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ABSTRACT

Six species of uropodids have been re-studied and catalogued on the basis of literature and examination of the type-specimens and related material at the Acaroteca in Florence. New illustrations as well as previously published ones are included. There are two main sections: COMMENTS and CATALOGUE. The CATALOGUE section is made up of four divisions: SPECIFIC NAME, SYNONYMY, CITATIONS and LOCALITY: HABITAT.

Key-words: Berlese, uropodids, *Uroplitella calceolata*, 1916, *Uropoda campomolendina*, 1887, *U. campomolendina* var *canadensis*, 1904, *U. canestriniana*, 1891, *Deraiphorus canestrinii*, 1905, *Uropoda caputmedusae*, 1901.

RESUME

Six espèces du genre *Uropoda* de Berlese ont été réétudiées et cataloguées sur la base de la littérature ainsi que de l'examen des types et d'autres spécimens à l'Acarothèque de Florence. Des illustrations inédites ou déjà publiées sont incluses. Le travail est divisé en deux sections: COMMENTAIRES et CATALOGUE. La section CATALOGUE est subdivisée en 4 parties: NOM DE L'ESPECE, SYNONYMIE, CITATIONS, LOCALITE: HABITAT.

Mots-clés: Berlese, uropodids, *Uroplitella calceolata*, 1916, *Uropoda campomolendina*, 1887, *U. campomolendina* var *canedansis*, 1904, *U. canestriniana*, 1891, *Deraiphorus canestrinii*, 1905, *Uropoda caputmedusae*, 1901.

INTRODUCTION

This paper is the second concerning the 137 uropodids described by Antonio BERLESE between the years 1888 and 1923. The first paper included fourteen species with the initial letters of the trivial names beginning with either an a or b. The present paper continues with 6 of the 19 species beginning with the letter c. They are *Uroplitella calceolata*, 1916, *Uropoda campomolendina*, 1887, *U. campomolendina* var *canadensis*, 1904, *U. canestriniana*, 1891, *Deraiphorus canestrinii*, 1905 and *Uropoda caputmedusae*, 1901.

As in the previous paper (GORIROSSI-BOURDEAU, DOCUMENTS DE TRAVAIL #90 de l'Institut royal des Sciences naturelles de Belgique 1998: 1-108), information on each species is organized chronologically and all essential illustrations of the various authors are reproduced. Included, as well, are illustrations and photographs of species prepared by the writer from material found at the Acarotheca in Florence, Italy.

The same format is used as in the first paper, i.e. the species are arranged alphabetically by trivial name in their original orthography. The manuscript is divided into two sections: COMMENTS and CATALOGUE.

COMMENTS

The COMMENTS section covers information concerning each species which does not form part of the CATALOGUE section. It includes translations of Berlese's original Latin descriptions (which, in many instances, were not always very clear), redescriptions of inadequately described species and mentions any discrepancies found in the literature. It lists photographs taken of the species and the slides from which they were taken as well as the illustrations made by the writer. The photographs and the writer's illustrations are listed as PLATES.

For three of the six species included in the present study Berlese published only descriptions and gave no illustrations. They are *Uroplitella calceolata*, Berlese, 1916, *Uropoda campomolendina* var *canadensis* Berlese, 1904 and *Uropoda caputmedusae* Berlese 1901. Two of these three species have since been studied; they are *Uroplitella calceolata* and *Uropoda caputmedusae*. HIRSCHMANN & ZIRNGIEBL-NICOL in 1969 published a sketch of the perigenital area and the peritreme of the male of *U. calceolata* and ZIRNGIEBL-NICOL in 1973:43 published a brief description of the male. HIRSCHMANN & ZIRNGIEBL-NICOL in 1969 published illustrations of the dorsum, ventrum, hypostome and chelicera of the male of *U. caputmedusae* and ZIRNGIEBL-NICOL in 1972:26 published a description.

1. *Uroplitella calceolata*: Slide 168/3: Pl. I. 1. male-ventrum; 2. gnath. setae, corn., sternal
1916: 148 setae (part); 3. corniculi, scabellum

The only specimen of *U. calceolata*, a male, had to be remounted for study. Berlese included no illustrations; his description translates as follows:..."Male, bay-colored, broadly oval, sparsely covered with short setae ... peritreme with one, rather broad, outward fold, running obliquely anteriorly. Thick legs, the anterior ones with a short and thick 'ambulacrum'; the 2nd & 3rd pairs with a peculiar and puzzling small pad located under the ambulacrum, similar to a 'sandal'. The ambulacra of legs IV are less developed or even almost non existent. The apex of the tibia and the tarsus of the 2nd and 3rd pairs of legs are armed with robust, spine-shaped processes. The perigenital shield is wider anteriorly and has 6 teeth on its margin; it is narrower posteriorly and has 5 teeth on the margin. 550 µm long and 450 µm wide.

Habitat: collected by Cl. Jacobson, at Samarany, Java."

In 1973: 43 ZIRNGIEBL-NICOL gave the following details concerning the male:..."The dorsal surface has saber-shaped setae. The perigenital structure line completely surrounds the operculum, forming anteriorly and posteriorly a transversal garland; operculum round, reaching from beginning to middle of coxae III, shield shiny; 9 pairs of needle-shaped setae." This description complemented her illustrations of the genitosternal plate and peritreme published in 1969, Folge 12, Taf. 22 (see plate 1969: HIRSCHMANN & ZIRNGIEBL-NICOL).

Plate I, #1, a photograph of the ventrum, shows the odd-shaped perigenital depression (see GORIROSSI-BOURDEAU, 1993: 369), the very robust, short legs of the species, one of the well developed, posteriorly~directed grooves for legs IV and the disposition of the short, barbed-shaped setae (the processes of Berlese) on the tibia and tarsus of legs III & IV. The posterior edge of the round genital opening is at the same level as the posterior edge of coxae II and, anteriorly, at the level of the middle of coxae II. It is not between coxae III as described by ZIRNGIEBL-NICOL. There are two pairs of genital setae (large arrows) and six pore-like formations (small arrows) between coxae III.

The anterior margin of the perigenital depression, #1-#2, has a series of 5 loops (referred to as garlands by ZIRNGIEBL-NICOL) forming the 6 teeth mentioned by Berlese. The margin of the narrower, rounded, posterior border Berlese described as having 5 teeth, and, therefore, probably 4 loops. There are 6 sternoendopodal setae (see G-B. reference: 377, Fig. 3, 1-6) around the perigenital depression: one in each of the lateral loops of the anterior and posterior borders of the perigenital depression and four in the endopodal and metapodal regions (see small arrows exterior to perigenital depression).

Gnathosoma: Pl. I, #2-3. The gnathosomal setae are short and arranged one behind the other; the medially-directed corniculi have a wide base. Figure 3 shows the large scabellum (S) flaring anteriorly.

2. *Uropoda campomolendina*: Slide 9/25: Pl. I. 1. female-ventrum; 2. detail of genital pl., 1887 : XLV, N. 2 trito., leg grooves; Pl. II. 1. male-ventrum, 2. chelicerae.

As was so often the case in Berlese's early works, there is a thorough description as well as good illustrations of both the male and female of *U. campomolendina* (see Plate 1887: Berlese, XLV, N. 2). Slide 9/25, from which the present studies are made, is labelled 'type'. It has three specimens: a female, a male and a nymph. These are not listed in CASTAGNOLI & PEGAZZANO, 1985: 59.

Berlese's description of the species translates as follows: ... "Brick-colored, oval, somewhat elongated; minuscule but conspicuous setae on the dorsum and margins, with a small dorsal shield not reaching to margins; with an entire metapodium rounded posteriorly; female with internal, smaller shield. About 450 μm long.*

Habitat: fields of Treviso (Campomolino), in wood mosses.

"Male body oval, rounded posteriorly, subacute in the female. Two conspicuous setae on either side of anal opening. Metapodia broad and rounded posteriorly. Peritreme (6) twice curved. forming a convoluted line (S-shaped) at the sides of the body. The chela of the mandible are small, with both digits equally toothed. Male (3) posteriorly more rounded than female, with circular genital opening located between the 3rd pair of legs

"*Female* (Figs. 1-2) ... genital shield strongly truncated posteriorly and reaching posteriorly to 4th pair of legs; acuminate anteriorly, narrowing into a spine at the margin of the sternum. Derma sparsely covered with small setae. Derma of genital shield of female sparsely punctuated, especially in the middle. Fig. 4 shows genital shield of female greatly magnified."

