

TWO NEW SPECIES AND TWO NEW GENERA OF SARCOPTIDAE FROM A MARSUPIAL AND AN INSECTIVORE¹

A. Fain and F. S. Lukoschus²

----- **ABSTRACT** - Two new species and genera of Sarcoptidae (Acarina: Astigmata) from a marsupial and an insectivore are described and illustrated. These are *Suncicoptes indicus* gen. nov. & spec. nov. collected from the skin of *Suncus murinus* collected in Bombay, India, and *Caenolestocoptes inca* gen. nov. & spec. nov. collected from the tail of *Lestoros inca* taken in Torontoy, Matchu Pichu Valley, Peru. The latter species forms a new subfamily Caenolestocoptinae subfam. nov. -----

We describe here two new genera and species of Sarcoptidae. One of the genera is from *Suncus murinus* collected at Bombay, India; this is the first instance of a member of the family Sarcoptidae to be found on an insectivore. The second species described here was found in the hair follicles of the tail of *Lestoros inca*, an American marsupial of the family Caenolestidae. We have found it necessary to erect a new subfamily for this unusual mite.

Family SARCOPTIDAE Murray, 1877
Subfamily NOTOEDRINAE Fain, 1968
Genus *Suncicoptes* gen. nov.

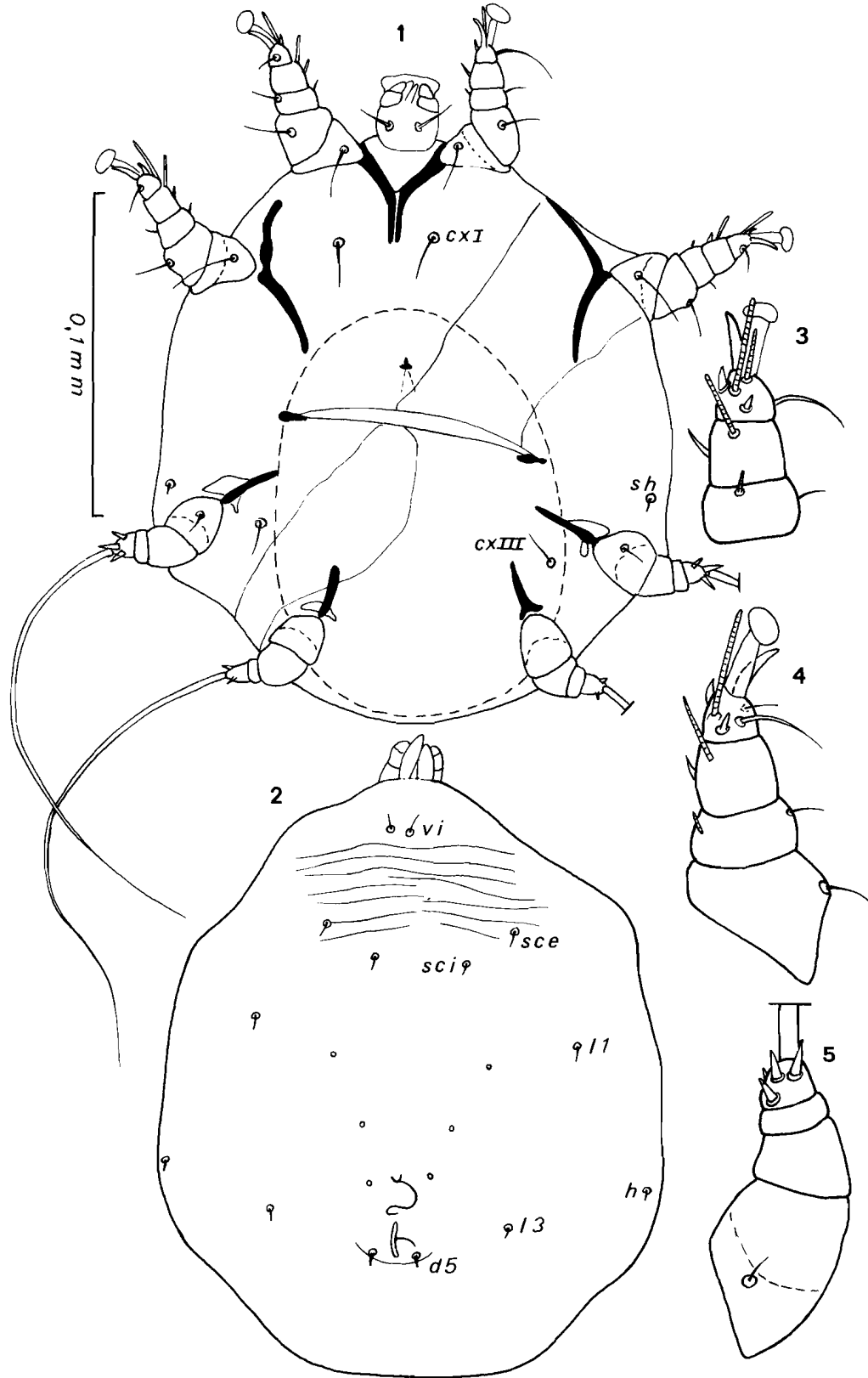
DEFINITION — This genus is known only from the female. It is distinguished from all the genera in the subfamily Notoedrinae by the strong reduction of the body chaetotaxy. The setae present on idiosoma are only the followings: *vi, sci, sce, h, sh, 11, 13, d5, cxI*, and *cxIII*. The other setae *ve, scx, d1, d2, d3, d4, 12, 14*, and *15* are lacking or may be represented by small pores. There are no genital setae. Cuticle is bare except anterior part of propodosoma which bears 6-7 incomplete striations. Epimera I are long, others are parallel and separated. Other characters as in *Notoedres*.

