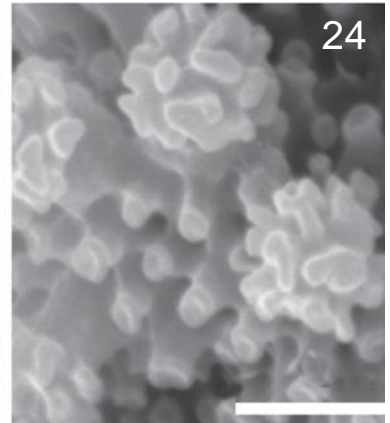
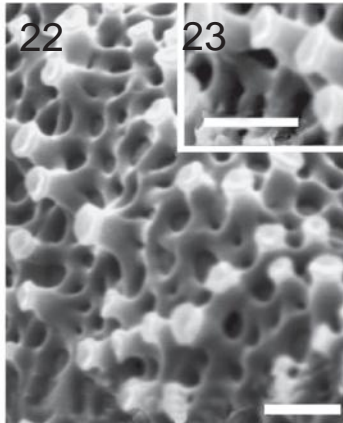
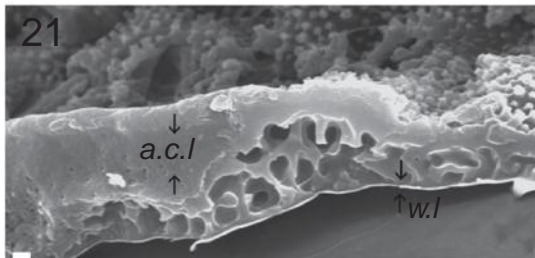
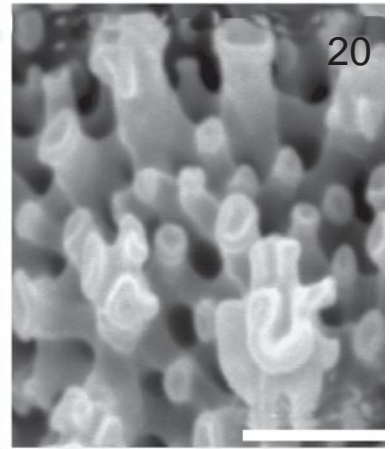
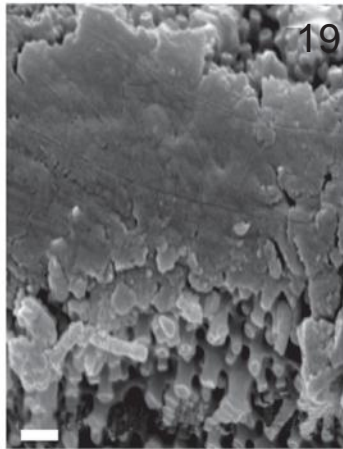
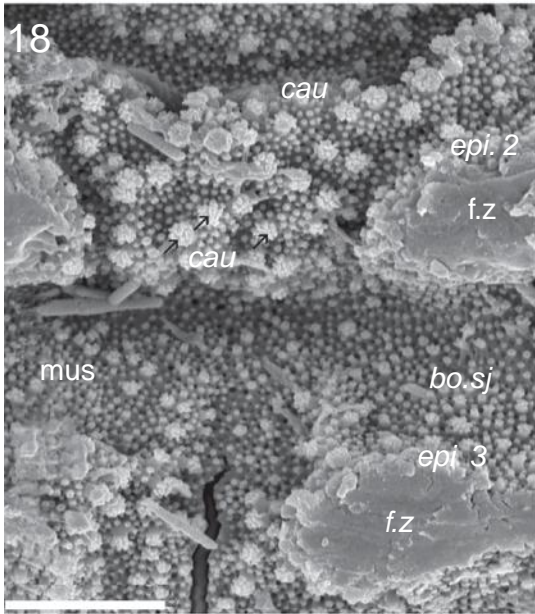
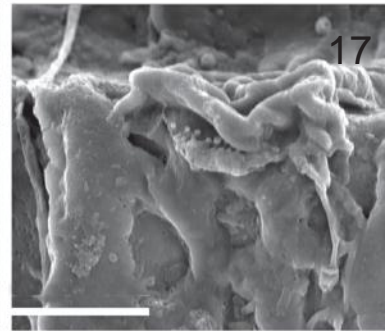
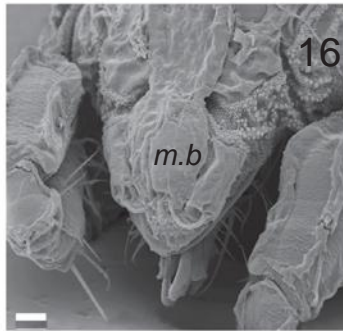
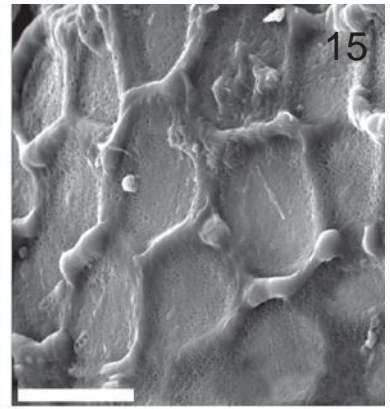
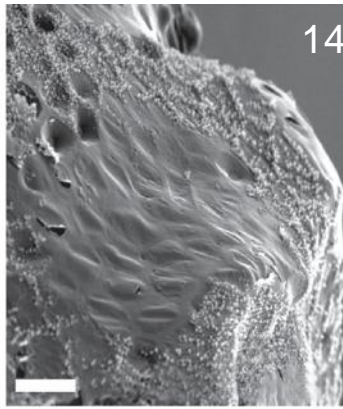
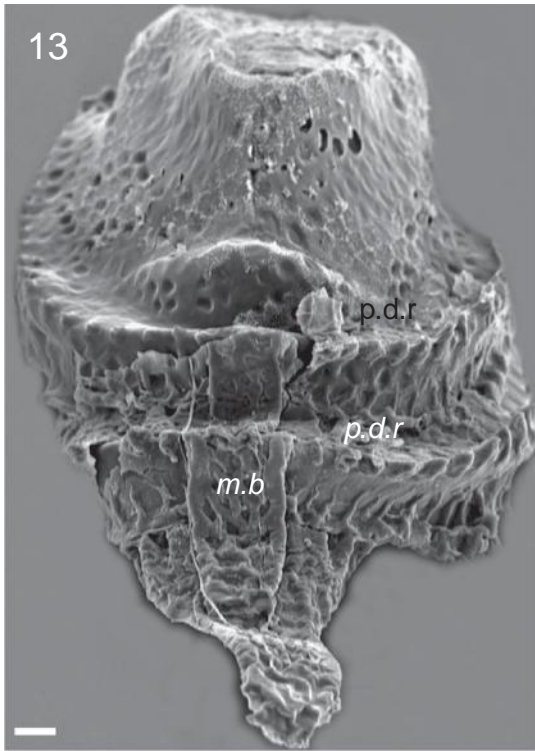
**Bothridium** large, directed laterally (Figs. 9–11, 28, 38–40), horn-shaped; bothridial rim dorsally semicircular, laterally incised, surrounded with thin rectilinear wall (*r.w*) (Fig. 38). Internal bothridial rings dentate (Figs. 28 and 38). Sensillus filiform (90–115  $\mu\text{m}$ ), minutely barbed (Figs. 28 and 37–39); diameter of pedicel 1  $\mu\text{m}$  in downward-sloping part of bothridial ring, increasing to 4  $\mu\text{m}$  in upward-sloping bothridial ring (Fig. 40); exostigmatal seta (*ex*) small (Fig. 26).