* Berlese, 1904: 22, included in his description for *Uropoda campomolendina* Berlese var. *canadensis* the following additional dimensions for the female of *U. campomolendina*: 490 μm long and 310 μm wide.

There seems to be little differences in the shape of the female of *campomolendina* (P1. I, #1) with that of the male (P1. II, #1) although Berlese described the posterior margin of the female as being more acute.

Plate I, #1-2, *female*. The large genital plate occupies the entire intercostal region; its truncated posterior edge extends beyond coxae IV to the level of leg grooves IV. Anteriorly, at about the level of the middle of coxae II, it tapers sharply to a needle-shaped point which overlaps the anterior edge of the sternal plate and projects between the coxae of legs I. It does not stop abruptly at the anterior edge of the sternal plate as described and shown by Berlese (his Fig. 2). The muscles radiating from the posterior margin of the genital plate (Fig. #2) are no doubt internal constrictor muscles responsible for pulling down the genital plate. Visible on the same photograph are the internal genital sclerites and small tooth-like barbs on the surface of the genital lining described and shown by Berlese (his Figs. 2 & 4). There are at least three pairs of genital setae (small arrows). The broad base of the tritosternum (T) supports a single, barbed lacinium (Figs. 2-3).

Berlese's creation of the subspecies *canadensis* was based on its greater size with regards to *campomolendina* (*canadensis* male: 580 x 550 μm , female: 550 x 450 μm , vs. *campomolendina*, about 450 μm long in 1887 and 490 x 310 μm for the female in 1904) as well as on the differences noted in the formation of the peritreme. A photograph of the peritreme of the male of *canadensis*, Pl. I, #4, shows that the descending arm (second loop of Berlese) forms an acute angle with the larger loop of the peritreme whereas in *campomolendina* the curvature of the second loop forms a less acute angle and is more S-shaped, see his Figure 6.

In 1923 VITZTHUM: 132 noted the similarity between the chitinous bands found in the female operculum of his *sociata* with that of *campomolendina* but stated that there was no question of synonymy because of the greater size of his *sociata*, 495-550 μm .

GREIM, 1952: 114, (unpublished doctoral thesis), writes the following concerning the possible synonymy of *campomolendina* with Vitzthum's *Uropoda sociata*, 1923:..."Vitzthum doubted the synonymy of the two because of the smallness (450 μm) and the place of origin of the Berlese specimen, but Berlese gave in 1905 a larger size for the female, namely 490 μm , *sociata* measures 495-550 μm The length and width of specimens found by VITZTHUM and myself fall between *campomolendina* and the subspecies *canadensis*. The variation in size between the females is about 100 μm , an acceptable range found in many uropods. Thus, one can accept that one is dealing with a single species. The locations in forest moss and bark are not grounds for doubting the synonymy."

In 1961 HIRSCHMANN & ZIRNGIEBL-NICOL: 34 listed three Berlese species as being related to *sociata*: *campomolendina*, *campomolendina* var *canadensis* and *latina* on the basis of the chitinous bands found in the female operculum.

In 1979 HIRSCHMANN (F/26: 44) raised *U. campomolendina* var *canadensis* to the species level under the genus *Trichouropoda*. HIRSCHMANN & WISNIEWSKI, 1987: 51 in their revision of the Genus *Trichouropoda* placed the species *Trichouropoda campomolendina* and *Trichouropoda canadensis* in the *sociata* Group.

4. *Urododa canestriniana*: Slide: 1 Myrm./39: Pl. I. 1. female-ventrum; 2-3. female-dorsum
1891: Fasc. 58, N.4
1904: 368

Berlese first described *canestriniana* under the genus *Uropoda* in 1891; in 1904 he redescribed it as *Trachyuropoda* (*Leonardiella*) *canestriniana*. The genus *Trachyuropoda* was created in 1904 to accommodate the species *festiva* which he had described in 1888. Since then *canestriniana* has been listed by various authors either as *Trachyuropoda* or *Leonardiella*.

His 1891 publication has three illustrations of *canestriniana*, the dorsum, the female ventrum and the male ventrum. His description and comments translate as follows: "... brick colored, subtriangular, rounded posteriorly with broad, splendid, chitinous lamina at the margins, rough derma, about 550 μm long.

Habitat: in ants' nests, near Naples, (Portici).

"Body subtriangular, pointed anteriorly, broad posteriorly, almost straight or slightly arched. At level of legs IV the margins curve inward. Anteriorly and up to legs IV the margins with chitinous, subhyaline lamina, striated transversely and wavy; dorsum slightly convex, very shiny, with pitted derma.

Male: (Fig. 3) very small, round genital opening located between coxae III.

Female: (Fig. 2) subtriangular genital shield, with a straight posterior margin at the origin at legs IV, pointed anteriorly as far as I could see, where it became indistinguishable from other parts of the derma.

Collected in May.

"I wanted to dedicate this very beautiful species with the greatest respect to Professor CANESTRINI, the prince of acarology."

Berlese's 1904 description contained more information and included the following details: "...The 'crest/lamina' is well expanded up to after legs IV with a wavy margin, and curves inward after legs I and II ... [behind coxae IV] the margin of the body angles outward with a well arched and wavy extension. Dorsum almost flat, dorsal shield triangular in the middle but toward the incisions in the margins it is arched, the posterior part being really wider than the anterior one. From the lateral incisions [at the level of coxae IV] a dorsal line proceeds transversely, arched slightly anteriorly, separating the whole shield into two parts. From this originates a series of closely spaced, longitudinal 'wrinkles' [see his Fig. 67]. Posterior part of dorsum, near the extreme margin, with wide knobs subparallel to the edge of the margin [see his Fig. 67]. Derma punctuated with sparse setae, shorter on the dorsum, especially in the middle. Shield's margin rather smoky in color, especially where it dips. Peritremes hardly visible ... Ventrums shiny, with no knobs. There is a depression of unknown nature suboval and irregular, just after coxae IV (internally), in which several spiny appendages [?] are present, directed anteriorly and posteriorly.

Male with rather small, round genital opening between coxae III.

Female with triangular-lanceolate, anteriorly pointed epigynum, extending quite beyond the anterior coxae, pressed against the anterior margin of the sternum, with posterior margin truncated, ending in the middle of coxae IV.

Male about 550 μm long; 380 μm wide - *Female* about 600 μm long; 450 μm wide.

Habitat: ants nests (genus ? species ?) in south Italy".

This same 1904 publication included three illustrations similar to those published in 1891 but with more details. For instance a dorsal view, Fig. 61, shows the transverse line separating the two portions of the dorsum and the creases/folds along this line. In this same figure, parallel to the posterior margin, he has indicated a structure to represent the 'knobs' described in the text; in his Figs. 68 and 69, ventral views, (male and female respectively), a pair of dark patches posterior to coxae IV is outlined indicating the positions referred to by him as 'internal pits' with "spiny appendages".

The writer originally studied *canestriniana* in 1952 and at that time found the two males and single female specimens on the slide mostly intact. Since then they have been slightly damaged. From the present study, see Pl. I, #1-3, the following observations can be added to

Berlese's original descriptions: it would seem, for instance, that the dark patches indicated in his Figs. 68 and 69 and described by him in his 1904 publication as 'pits (or depressions)' just posterior to coxae IV appear to be muscles that traverse the body from the ventral to the dorsal surfaces. If so, these muscles, upon contraction, would facilitate the bending/ buckling of the lower part of the dorsum along the transversal line separating the anterior and posterior portions of the dorsal shield. The small series of 'dart' shaped structures, visible within these masses, see Pl. I, #1, and described by Berlese as 'spiny appendages', could possibly form part of a system responsible for emitting some sort of odor, bringing to mind Trägårdh's proposed hypothesis with regards to the trachyropods. Writing in 1952: 82, he suggested that the "very peculiar furrows in the dorsal shield" might in some way be connected with myrmecophilous habits. Making the parallel with myrmecophilous insects, he wrote: "many myrmecophilous insects are provided with special organs which emit a smell agreeable to ants which are seen to lick the cuticle of these organs almost fervently. Therefore it seems conceivable that the cuticle in the bottom of the furrows of *Trachyropods* is penetrated by pores through which a smell is emitted....". Could a similar hypothesis be imagined for the dorsal furrow and peculiar structures here seen in *U. canestriniana* ?