TYPE SPECIES — *Suncicoptes indicus* spec. nov.

Suncicoptes indicus spec. nov.
(Figs. 1-5)

FEMALE (Figs. 1-5) - Holotype 186 μ long and 155 μ wide (idiosoma), containing a large egg measuring 129 μ long and 93 μ wide. Dorsal surface: cuticle bare except a few transverse, incomplete striations on propodosoma. Anus situated at 42 μ from posterior extremity. Bursa short, 'S' shaped. Ventral surface: cuticle with two tears, one in front and other behind vulva. Epimera I long, parallel and close together. Other epimera short, free. Vulva transverse. Epigynium small. Anterior legs marginal. Legs III and IV partly ventral. Tarsi I-II with a sucker placed on short peduncle and a rather long claw. Chaetotaxy of legs as in *Notoedres*.

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2. Institut de Medecine Tropicale, 155 Nationalestraat, 2000 Antwerp, Belgium, AND Zoologisch Laboratorium, Faculteit der Wiskunde en Natuurwetenschappen, Nijmegen, Netherlands, respectively.



Figs. 1- 5: *Suncicoptes indicus* sp. n. (holotype female); 1, ventral view; 2, dorsal view; 3, leg I; 4, leg II; 5, leg III.

COLLECTION DATA — Holotype and paratype females, collected by F.S. Lukoschus from the skin of *Suncus murinus*, Bombay, India, 13.I.1975 (host collected by V. Cauwenberghe). The mites were found in small lesions located above and at both sides of the base of the tail. Holotype is in the Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium.

Subfamily CAENOLESTOCOPTINAE subfam. nov.

DEFINITION — This new subfamily is created for a new genus which presents the main characters of the family Sarcoptidae but differs from all known genera in this subfamily by the following characters: (1) In both sexes *vi* are absent; tarsi I and II bear only one spine (modified hair) and no recurved processes; tarsi III and IV are longer than wide and bear a recurved process; small triangular processes are present on ventral surface of genu, femur and tibiae I-II and on trochanters III and IV; small retrorse processes present on palpi; two pairs of anal setae present. (2) In male- one pair of large adanal suckers present. (3) In female- legs I and II are inserted in dorsal position.

TYPE GENUS — *Caenolestocoptes* gen. nov.

REMARKS— The family Sarcoptidae now includes four subfamilies: (1) Sarcoptinae Murray, 1877: Tibiotarsi III-IV fused in both sexes. Tarsi I-II and tibiotarsi III with two spines in both sexes. Tibiotarsus IV with two spines in female and one spine in male. Male without adanal suckers. Sclerotized processes on tarsi absent in both sexes. Setae *vi* present in both sexes. Type genus — *Sarcoptes* Latreille.