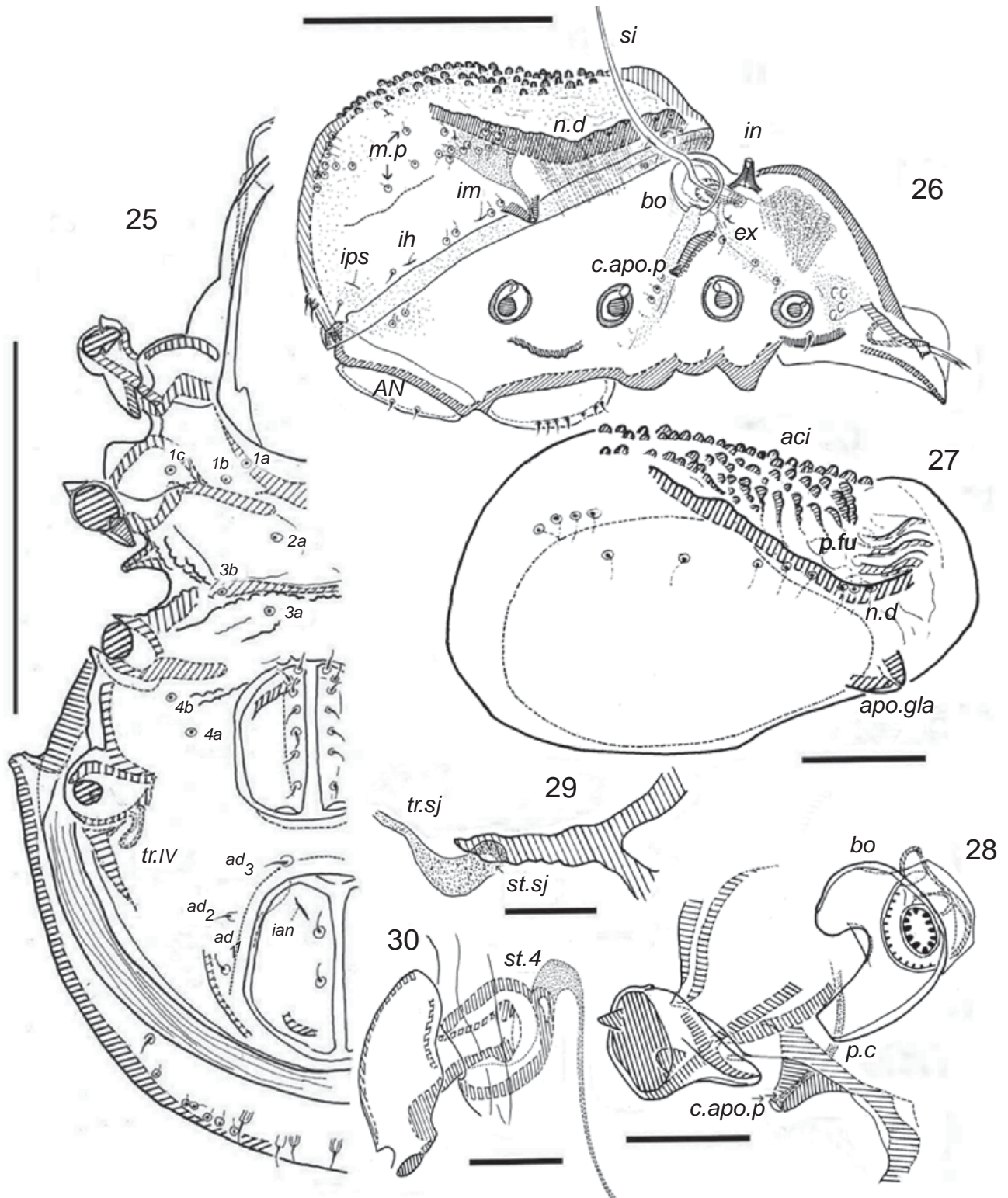
**Notogaster** – Central notogastral zone near dorsosejugal furrow with a rectilinear structure (*r.s*) (10–13  $\mu\text{m}$ ); rectilinear structure with small antiaxial depressions (Figs. 1 and 4).