With regards to the very expansive, wavy crest surrounding the anterior portion of the dorsal shield and gnathosomal region, described and illustrated by Berlese, the writer's study of the region suggests that it is formed by the elaborate development of the ventro-lateral plate for the accommodation of leg grooves I - IV and becoming/forming the vertex more anteriorly, see GORIOSSI-BOURDEAU, 1993: Pl. VIII, Figs. 1 & 2, and Pl. XI. It is not clear how Berlese interpreted the relationship between the dorsal plate and the surrounding wavy 'lamina'.

The illustrations of the ventral surfaces of *canestriniana* in both of his publications show the outline of the massive grooves for legs I to IV as well as the vertex. They show as well the point of separation between the 'laminal' formation anterior to legs IV and the 'laminal' formation posterior to legs IV, see his Figs. 2 & 3 in the 1891 publication and Figs. 67 - 69 in the 1904 publication. One has the impression, however, that Berlese felt that this 'laminal' formation, anteriorly and posteriorly, was in some way related to the dorsal shield perhaps as an extension of it. As photographs of the dorsal surface show, see #2 and #3 on Plate I, this is not the case: anteriorly, the laminal formation is formed by the expanded margin of the ventro-lateral plate, which houses legs groove 1-IV, projecting beyond and below the margin of the dorsal shield; posteriorly, it is formed by the expanded margin of the ventro-anal plate. Separating, of course, the ventral and dorsal surfaces is the unseen connecting shield, see GORIOSSI-BOURDEAU, 1993 (cs).

Plate I, #1 shows the triangularly-shaped genital plate and the three pairs of genital setae. Note arrows indicating the barbed-like structures associated with the internal muscles.

Concerning the generic placement of *canestriniana*, EVANS and TILL in 1979: 219 give the following distinguishing characteristics for separating the genera *Leonardiella* and *Trachyropoda*.

Leonardiella Berlese, 1904 - opisthogaster with a pair of sub-circular setae-bearing depressions; idiosoma usually constricted posterior to coxae IV (Fig. 56 (e), (f).
type species: *Uropoda canestriniana* Can. & Berl., 1884.*

Trachyuropoda Berlese, 1888 - opisthogaster without setae - bearing depressions; idiosoma not constricted posterior to coxae IV. incl.: *Michaeliella* Berl., 1904; *Urotrachytes* Berl., 1904; *Urojanetia* Berl., 1913.
type species: *Trachyuropoda festiva* Berl., 1888.

* It should be noted that EVANS and TILL incorrectly attributed *canestriniana* to CANESTRINI and BERLESE, 1884; it should read BERLESE, 1891.

My own observations indicate that one cannot accept the criteria - opisthogaster with setae-bearing depressions - as justifiable for recognizing the species *canestriniana*. There are no 'subcircular setae-bearing depressions' on the opisthogaster as far as I could determine. My interpretation of Berlese's observations has been noted above. One must assume that the type specimens were not examined by Evans or Till and that much of the criteria for the genera were based on either Berlese's illustrations or partial descriptions or both.

Of the two illustrations in their work: (f) would appear to be derived partially from that of the female, Fig. 69 of Berlese's 1904 publication, although the pair of unlabelled 'structures' shown lateral to the anal opening is nowhere to be found in Berlese's drawings or on the types I have examined. Their Fig. (e), is taken from VITZTHUM'S 1929 work, Fig. 44. No acknowledgement is given in their work regarding either source. The 1985 work manual, "The Acari, a Practical Manual", published by Evans et al, carries the same (f) and (e) figures with the same notations and again with no indications as to the source of the material.

5. *Deraiphorus canestrinii*: Slide 37/17: Pl. III, 1-3, fe.- gnath.; S1. 37/16: Pl. IV, 1-2, 1905: 160, Tav. XV, #18 fe.-dor., 3. male-peri.; S. 37/17: Pl. V. fe., 1-2 (ven.); 3. male-ven.

Berlese did not designate a type on any of the four slides of *D. canestrinii* in the acaroteca. Slide no. 37/17 has one male and two females. The female from this slide, studied here, I designate as the type and the male from this same slide as the allotype.

D. canestrinii, a large, curious looking mite, was sent to Berlese by Kraepelin from Buitenzorg, Java. A translation of his description reads as follows: "Ochre-colored, triangular with posterior angles tapering to a cone; peritreme folds well evident laterally and sculptured slightly in relief; there is a conical knob rather evident on the side of the body ... after leg III; anterior part of the body tapering into a hairy, slightly elevated end. Medial dorsal shield very pitted with lateral depressions and with one slight depression in the middle. Side of whole body with knobs bearing recurved, conical setae; anterior legs exceeding the median width of the body. Triangular female epigynum forms acute angles posteriorly, its truncated, straight, basal margin is between coxae 3 & 4; anteriorly, it reaches the tip of coxae II. Small, round genital opening of male lies between 3rd coxae. Deutonymph less triangular, more elongated, rounded posteriorly, pentagonal; posterior angles tapering steeply into a cylindrical cone;

middle parts more elevated than the peritremes, short setae at the margin as in the adult. Protonymph with anterior rhomboidal dorsal shield, rounded posteriorly with long setae, mainly on posterior margin; with frail but quite long peritremal knobs, cylindrical in the middle, bearing setae at the apex more posteriorly, clear, earth-colored (fig. 18). About 1100 μm long.

Habitat: I've seen several specimens collected from Buitenzorg [Java].

"OBSERVATIONS: The species quite resembles *D. chyzeri* Can. from New Guinea but differs by the scapular cones, the shape of the posterior cones, as well as the set of marginal setae, etc. It is not possible to admit that features of such importance and so obvious would have escaped Canestrini and his graphic artist."

In HIRSCHMANN & ZIRNGIEBL-NICOL 1969: 130 the following measurements are given for *D. canestrinii*: deutonymph- 835 x 675 μm ; female-1160 x 895 μm (including posterior angles); male-1085 x 850 μm (including posterior angles). Included as well is an illustration of the dorsal surface of a female, Taf. 19, #155 (see Pl. 2, 1969). Both the illustration and the measurements were made by ZIRNGIEBL-NICOL, but she did not include the slide number from which the studies were made.

In 1973: 83, ZIRNGIEBL-NICOL gave a brief description of *D. canestrinii*. As noted in the above paragraph, her illustration of the dorsal surface of the female along with measurements of the different stages of development had been published in 1969 under HIRSCHMANN & ZIRNGIEBL-NICOL. Her description of the dorsum follows: "The extended anterior end is slightly slit; the anterior marginal shield is not fused with the dorsal shield; in the anterior area is a cap-shaped depression; the postdorsal [shield] is tub-shaped; peritreme at the lateral edge of the animal has a strongly, forward extending protuberance; more posteriorly there is another smaller protuberance, see figure [referring to 1969 publication] Taf. 19, #155; the corners of the posterior side are in the shape of lobes already visible on the deutonymph; dorsum (according to Berlese) with small areas with pores; postdorsal is grooved or striated".

Shown in her 1969 illustration, within the outline of the body of *canestrinii*, is a palm-like structure with three recurved setae and a singular long seta, see Pl. II, 1969, 155 RW. She did not label or explain this structure in her description.

In 1977: 12-13, HIRSCHMANN described *D. canestrinii* from syntypes (1 female, 1 male) found in the Chelicerata Collection at the Zoological Museum in Hamburg, Cat. No. 156. He says the specimens were sieved from moss, collected by C. M. KRAEPELIN in March of 1904 from Buitenzorg, Java. He reports that the 52 species collected by KRAEPELIN have numbers 151 to 202 and that *canestrinii* is number 168.

HIRSCHMANN description of the syntypes follows: "Size: female-1220 x 990 μm ; male-1150 x 950 μm . *Gnathosoma*: male-corniculi horn-shaped; pointed, smooth laciniae about as long as the corniculi; anteriorly the longitudinal strips of the hypostomae are toothless; the posterior hypostomal section is fused, with three pairs of transversal rows of structural double arcs; smooth C1, C2, C3; C1 is slightly longer than C3; digit round, in the shape of a finger see Pl. II, 1977, 3HM, 3 CHM.