(2) Notoedrinae Fain, 1968: Tibiotarsi III-IV as in Sarcoptinae but tarsus IV free in male. Tarsi I-II with four, tibiotarsus III with two to five spines in both sexes. Tibiotarsus IV with two to four spines in female. Tarsus IV with one to two spines in male. Male without adanal suckers. Sclerotized processes on tarsi absent in both sexes. Setae *vi* present in both sexes. Type genus — *Notoedres* Railliet.

(3) Diaboliocoptinae Fain and Domrow, 1974: All tarsi free in both sexes. Tarsi I-II with two, and III-IV with three, sclerotized processes in female and nymph, but without spines. Tarsi I-IV with one or two spines and one to three sclerotized processes in male. Adanal suckers absent in male. Setae *vi* present in both sexes. Type genus — *Diaboliocoptes* Fain and Domrow, 1974.

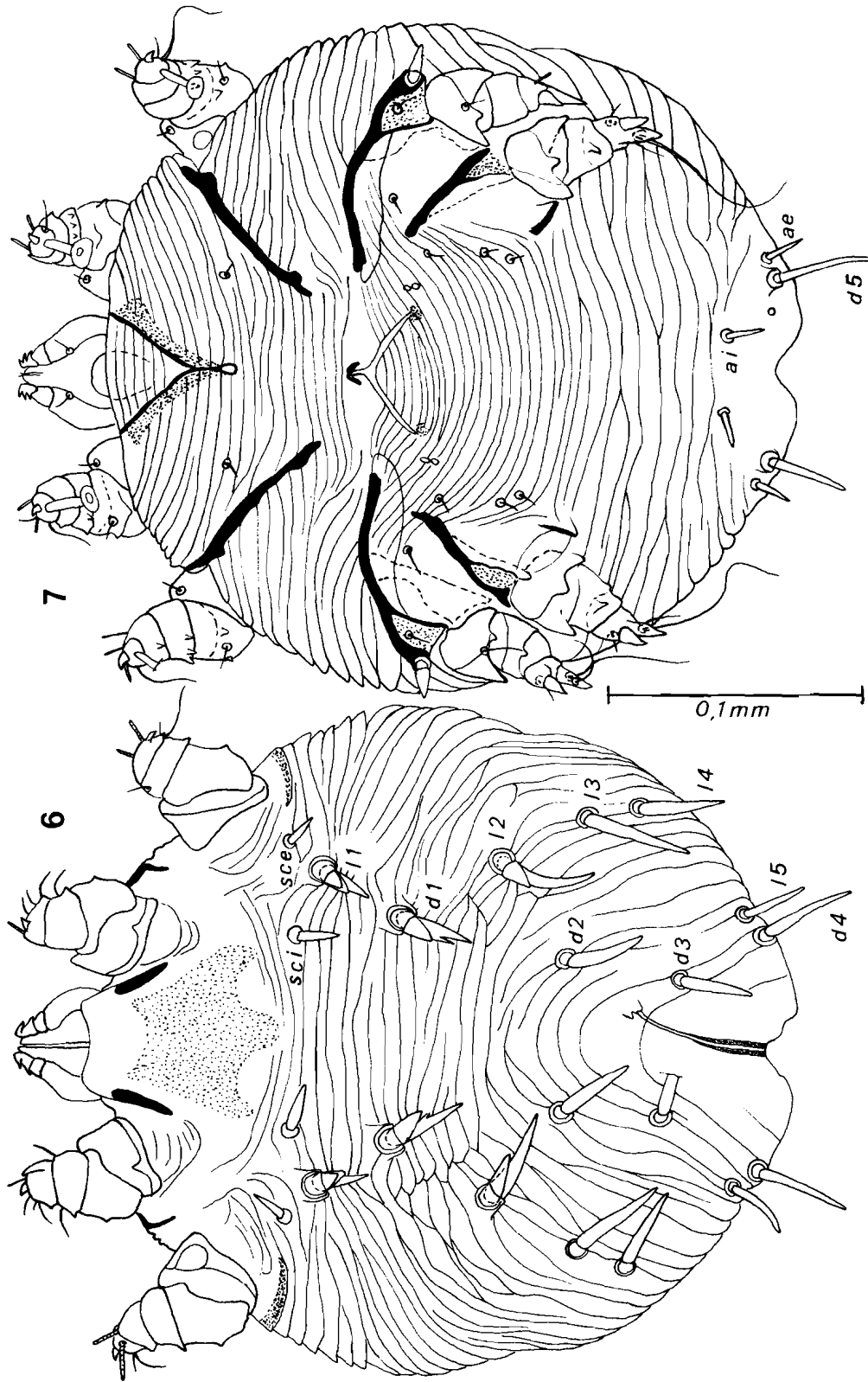
(4) Caenolestocoptinae subfam. nov.: In both sexes- all tarsi free; tarsi I-II short, with one spine and without sclerotized processes; tarsi III-IV longer than wide, without spines but with a sclerotized process; setae *vi* absent; palpi with small retrorse processes. Male with two large adanal suckers. Type genus — *Caenolestocoptes* gen. nov.