**Macropores (*mp*)** varying in size (diameter 0.8–2  $\mu\text{m}$ ). Macropore openings operculate or non-operculate (Fig. 8) and directly on cuticle surface; internal channel close to cuticle, spiralling (Fig. 8, see arrow). Distribution: anteriorly circumgastric (Figs. 6 and 9), posteriorly irregular, numerous (Figs. 9 and 12).

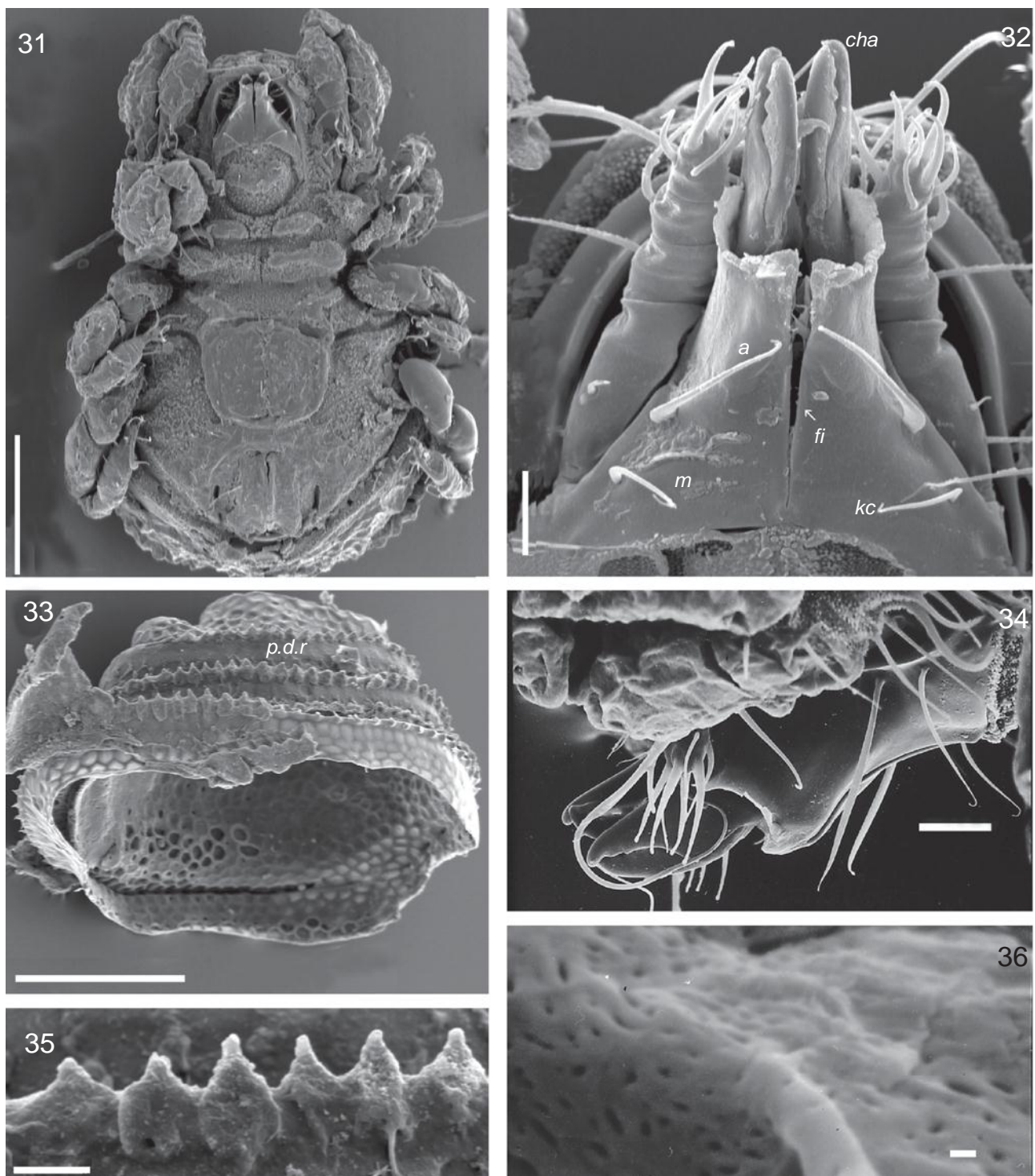
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Figs. 13–24. *Malgachebates peyrierasi* n. gen. n. sp., adult, SEM – 13. scalps (proto and deutonymph), frontal view; 14. deutonymphal scalp, posterior view; 15. cerotegument of scalps; 16. medial band; 17. medial band, cerotegument microsculpture; 18. cerotegument of epimeral zone; 19. cerotegument, flat zone; 20. cerotegument mushroom-like microtubercles; 21. cerotegument, flat zone, and inner layer; 22–23. mushroom-like microtubercles; 24. cauliflower-like microtubercles. Abbreviations: see Materials and methods. Scale: 13–18 = 10  $\mu\text{m}$ ; 19–24 = 1  $\mu\text{m}$ .





Figs. 25–30. *Malgachebates peyrrierasi* n. gen. n. sp., adult – 25. ventral view; 26. lateral view; 27. notogaster dorso-lateral view (apophysis of opisthosomal gland, schematic); 28. bothridia and apophysis of opisthosomal gland, dorsolateral view; 29. sejugal apophysis, apodeme and trachea *sj*, lateral view; 30. trachea IV, lateral, view. Abbreviations: see Materials and methods. Scale: 27, 28 = 100  $\mu$ m; 26 = 60  $\mu$ m; 25, 29, 30 = 10  $\mu$ m.



Figs. 31–36. *Malgachebates peyrierasi* n. gen. n. sp., adult, SEM – 31. ventral view; 32. infracapitulum, ventral view; 33. scalps; 34. infracapitulum, lateral view; 35. scalps, dentate peripheral ridge; 36. cerotegument, amorphous layer. Abbreviations: see Materials and methods. Scale: 31 = 100  $\mu$ m; 33 = 100  $\mu$ m; 32, 34, 35 = 10  $\mu$ m; 36 = 1  $\mu$ m.