"*Dorsal surface*: adult: broad, pear-shaped of the chyseri-type, with a clearly formed "collar" consisting, on either side, of about 10 sickle-shaped marginal setae on round knobs and with peritreme and lateral side protuberances ... posterior knobs nose-shaped and somewhat protruding from the posterior side of the body; sickle-shaped marginal setae on rounded knobs; the marginal plate anteriorly fused with the dorsal plate; the marginal inner side partly crenated; circular structural grooves surrounding structureless areas; posterior side of the dorsal plate with a chitinized transversal garland; postdorsal plate having bands with grooves; dorsal setae needle-shaped, broader at their base, distally bent; peritremal loops directed to the back, see Pl. II, 1977, 3 RM.

"*Ventral surface*: adult: sternal and ventral areas with circular structural grooves, wavy endopodal line near coxae IV, in female also near coxae II. *Female*: broad sugarloaf-shaped operculum with rounded corners between middle of coxae II and posterior side of coxae III; area around operculum without any structure. *Male*: circular operculum between coxae III, see Pl. II, 1977, 3VM, 3VW.

When G. CANESTRINI erected the Genus *Deraiphorus* in 1897 he gave the following characteristics for the genus..."Body more or less triangular with chitinous prolongations at the shoulders and laterally at the sides in the shape of horns ... At the anterior extremity of the body is a collar (collare) formed of setae". His choice of the name *Deraiphorus* for the genus, placed in a footnote, is taken from the word "Deraion, collare". He included no illustrations and only briefly described the three new species belonging to the genus: *D. chyzeri*, *D. biroi* and *D. elegans*. His description of *D. chyzeri* says that "at the edges, anteriorly and laterally to the rostrum is a type of collar of setae". For *D. biroi* he describes the 'collar' formation as being simpler than that found in *D. chyzeri* and for *D. elegans*, he described the 'collar' as formed with "simple and bifurcated, ciliated setae".

In 1973: 142 Pecina redescribed *D. chyzeri* including illustrations of the dorsal and ventral surfaces of the male and female, Figs. 5-8. Part of his description reads as follows: "Dorsum with complete marginal shield fused with the ventral one. Four pairs of processes or tubercles are on the margins of the body. The first pair of projections is large, comb-like, with setae on each tooth excepting the two basal ones ... Behind the combs, probably in the first third of the total body length, there are the humeral tubercles (shoulders) with the loops of peritremes. The third pair of tubercles, approximately of the same size as the shoulders, is situated at half length of the body. At the level of the postdorsal shield, there is a fourth and largest pair of backwards situated lateral processes".

Dumrow, 1956-57: 211, in his redescription of *D. biroi* Can., describes the dorsum as having a..."bifurcate anterior process with eight sinuous, ciliated setae".

In all illustrations made by the various authors of *D. canestrinii* there is no clear notion of the relationship of the various components making up the dorsum, the collar formation projecting anteriorly beyond the dorsum or the ventral surface. Most illustrations even leave the impression that the collar-like formation could be part of the dorsum.

From my own observations, the following remarks and additions can be added concerning the anatomy of *canestrinii*: *Gnathosoma* : Pl. III, 1-2, slide 37/17, female. A dorsal, internal view of the gnathosoma shows the delicate looking, very long hypopharyngeal process (HP), the floor of which, would be contiguous with the floor of the pharynx. Aligned along the middle of its internal surface is a series of short, pointed, hook-like structures (B), eight, of which, are visible. They extend, anteriorly, to the level between the genu and the tibia of the pedipalps. Here the hypopharyngeal structure narrows, then flares slightly to terminate in a slender point. From its base to the point where it begins to narrow, the margin of the hypopharyngeal process has evenly spaced, rather strongly developed, tooth-like projections. More anteriorly the margin is lined with slender, brush-like, willowy extensions. The entire structure would seem to be about as long as the pedipalps. DUMROW, 1956-57: 212, Fig. C, in his redescription of *D. biroi* labels the hypopharyngeal structure as the tectum. See BOURDEAU-GORIOSSI, 1989: 201 for terms used by various authors to designate this structure.

Projecting dorsally and medially above the hypopharyngeal processes are two very slender stylets (SS) which I have interpreted as being the salivary stylets. Hirschmann, in his description of the gnathosoma of *D. canestrinii*, referred to these as "two smooth laciniae about as long as the corniculi". Ventral to the hypopharyngeal processes and the salivary stylets are the medially-curved, corniculi, Pl. III, #3 (C).

Dorsum: Pl. IV, 1-2, slide 37/16, *female*. The dorsal shield is made up of a very pitted centro-dorsal region (CDR) fused anteriorly with the marginal region (MGR). The anterior margin of the marginal shield is rounded. The narrow, non-pitted, latero-dorsal regions (LDR) between the centro-dorsal and marginal regions of the dorsal shield originate slightly posterior to the anterior edge of the centro-dorsal region, see GORIOSSI-BOURDEAU, 1993, Pl. V, Figs. 1-3, CDR, LDR, MGR. The centro-dorsal region of the dorsal shield broadens to a wide base just anterior to the separate, narrow pygidial shield. ZIRNGIEBL-NICOL, 1973: 83 says the marginal shield is not fused anteriorly with the dorsal shield. My own observations would seem to indicate that the marginal shield is fused anteriorly with the dorsal shield. Pecina, 1973, says that "the complete marginal shield is fused with the ventral ones". I would tend to question this since the dorsal and ventral surfaces are usually separated by a connecting shield, see GORIOSSI-BOURDEAU, 1993, Pl. V, Fig. 6 (CS).

The collar: Pl. IV, 1-2, slide 37/16, *female* (C). In *D. canestrinii* the collar is formed by two anterior, massive, medially curved lobes projecting well beyond the dorsum with rather long, bifurcated, medially-directed setae on elevated setal bases. Posterior to the lobes, the setae are shorter and mark that section of the ventral surface, which, for the sake of continuity in nomenclature, I have designated as the most anterior portion of the ventro-lateral plate, see GORIOSSI-BOURDEAU, 1993, Pl. VII (V). As far as I can determine, it seems possible that the 'collar' formation could be independent of the dorsum and really be a prolongation from the ventro-lateral plate. Ventral and projecting between the ends of the collar are four long, pointed spear-like setae (S). These could in some way be part of the scabellum.

Concerning the four 'tubercles', 'knobs' or 'bulges' projecting from the margin of all species in the genus *Deraiphorus*, referred to by authors from CANESTRINI onward, the most anterior of these are the lateral projections of the 'collar'; posterior, in the upper third of the body, are the prominent humeral projections containing the loops of the peritreme as they curve dorsally from the ventro-lateral plate, see Pl. IV, #3 (P); the 'bulges' located at about the center of the body, have never been explained by any of the investigators. My own interpretation is that these 'mark' the position on the ventral surface of leg grooves IV, see Pl. V, #1 & 3 (LG), indicating, as well, the posterior limit of the ventro-lateral plate and its hypothetical 'division' from the ventro-anal plate, see GORIOSSI-BOURDEAU, 1993, Pl. II, Fig. 1, Pl. IV, Fig. 3 (D). In the species *canestrinii* the most posterior of these 'bulges', which have the appearance of small paddles, project laterally from the ventro-anal plate at about the level of the opening of the anus. It could be these 'paddles' that ZIRNGIEBL-NICOL illustrated and did not label in her 1969 illustration, see Pl. II, 1969, #155 RW.

Ventrum: Pl. V, 1-3, slide 37/17, *female* and *male*. The following details can be added to the already rather complete descriptions of the ventral surfaces of both the female and male. Figure 1 of the female shows the well developed legs grooves of coxae IV (LG) and the numerous elliptical pits which dot the ventral surface (small arrows). In Fig. 2 one can see the anterior edge of the genital plate, its relationship to the camerostome and the base of the tritosternum (TRT). faintly visible is the anterior edge of the sternal plate (SP) and three pairs of sternal setae (small arrows). The male, Fig. 3, shows the small, round operculum between coxae III, the series of elliptical pits which dot the ventral surface (small arrows), the well developed leg grooves IV (large arrows) as well as the anal aperture (A).