Genus *Caenolestocoptes* gen. nov.

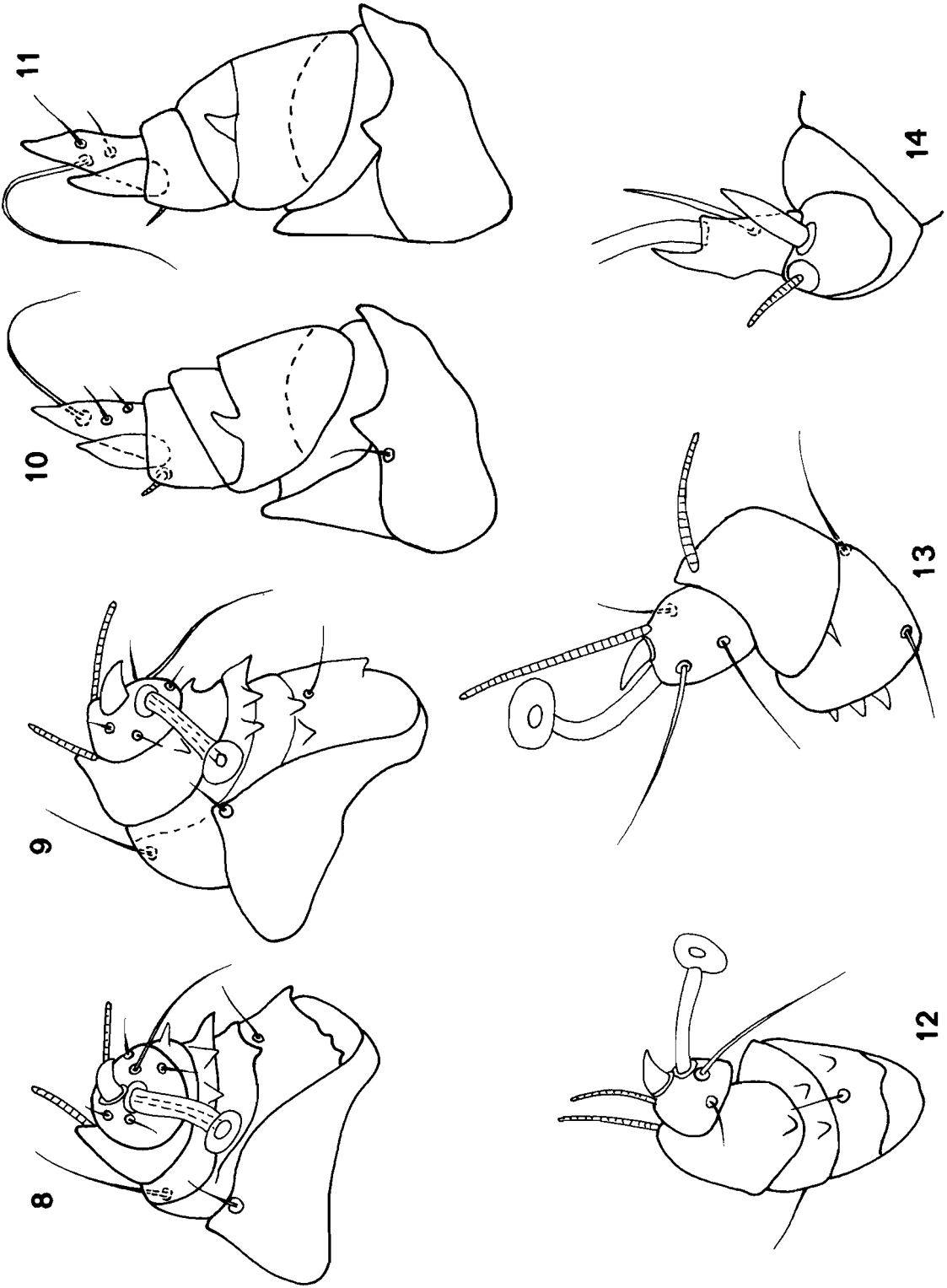
DEFINITION — With the characters of the subfamily. Female with striated dorsum and venter. Male with striations visible only in some parts of body. Most of dorsum covered with four punctate plates. Epimera I fused in 'Y' shape in female, contiguous in male. Legs I-II with a pedunculate sucker. Tarsi III-IV with a long hair, much longer in male than in female.