Behind rectilinear structure, smooth zone (*s.z.*) (Fig. 4) bordered on either side by longitudinal furrow (*fu*); paraxial posterior (*s.z.*), aciculate zone (*aci*); antiaxial (*s.z.*) on each side, notogastral depression (*n.d.*) with successive parallel furrows (*p.fu*) directed anteroposteriorly (Fig. 1). Apophysis of opisthosomal gland (opisthonotal gland *sensu* Norton and Behan-Pelletier, 2009) conical (*apo.gla*) and positioned laterally (Figs. 3 and 39) extending forward; opening (*gla*) groove-shaped.

Five pairs of notogastral setae, one anterior and four posterior (Figs. 9, 12, and 26). Five pairs of lyrifissures (*ia*, *im*, *ih*, *ips*, *ip*).

*Ventral region* – Specimens with cerotegument: epimeres plate-like, at irregular levels on upper surface, epimeral furrows easily discernible. Epimere 1 small (Fig. 31); epimeral furrows 1 and 2 deeper. Epimere 2 (Figs. 18 and 31) small, with plate-like structures at different levels; elevated zone near epimeral furrow 2 with cerotegumental flat zones (*f.z.*) (Fig. 19); depressed zone near sejugal furrow (*bo.sj*) with mushroom-like microtubercles (*mus*) and cauliflower-like microtubercles (*cau*); *bo.sj* medially complete (Figs. 18 and 31). Epimere 3 small (Figs. 18 and 31); (*bo.3*) broad with *mus* and *cau*. Epimere 4 small, plate-like; *bo.4*, medially complete, deeper (Fig. 31).

Specimens without cerotegument: cuticle smooth. Epimeral furrows very flat, only *bo.sj* deeper.

Apodemes I and II close to each other; *sj* thin, medially complete; III small; IV absent. Epimeral setae formula (3-1-2-2).

Genital setation seven pairs, not in a single longitudinal row; aggenital seta absent; adanal setae three pairs; anal setae two pairs; lyrifissures (*ian*) clearly visible (Fig. 27).

*Lateral region* – Podosoma, exobothridial seta (*ex*) clearly discernible; four macropores: one behind *ex*; three others in oblique position to acetabulum I (Fig. 26). Sejugal zone below bothridial level and between acetabula II and III, three macropores and prominent conical apophysis (*c.apo.p*) with opening of podocephalic canal (*p.c.*) (Figs. 26 and 28).

Tubercle of interlamellar seta large. Central zone of prodorsum with clearly discernible internal muscular insertions (Fig. 26). Rostral margins smooth; prominent cuticular thickenings near setae on rostral protuberance.

Cuticle thickenings between acetabula III and IV; notogastral depression (*n.d.*) clearly discernible (Fig. 26); conical apophysis of opisthosomal gland (*apo.gla*) extending forward (Fig. 28).

*Gnathosoma* – Subcapitulum suctorial with short tube (Fig. 32). Carinae *kc* and *cop*, easily discernible. Mentum behind *kc* a big, plate-like structure; *kc* extending to *cop*; incision (*fi*) clearly discernible (Figs. 31 and 32) anterior margin of each lateral incision ending in a small tooth. Mentum near subcapitular setae *h* is an elevated zone with particular cerotegument (Fig. 31) descending to *cop*. Subcapitular setae large (Fig. 32). Chelicerae without setae; large Trägårdh's organ.

Palp – tarsus short; eupathidia large (Figs. 32 and 34); solenidion *w* free, curved; setae *lt* absent.

*Tracheal system* – Trachea 1 fine, emerging from anterior zone of cotyloid wall; sejugal trachea emerging from sejugal apodeme (Fig. 29); sejugal vestibule well discernible; trachea 4 short (Fig. 30); sometimes aspect of trachea 4 as in Fig. 25.

*Legs* – Claw: monodactylous, strong, dentate. Leg cuticle smooth. Leg I larger, II, III, and IV equal in size (Figs. 44–47).

Incomplete sockets (crispins *sensu* Grandjean or retroectum *sensu* Norton & Behan Pelletier) dorsally on trochantera I and II: dorsal on trochanter (protecting acetabular opening), and dorsoantiaxially on femora I and II (Figs. 44, and 46). Articulation between tarsus–tibia by means of small synarthrodial skin.

Femora large, with porose areas; on femora I and II porose areas situated medially in posterior zone, and on femora III and IV positioned dorsoposteriorly; cuticle I, II smooth, III, IV with prominent antiaxial cuticular thickenings (Figs. 44–47).