6. *Uropoda caputmedusae*: Slide 21/49: P1s. III-dorsum; IV-ventrum; V-gnath., chel.,peri.
 1901: 25
 1903: 109

The first description of *U. caputmedusae* appeared in the 1901 issue of *Zoologischer Anzeiger*, Vol. 25: 14 in an article BERLESE and G. LEONARDI co-authored. Although BERLESE & LEONARDI co-authored the article, "Acari Sud Americani", Berlese should be credited with the species which is listed as *Uropoda caputmedusae* Berl. n. sp. This has caused some problem with writers who often attribute it to both Berlese and Leonardi. In 1903 a reissue of the same article appeared in the *Revista Chilena de Historia Natural* as "Descripcion de Nuevos Acaridos", evidently as a special favor for DR. R. SILVESTRI. CASTAGNOLI & PEGAZZANO 1985: 63 list *U. caputmedusae* as *Comydinychus caputmedusae*. Berlese established the genus *Comydinychus* in 1917, Redia 13: 11 in the family Uropodidae under Tribus IV-*Trachyuropodini* with *Uropoda caputmedusae* as the type.

While Berlese did not include illustrations of *caputmedusae* in his two publications he made a sketch of the species in his notebook, page 483, which is included here, Plate I.

A translation of Berlese's description for the species reads as follows: "Brick-colored, almost spherical, with shoulders. Arranged radially at sides of ventrum are about 35 long setae, the tips of which are directed posteriorly. At the margin of the dorsum are about 9 flaps (aucta) with spine-shaped strips which are subparallel to the margin and pressed against it as well as

4 'aucta' with longer, pilose setae. On the dorsum near the posterior edge are small swellings carrying several opposing, tightly packed, circumflex setae. Dorsal shield is ovate, scalloped at the margin with small, pilose setae; it is covered in the middle with longer setae.

* I saw a male: 850 μm long, 750 μm wide.

Habitat: Temuco (4, IV. 1899)".

* It should be noted that the specimen on slide 21/49 is a male and not a female as listed in CASTAGNOLI & PEGAZZANO, 1985: 63.

Caputmedusae was illustrated in 1969, F/12:69, Tav. 13, 14, #107, in a publication by HIRSCHMANN & ZIRNGIEBL-NICOL and in 1972 a description was given by ZIRNGIEBL-NICOL. There is little doubt that ZIRNGIEBL-NICOL was responsible for the illustrations since HIRSCHMANN never went to Florence.

ZIRNGIEBL-NICOL'S 1972 description includes the following details: "*Hypostome*: small, smooth laciniae, triangular lobes; coxal setae are interrupted, inner sides are drawn out in a knob-shaped structure anterior to C-1; the interior sides of the anterior portion of the deutosternal strip is reinforced with strong teeth, from there an arch with teeth goes toward C-2; the deutosternum has 4 transversal rows of very tiny teeth; from the first of these there is a structural line on either side. *Chelicerae*: correspond to the genus type. *Epistome* and *Tritosternum*: could not be examined. *Dorsum*: the dorsal surface with regards to setae distribution and dorsal shield resembles *Discourella sellnicki*, but the setae are somewhat longer. *Ventrum*: There is a metapodal line; the leg grooves are rather shallow; the circular operculum is between coxae IV; v-setae are shorter than V-setae." See Plate II.

When I first studied this species in 1952, the specimen was intact. In the meantime it has been dissected. What remains on the slide is the torn idiosoma and portions of the dissected gnathosoma. My illustrations made in 1952 are included in Plate I, #1 & 2.

Following is a redescription of the male of *caputmedusae* from the type: *Dorsum*. The dorsal and marginal shields are fused anteriorly, Pl. I, #2; Pl. III, #1. *Dorsal shield*: The rim of the dorsal shield is slightly scalloped. There are about 7 pairs of short, smooth setae on the upper fifth part of the shield, Pl. I, #2. The setae occupying the central portion of the shield are medium to long. Lining the inner, lateral margins of the dorsal shield are 12 slender, needle-shaped setae, the most anterior of which is located posterior to where the dorsal and marginal shields join, Pl. I, #2. They are evenly spaced and extend posteriorly to the rim of the dorsal shield where the dorsal shield thickens forming on both sides a pair of short, heavily sclerotized bars, Pl. I, #2, Pl. III, #1-3. These 'bars' would seem to serve as 'anchors' for a chitinous frame which houses a transverse, oval depression at the base of the dorsal shield. Projecting from the anterior surfaces of the sclerotized bars are five, tightly packed, robust, very long, smooth setae that reach far beyond the posterior edge of the body. Closely associated with these are two, anteriorly directed, similar setae, Pl. I, #2.

Within the lateral rims of the oval depression projects a concentrated mass of 10 to 12 pairs of long, slender, tentacle-like 'setae'. The term 'setae' may not be correct for these elongations since it is difficult to determine the presence of setal bases. They may simply be finger-like extensions from the lateral walls of the oval depression. Posterior and parallel to this

depression is a heavily sclerotized, curved rim which seems to be part of and contiguous with the marginal shield. From the center of this rim, and projecting into the depression of the dorsal shield, are several long, whip-like 'setae', Pl. III, #3.

Marginal shield: The interior rim of the marginal shield is slightly scalloped with radiating striations, Pl. I, #2, Pl. III, #1-2. It surrounds the lateral and posterior margins of the dorsal shield and, as described above, its middle, posterior region forms a basin/depression which 'hems' the oval depression of the dorsal shield. The specimen on the slide shows four large setal bases at the posterior rim of the marginal shield, Pl. III, #3 (arrows), where, when first examined, four long, slender, smooth setae were present, Pl. I, #2, Pl. II, 107-RM. From the sides of the marginal shield extend 9 long, slender, smooth setae, Pl. I, #2, Pl. II, 107-RM. Associated with these setae and projecting beyond the margin of the shield or lying against it are 10 to 11 thin, rectangularly-shaped, chitinous, flap-like structures, the 'aucta' of Berlese, Pl. I, #2, Pl. II, 107-RM, Pl. III, #1,2 (arrows). I was unable to find the 4 'aucta' with longer, pilose setae mentioned by Berlese.

Ventrum: Berlese described the 35 long setae arranged radially at the sides of the ventral surface, Pl. I, #1, Pl. II, 107-VM. The setae are evenly spaced, medium long, extending posteriorly to about the same level as the most posterior chitinous flaps of the dorsal surface. Endopodal lines begin between coxae II & III and extend to the middle of coxae IV. Metapodal lines begin at about the center of coxae IV and curve laterally to the edge of the body Pl. I, #1, Pl. IV, #1, 3. There are five pairs of sternal setae, Pl. IV, 1-3 (arrows). At the lateral ridge of the sternal plate, posterior to sternal setae I, is a series of five pit-like structures. The circular genital opening is at the level of coxae IV. The leg grooves appear to be shallow but well developed. Scattered over the ventral surface are pit-like formations, some in small clusters of 3 to 5. There is a well developed scabellum (S), Pl. IV, #1.

Gnathosoma: Three hypostomal setal bases are still visible from what remains of the gnathosoma in the damaged specimen, Pl. V, #1 (arrows). Plate V, #2, shows the digits of the chelicerae and the stigmata portion of the peritreme.

HIRSCHMANN, 1972, F/18:26, identified and classified 22 new *Discourella* species from South America: seven are from Chile, none, however, from Temuco, the area from which *caputmedusae* was found, twelve are from Brazil, one from Paraguay and Brazil, one from the Island of Sindi, Sarso in the Red Sea and one did not have a place of origin listed.

In writing a key for the Genus *Discourella*, HIRSCHMANN, 1972: 27, used characteristics of the dorsal shield as a basis for separating the 22 species into 11 *Dorsal Shield Groups*. *Caputmedusae* along with *sellnicki* and *caputmedusaesimilis* were placed into Group 9, characterized as having an "unbroken posterior marginal shield" and a post-dorsal area with a "hairy chitinous depression". The species *anemoniae*, *solaris* and *porula* were classified under his Group 7, i.e., "marginal area interrupted posteriorly". From HIRSCHMANN'S illustrations it is difficult to ascertain precisely what the fine limit is between a "broken" and "unbroken" marginal shield. What is evident is that *anemoniae*, *solaris* and *porula* all have the similar "hairy" depression as found in *caputmedusae* and all are from Chile.

ACKNOWLEDGEMENTS

I am deeply indebted to Dr. Maurice FARRIER not only for reviewing and correcting the manuscript several times, but also for his invaluable criticism and input. I am very grateful to Drs. Fausta PEGAZZANO, Marisa CASTAGNOLI and Maria LIVIA LIQUORI (Istituto Sperimentale per la Zoologia Agraria-Sezione Acarologia) for their help and warm welcome during my visits to Florence. To Dr. Roberto NANNELLI, from the same Istituto, I am particularly grateful not only for guaranteeing the necessary material for study but also for remounting slides that could not have been studied otherwise as well as for the use of his microscope and photographic material.