TYPE SPECIES — *Caenolestocoptes inca* spec. nov.

REMARKS — Owing to presence of adanal suckers in male and presence of only one spine on tarsi I-II and two pairs of anal setae in both sexes, genus *Caenolestocoptes* is probably the most primitive genus in the family Sarcoptidae. However, besides these primitive characters the presence of some evolved characters are also evident, e.g. the absence of setae *vi*, modification of tarsi III-IV, presence of sclerotized processes on tarsi III-IV and of retrorse processes on gnathosoma and on legs, the modification of tibiae III-IV setae into strong



Figs. 6- 7: *Caenolestocoptes inca* sp. n. (holotype female); 6, dorsal view; 7, ventral view.



Figs. 8- 14: *Caenolestocoptes inca* sp.n.; 8- 11 (holotype and paratype female); 8, leg I; 9, leg II; 10, leg III; 11, leg IV; 12- 14 (allotype male); 12, leg I; 13, leg II; 14, leg IV.

spines. We think that these characters are probably adaptive modifications in relation to the intrafollicular habitat.

Caenolestocoptes inca spec. nov.
(Figs. 6-16)

FEMALE (Figs. 6-11) — Holotype 279 μ long and 261 μ wide (idiosoma). In two paratypes these measure 276 x 261 μ and 285 x 270 μ . The posterior border of female slightly incised. Dorsal surface: propodosomal shield with a posterior border divided into three lobes. Anus terminal. Bursa 60 μ long, thick and strongly sclerotized in its apical half; its aperture located dorso-terminal. Ventral surface: epimera I fused in a 'Y', other epimera free. Epigynium small. Vulva in shape of an inverted 'Y' and with a very short longitudinal part. Legs I-II short, ending in a pedunculate sucker. Legs III-IV short, with modified tarsi, longer than wide and ending into a sclerotized triangular process. Setae *vi* and *ve* lacking. All other dorsal setae modified into spines. Setae *d1*, *11* trifid and *12* bifid. Tarsi I-II with an apical spine and with (?) 5 simple setae. Tarsi III-IV with three simple setae. Tibiae III-IV with a strong spine. Tarsi I-II with one solenidion (ω 3 has not been observed). Tibiae I to IV with a well developed solenidion.

MALE (Figs. 12-16) — Allotype 240 μ long and approximately 180 μ wide (idiosoma) (This specimen has been removed from its tritonymphal skin. It is crushed and cuticle is torn on ventral and dorsal surface). Posterior extremity slightly incised. Dorsal surface bearing four punctate shields, two median and two laterals. Ventral surface: epimera I contiguous, other epimera distinctly separate. Aedeagus elongate. Adanal suckers large. Legs as in female. Number of setae on idiosoma as in female but dorsal setae much smaller and only *11* bifid.

MALE TRITONYMPH — We have only the skin that contained the male. Its length is difficult to measure. General characters are as in female but dorsal setae are thinner.