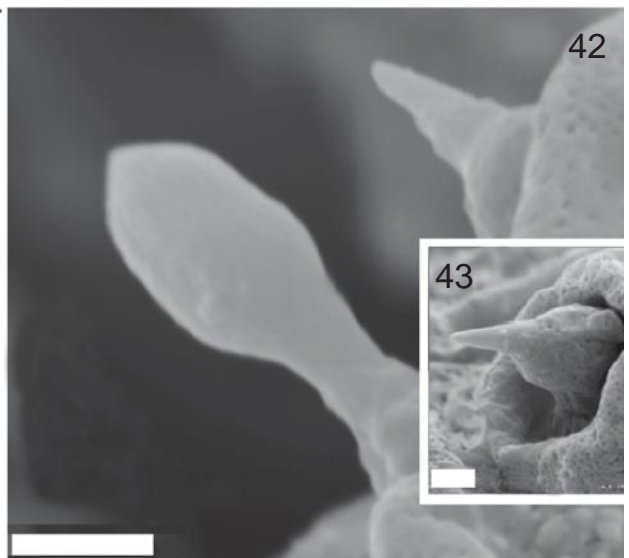
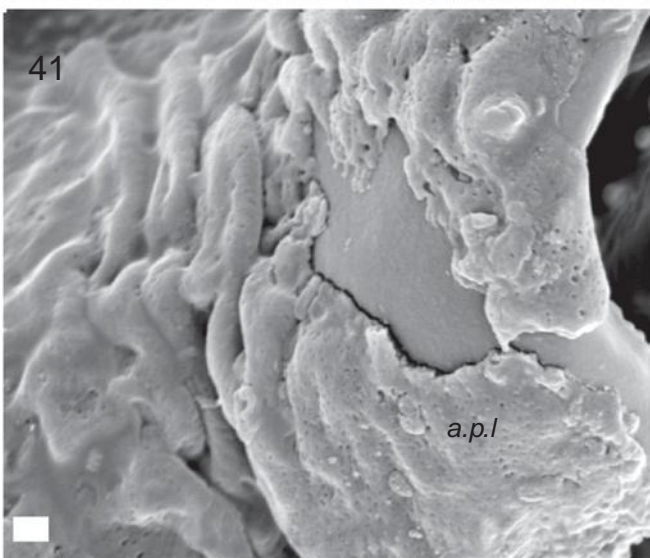
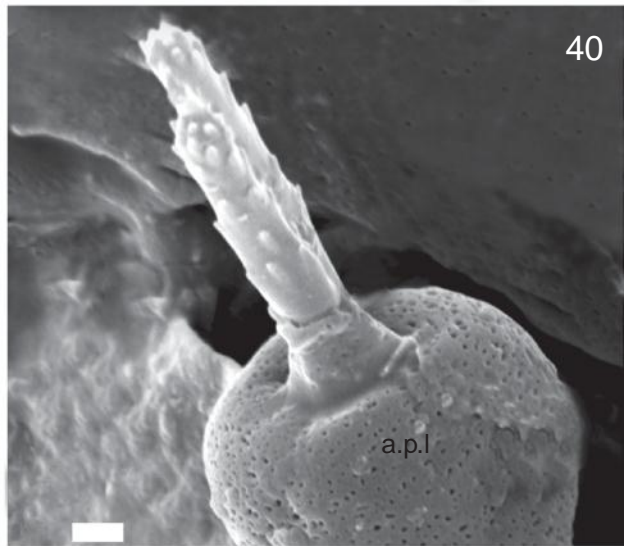
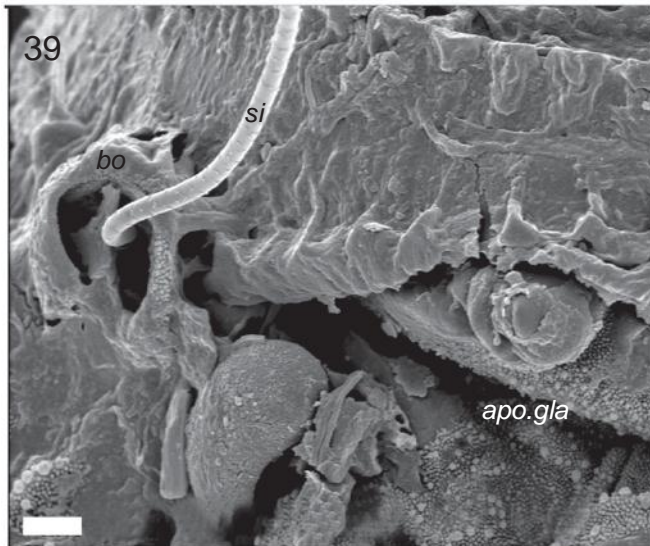
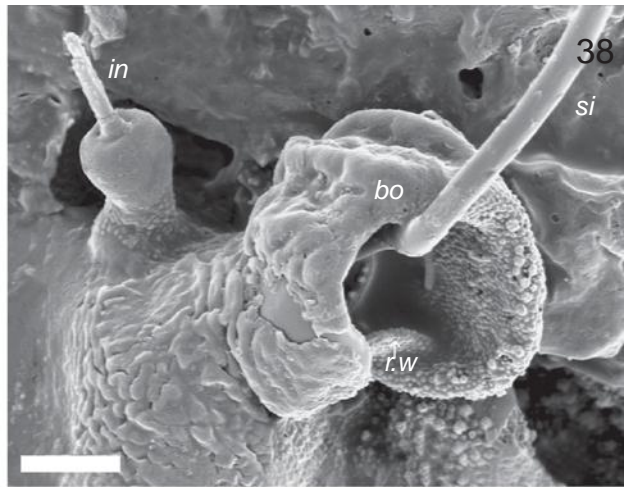