I wish to thank Dr. Georges WAUTHY, head of the section "Insects and Arachnomorphs" at the Institut royal des Sciences naturelles de Belgique for his guidance in the preparation of the manuscript, Dr. Jackie VAN GOETHEM, the editor, for accepting the manuscript for publication and Mrs. Michele VAN ASSCHE for her help in preparing the illustrations.

CATALOGUE

The CATALOGUE section is arranged under four main headings: SPECIFIC NAME and NOTES, SYNONYMY, CITATIONS, LOCALITY:HABITAT and NOTES. Under SPECIFIC NAME and NOTES is the name of the species as originally used by Berlese. Under SYNONYMY, the evolution of combinations with generic names is shown as used through time. Under CITATIONS, the names of authors are listed in chronological order who have published information concerning that species. Included, as well, is information with regard to keys to species, genera, etc., plus an indication of the presence or absence of figures in the various publications. Under LOCALITY: HABITAT and NOTES, the collector's name is included if it was given.

The illustrations reproduced by the various authors are arranged according to year published, whereas, as mentioned in the COMMENTS, section the photographs and illustrations included by the author are listed as plates.

CASTAGNOLI & PEGAZZANO'S slide information as given in the 1985 "Catalogue of the Berlese Acaroteca" is reproduced. Any additions or corrections to be made to the CASTAGNOLI & PEGAZZANO material as well as the present state of the slides in question, i.e., if the specimens could be studied as such or if remounting was necessary is given under the heading UPDATE ON SLIDE INFORMATION & PHOTOGRAPHS TAKEN. Included with the information on the list of photographs presented, are the drawings made by the author.

With regards to the slides themselves, Berlese used primarily two media for mounting: Canadian balsam and a type of modified Hoyer's which he fabricated himself (gomma Berlese). He had also created his own depression slides for study of temporary mounts but which he sometimes used for permanent mounts (*Phaulodinychus amplior*). Most of the preparations have stood up amazing well, while with others, the mounting media has so deteriorated that no study is possible.

The following notes and explanations should be kept in mind when using the CATALOGUE:

1. Under 'citations', unless otherwise indicated, all refer to a Berlese publication.
2. [BWB: OO] refers to a page in the unpublished *Berlese Work Book* on the genera of the *Mesostigmata* found at the Acaroteca in Florence. A microfilm of this work book can be seen at the Acarology Museum at The Ohio State University, Columbus, Ohio, U.S.A, 564 pp.
3. To economize space throughout this work I have taken liberties to shorten wherever possible the authors' names, generic terms, localities, etc. without any intention to offend.

4. G-B: refers to GORIROSSI-BOURDEAU's drawing(s) or photographs. All photographs were taken using a Leitz, Diaplan, metric 101086 microscope equipped with a Wild MP 551 camera and a Wild Photoautomat MMP 545. The film used was Ilford, Pan F, 35 mm.
5. 'A DESC.' means that there is a description of the species in the publication; 'DESC.', alone, means that the species is mentioned along with other species belonging to the same genus, family or group, but the species is NOT described.
6. F/ 00 refers to a FOLGE of the Hirschmann-Verlag publication '*Acarologie*'.
7. The use of the '!' mark refers to an irregularity concerning the reference, such as a misspelling, wrong date, etc. The mark immediately follows the irregularity in question.
8. Discrepancies can and do occur with regards to pagination or volume of a Berlese publication depending on the use of an off-print or from a bound journal. I have tried to rectify such differences.
9. *Mn. I* refers to Berlese's *Manipulus I.* publication *Acari Nuovi*, 1903.
10. *Mirm.* refers to Berlese's '*Acari Mirmecophili*' publication of 1903.
11. (M): refers to a specimen missing in the Acaroteca.
12. Under the section labelled SYNONYMY, I tried not to repeat the name of the species unless I felt it helped in the sequence.
13. Under the section labelled LOCALITY: HABITAT, a locality listed as uncertain in a publication is not mentioned.
14. *CAT.* refers to a catalogue or checklist; *KEY* refers to a tool used for purpose of identification or classification of a group or a species.
15. In reproducing published illustrations, I have taken certain liberties such as increasing or decreasing the size of the original in order to better put into evidence the essentials of the morphology of the species in question. Illustrations which did not add significantly to the understanding of the morphology of a species were not included in this paper.
16. The use of brackets, [], indicates my interpretation.

<i>UROPLITELLA CALCEOLATA</i> Berlese, 1916

calceolata Berl., 1916	1916: Uroplitella calceolata	1916: Redia 12:140, no fig., a desc-----	Java(Samarang) (Cl. Jacobson)
	1967: Oplitis calceolata(H&Z-N:23)	1936: Lombardini, G., :50, a cat. 1967: Hir. & Z-N., F/10:23 1969: Hir. & Z-N., F/12:132,144, Taf.22,#180□	
	1971: Oplitis calceolata(H:14) idem: Uroplitella calceolata(H:27)	1971: Hirschmann, W., F/16:14,27, a cat.	
		1972: Hutu, M., F/18:103-----	OIM
		1973: Hir. & Z-N., F/19:131, a key idem: Zirngiebl-Nicol, I., F/19:37,43, a desc.	
		1974: Hir. & Hutu., F/20:34 1976: Hunter & Farrier:48 1978: Hiramatsu, N., F/24:67 1979: Hirschmann, W., F/26:55 1991: idem, F/38:14,18-19 1993: Wis. & Hir., F/40:52 idem: Wisniewski, J., F/40:278-----	O Om

Castagnoli & Pegazzano, 1985: 57
calceolata Berl.
Uroplitella

Redia XII, agosto 1916: 140

168/3, t, m, Samarang (Giava).

UPDATE ON SLIDE INFORMATION & PHOTOGRAPHS TAKEN

slide 168/3: male (remounted) Pl. 1, 1. male-ventrum; 2. gnathosoma; 3. corniculi, scabellum

UROPLITELLA CALCEOLATA Berlese, 1916

Plate I

Slide 168/3: 1. male-ventrum, note thick legs; genital setae, pores (5); sharp barbs on surface of tibia and tarsus of legs III & IV; 2. note gnathosomal setae, corniculus, anterior margin of perigenital border, setal base in exterior loop of border + sternal seta; 3. shows corniculi, position of scabellum, hypopharyngeal processes (?)

UROPODA CAMPOMOLENDINA Berlese, 1887

- camptomolendina Berl., 1887 1887: Uropoda campomolendina 1887: AMS.Vol.5,XLV,N.2,a desc.,-----It.(Campomolino
Figs.1-6 (Treviso)):moss
- 1892: Uropoda campomolendina 1892: AMS.Meso.:88a,a key,89-----Italy
(U.nitidae)
- 1894: Michael,A.D.,:306-----Eng.(Kensworth):
moss
- 1902: Oudemans,A.C.,:74,a key-----Hol.
- 1903: idem.,:141,idem.
- idem: idem:,4,12,-----Hol.(Nijkerk,
Utrecht):on sunny dike
- 1915: Urodinychus campomolendina 1915: Halbert,J.N.,:92-----Westport:under
(Ha:92) bark;Dublin,Wicklow:under
bark of decayed tree trunks
- 1918: Hull,J.E.,:47,a key,48
- 1920: Uropoda campomolendina 1920: Redia 14:AMS.,Indici
- 1923: Vitzthum,H.,:132
- 1936: Uropoda campomolendina(L:50) 1936: Lombardini,G.,:50,a cat.
- 1952: Pseudouropoda campomo.=Uropoda 1952: Greim,E.,:65,114,thesis,-----Ger.(Erl.):nest
sociata Vitz.,1923(G:114) unpub.,Univ.Erlangen) of Camponotus fallax
(formicoxen)
- 1953: Pseudouropoda(Lonchothura) 1953: Turk,F.A.,:14,a cat.
- campomolendina(T:14)
- 1954: Pseudo.camptomolendina(F:359) 1954: Franz,F.,:359-----Aus.(Haller Mauern):
heather with pines,(before valley of Schwar-
zenbach): rendsina soil under Ericetum (dt.Wi.:
identity in doubt due to lack of comp.with type)
- 1961: Trichouropoda campo.(H&Z-N:24) 1961: Hir.& Z-N.,F/4:6,24
- 1971: Trichouropoda campo.(H:19) 1971: Hirschmann,W.,F/16:19,25,cat.
- idem: Uropoda campomolendina(H:25)
- 1972: Leiodynychus campo.(E:198) 1972: Evans,G.O.,:198
- 1974: Hir.& Hutu,F/20:27,28,31
- 1989: Hir.& Wis.,F/36:2,8,10,24
- 1993: Wis.& Hir.,F/40:126
- idem: Wisniewski,J.,F/40:223,253,-----N Nn
256,267

Castagnoli & Pegazzano, 1985: 59

campomolendina Berl.