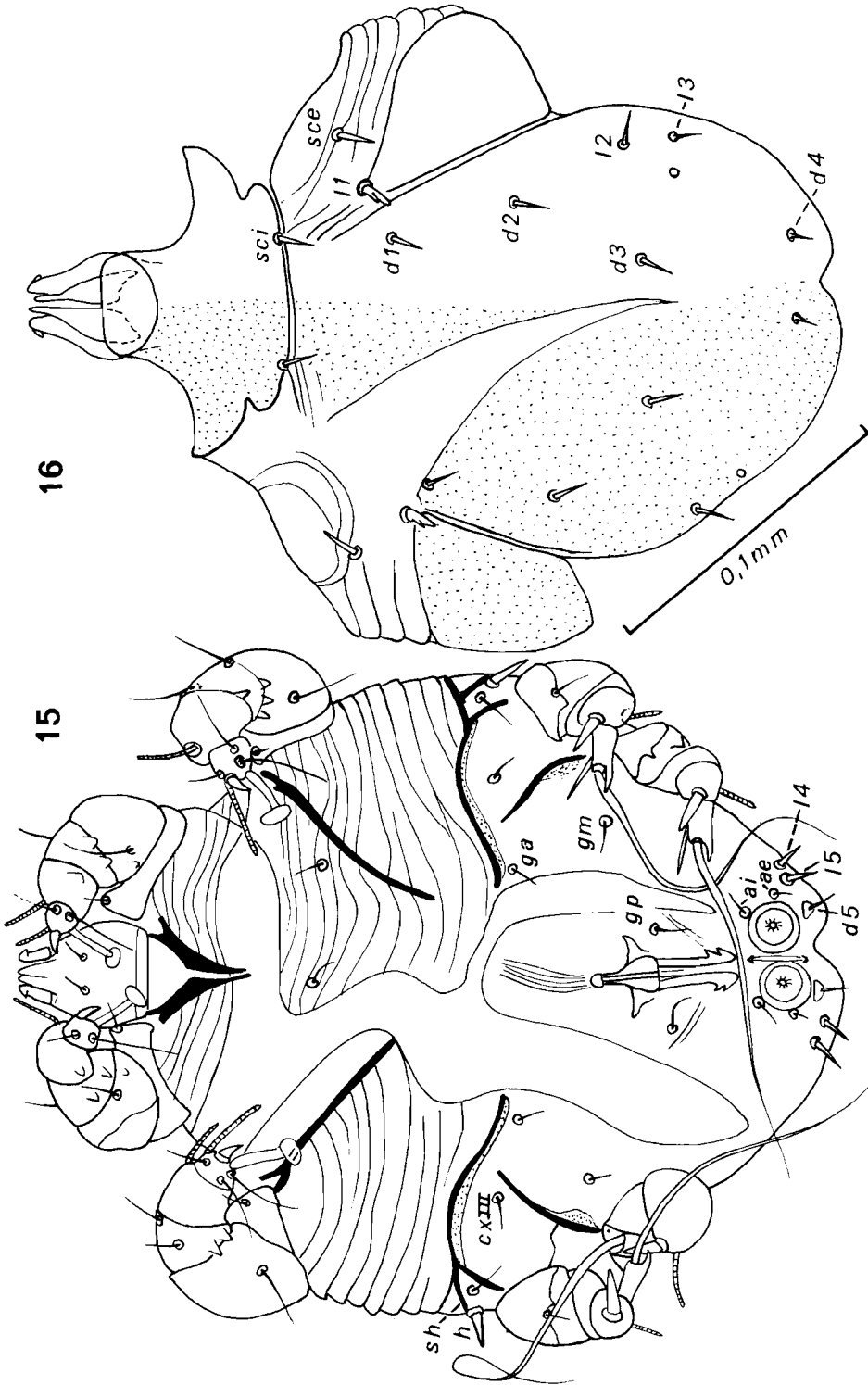
PROTONYMPH — We have one protonymph containing a tritonymph. This protonymph is 228 μ long and 208 μ wide (idiosoma). The dorsal setae of this protonymph and those of enclosed tritonymph are thicker than in tritonymph containing the male. Therefore, we think, there are two types of tritonymphs, one developing in a male and the other in a female.

LARVA — Two females contain a completely developed larva and we also have a free larva. The latter is 156 μ long and 120 μ wide (idiosoma). Larva resembles strongly the female. The cuticle is completely striated and the gnathosoma and legs have same structure and bear retrorse processes. The main differences consist in the greater length and width of *15* setae (situated at level of anus) and of terminal setae of tarsus III.

COLLECTION DATA — Holotype, 12 female paratypes, allotype male and numerous nymphs, collected by F.S. Lukoschus. The mites were embedded into the hair follicles of the tail of *Lestoros inca* (Caenolestidae), from Torontoy, Matchu Pichu Valley, Peru. Some were mixed with hypopi of *Echimyopus* sp. but they were in a more superficial position than the latter. The host was collected by E. Heller, IV. 1915. The types are in Smithsonian Museum, Washington. Paratypes are in collection of the authors.

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Figs. 15- 16: *Caenolestocoptes inca* sp. n. (allotype male); 15, ventral view; 16, dorsal view.

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