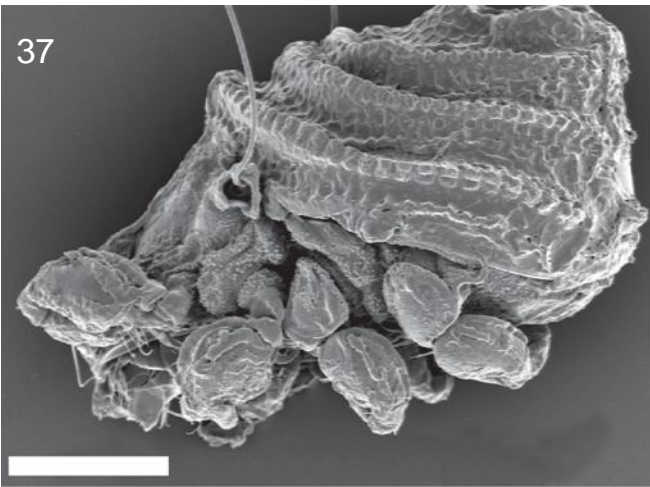
Setal formulae (trochanter to tarsus): I (1-5-5-5-20-1) (1-2-2); II (1-5-4-4-14-1) (1-1-2); III (2-3-2-4-13-1) (1-1-0); IV (1-3-2-4-13-1) (0-1-0).