Uropoda

A.M.S.it., XLV (2), ott. 1887.

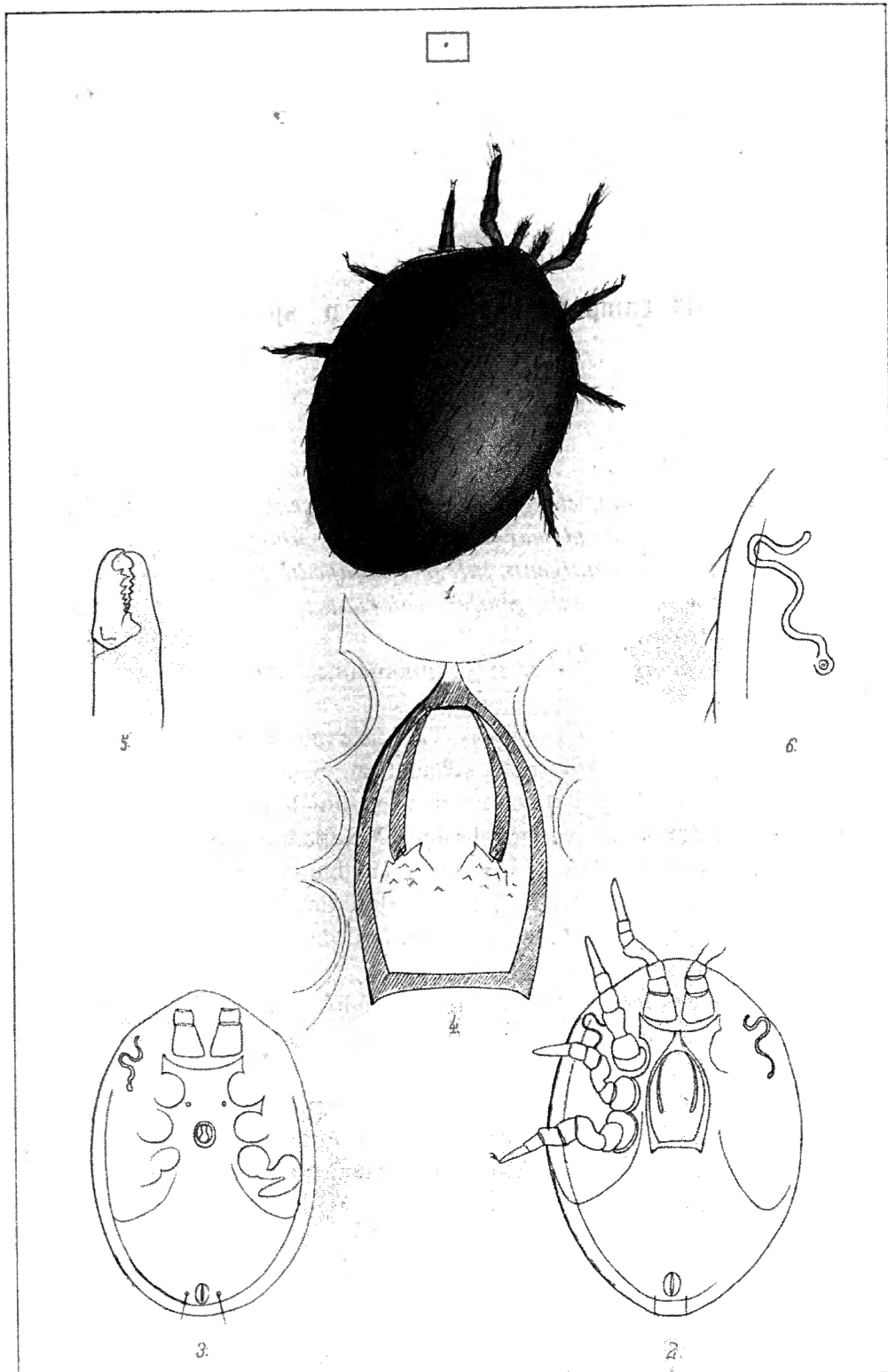
9/25, t, musco, Campomolino (Treviso); 20/4, t, f, Campomolino (Treviso);
20/5, m, f, nella terra Bertipaglia (Padova).

UPDATE ON SLIDE INFORMATION & PHOTOGRAPHS TAKEN

9/25, should read female, male, nymph

slide 9/25: Pl. I, 1. female-ventrum, 2. genital plate;
Pl. II, 1. male-ventrum, 2. chelicerae

UROPODA CAMPOMOLENDINA Berlese, 1887



Berlese DIS. INC. DIP.

2.

UROPODA CAMPOMOLENDINA B.N.SP.

45

1887: BERLESE, Fasc. XLV, N. 2: Figs. 1-6. 1-female (dorsum), 2-female (ventrum), 3-male (ventrum), 4-female (genital plate), 5-chela, 6-peritreme.

UROPODA CAMPOMOLENDINA Berlese, 1887

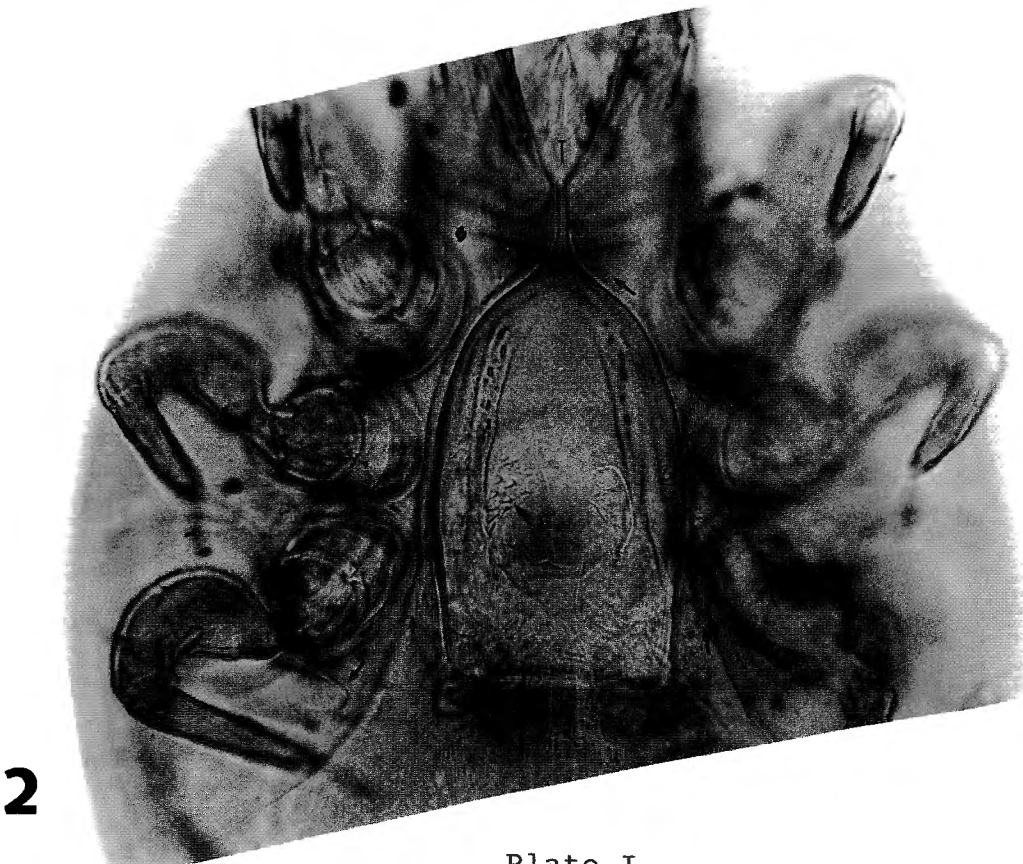


Plate I

Slide 9/25: 1. female-ventrum; 2. details: note spine of gen. pl., trito., genital sclerites & barbs, constrictor muscles, shallow tarsal groove, junction of meta. & endo. lines, genital/sternal setae.