Solenidion *s* spatulate (Figs. 42, 44–47); seta *d* associated with large solenidion  $\mathcal{J}_1$ ; seta *d* of genu II very small, situated in small pit (Fig. 43).

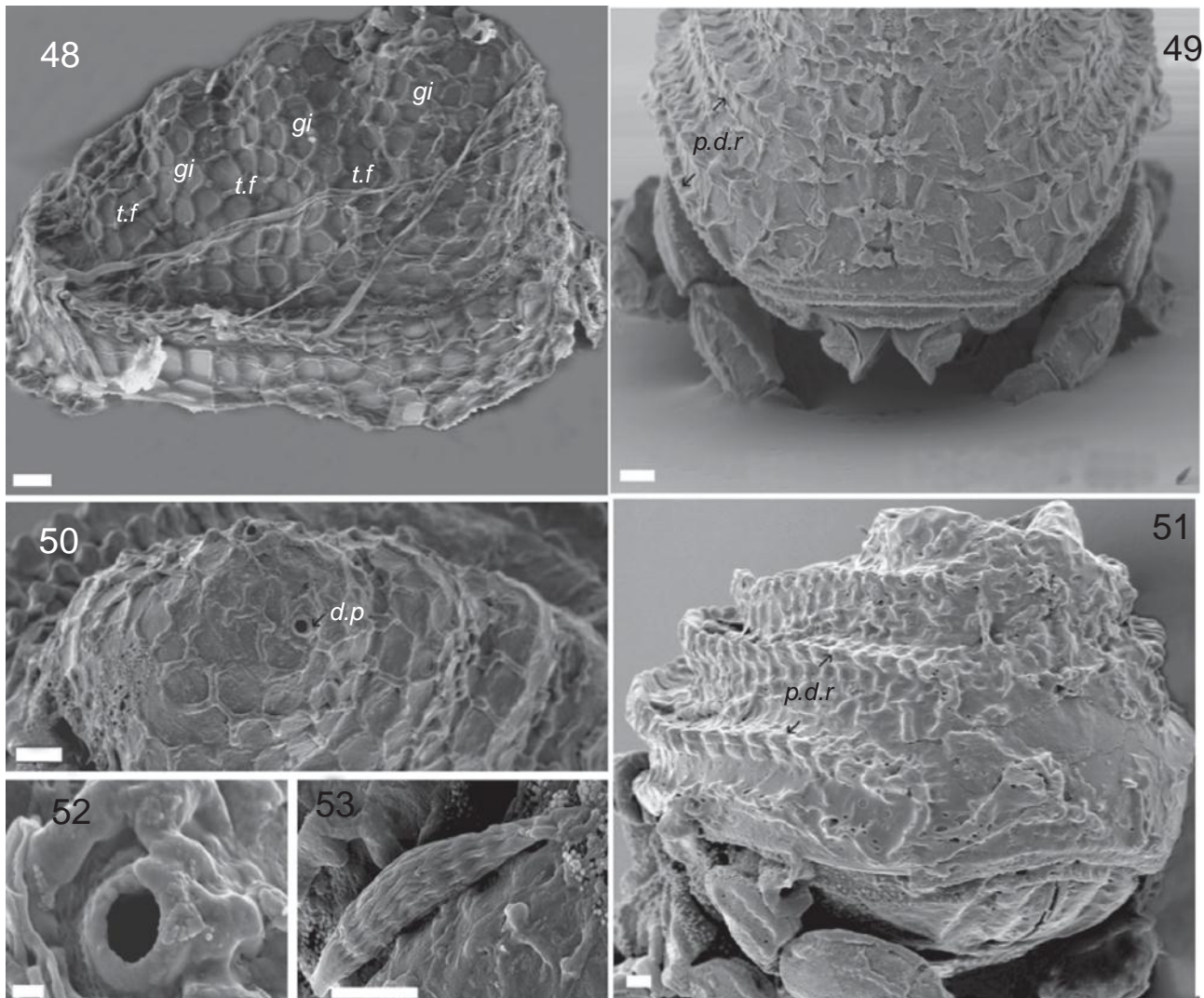
*Scalps* – Exuviae of juvenile stages adhering one on top of the other, creating a multilayered structure; anteriorly each exuvium extends in a medial band (*m.b.*). The medial band covers the central zone of the prodorsum up to the rostrum (Figs. 13 and 16).

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Figs. 37–43. *Malgachebates peyrierasi* n. gen. n. sp., adult, SEM – 37. lateral view; 38. bothridium and interlamellar seta, anterolateral view; 39. bothridium lateral view; 40. interlamellar seta, detail; 41. bothridial cerotegument; 42. solenidion *s*; 43. *d* seta of genu II. Abbreviations: see Materials and methods. Scale: 37 = 100  $\mu$ m; 38, 39 = 10  $\mu$ m; 40–43 = 1  $\mu$ m.







Figs. 48–53. *Malgachebates peyrierasi* n. gen. n. sp., adult, SEM – 48. larval scalp, lateral view; 49. adult with scalps, posterior view; 50. larval scalp, dorsal view; 51. adult posterior- lateral view; 52. insertion seta *dp*; 53. seta *dp*, detail. Abbreviations: see Materials and methods. Scale: 48–52 = 10  $\mu\text{m}$ ; 53 = 1  $\mu\text{m}$ .

Scalps firmly attached and are covered with a thick cerotegumentary layer with an unusual network pattern of polygonal mesh (Figs. 13, 17, and 33) with prominent alveolate reticulation (Fig. 33). Medial band extension (Figs. 13 and 16) with easily discernible, thin, transparent waxy cerotegument layer (*w.l*) and cement layer (Norton *et al.*, 1997) with elongated polygonal reticulate pattern (Fig. 17).

Shape of larval scalp different from that of other stages, broad and elevated, with three gibbose areas (*gi*) separated by transverse furrows (*t.f*) (Fig. 48); nymphal scalps with dentate peripheral ridge (*p.d.r*)

(Figs. 35, 49, and 51) which becomes inconspicuous on pygidial zone (Figs. 49 and 51). Setae hardly discernible, only insertion and setae *dp* clearly visible on larval scalp (Figs. 50, 52 and 53).

## DISCUSSION

The four genera of the family Plasmobatidae are compared in Table 1 to elucidate their similarities and numerous differences. The species *Plasmobates schubarti* Perez-Iñigo and Baggio, 1988 most probably belongs to the new genus *Malgachebates* (a study of

the type material of the former needs to be performed to confirm this).

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