UROPODA CAMPOMOLENDINA Berlese, 1887

1



2

Plate II

Slide 9/25: 1. male-ventrum; 2. chelicerae-note what appear to be filamentous excrescences on the chelae.

UROPODA CAMPOMOLENDINA var CANADENSIS Berlese, 1904

- | | | |
|--|---|---|
| <p>canadensis Berl., 1904
var campomolendina</p> | <p>1904: Uropoda campomolendina var
canadensis</p> <p>1971: Trichouropoda campomolendina
var canadensis(H:19)
idem: Uropoda campo.var canad.(H:25)</p> <p>1979: Trichouropoda canadensis (H:44)</p> | <p>1904: Redia 2:22, no fig., a desc.-----Can.: tree stump;
*(Cl. Tyrell)</p> <p>1907: Banks, N., :611, a cat.-----U.S.A.</p> <p>1917: Banks, N., :66 (manuscript)</p> <p>1952: Greim, E., 114 (unpub. thesis)</p> <p>1961: Hir. & Z-N., F/4:6, 34</p> <p>1971: Hirschmann, W., F/16:19, 25, a cat.</p> <p>1974: Hir. & Hutu, F/20:20</p> <p>1979: Hirschmann, W., F/26:44</p> <p>1987: Hir. & Wis., F/34:51</p> <p>1989: Hir. & Wis., F/36:2, 8, 10, 24</p> <p>1993: Far. & Hen., :180</p> <p>idem: Wis. & Hir., F/40:126</p> <p>idem: Wisniewski, J., F/40:223-----N Nn</p> |
|--|---|---|

Castagnoli & Pegazzano, 1985: 59

canadensis Berl. var.
Uropoda campomolendina Berl.

Redia II, luglio 1904: 22.

20/6, t, m, f, from a stump at Deschenes, Canada, Tyrrell!.

* Spelling as it appears in publication and on slide 20/6 is TYRELL.

UPDADE ON SLIDE INFORMATION & PHOTOGRAPHS TAKEN

slide 20/6: should read one female, two males

slide 20/6: Pl. I, 1. male-peritreme, 2. female-ventrum, 3. male-ventrum, tarsal grooves

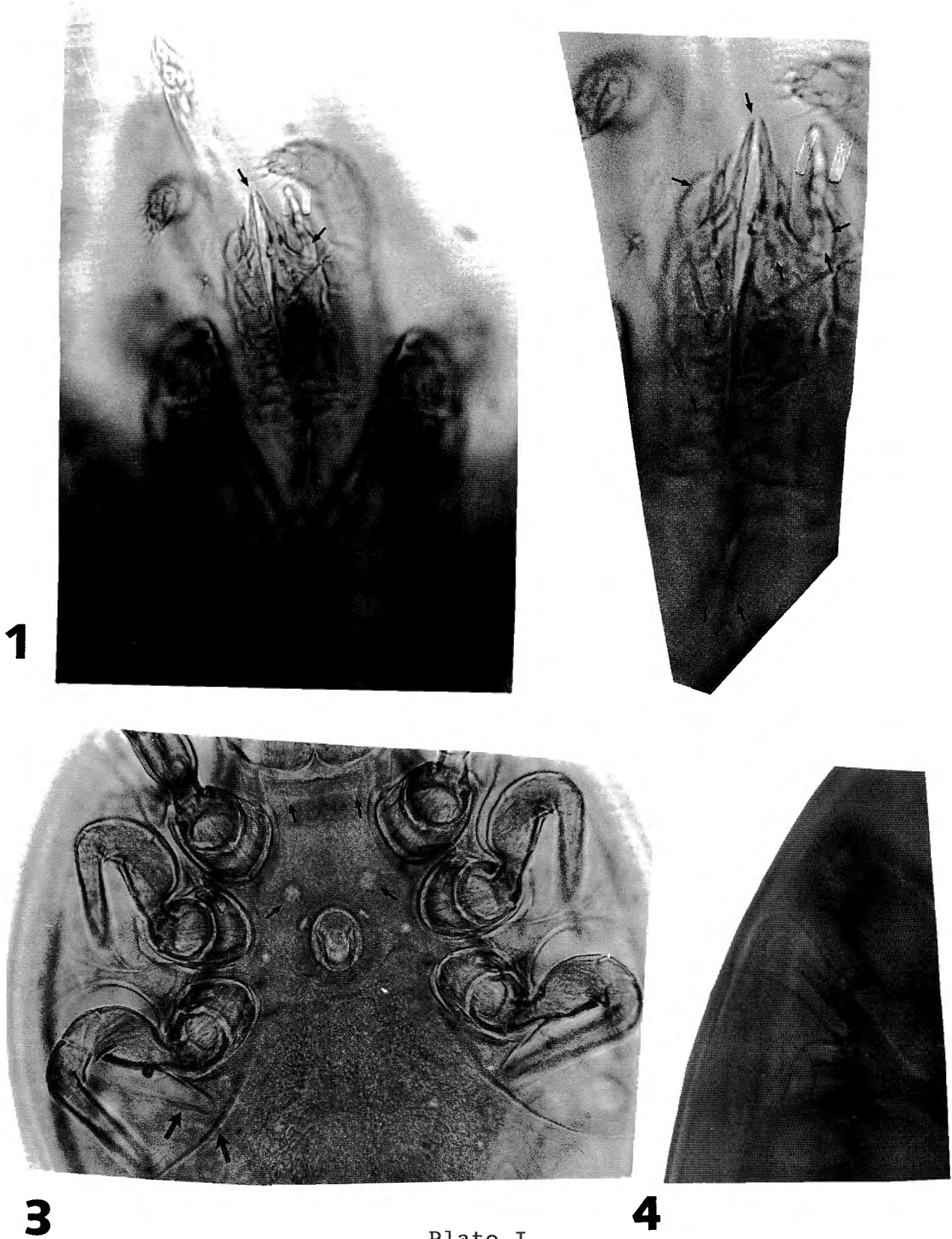


Plate I

Slide 20/6: 1-2. fem. - note 'spine' of gen. plate, trito., gnath. setae, corniculi, hypo. pro.; 2. gnath.; 3. male ven. - note sternal setae, hyaline-like 'discs', meta. & enda. lines, gen. setae, shallow tarsal grooves; 4. peri.- note acute angle (arrow)

UROPODA CANESTRINIANA Berlese, 1891
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- | | | |
|--|--|--|
| <p>canestriniana Berl., 1891
[BWB]:481(fem.)</p> | <p>1891: Uropoda canestriniana</p> <p>1892: Uropoda canestriniana</p> <p>1903: Trachyuropoda canestriniana</p> <p>1904: Trachyuropoda (Leonardiella) canestriniana</p> <p>1917: Leonardiella canestriniana</p> <p>1920: Uropoda canestriniana(=Leonardiella canestriniana)</p> <p>1920: T.(L.)canestriniana(D:25)</p> <p>1929: Leon..canestriniana(Vit:34)</p> <p>1955: Leon.canestriniana(#176)(Val.:12)</p> <p>1964: Trachy.canestriniana(H&Z-N:22)</p> <p>1967: Leonardiella canes.(H&Z-N:21)</p> <p>1971: Trachyuropoda canestriniana(H:18)</p> <p>idem: Uropoda canestriniana(H:25)</p> <p>1972: Trachy.canestriniana(Hutu:103)</p> <p>!1979: Leonardiella canestriniana Can. & Berl., 1884(E&T:219)(should read Berlese, 1891)</p> <p>1979: Trachy.canestriniana(H:53)</p> | <p>1891: AMS.Fasc.58,N.4,a desc.,-----It.(Portici):
Figs.1-3 with ants</p> <p>1891: Michael,A.D.,:640-----Corsica(Ajaccio):
with Tetramorium caespitum var meridionale,Emery;
in passages & chambers of nests, never on ants;
undersides of stones</p> <p>1892: AMS.Meso.:85,88(U.laciniatae)-----Italy
88a(a key)</p> <p>1892: Moniez,R.,:4-----Fr.(Lille):with
Tetramorium caespitum</p> <p>*1897: Leonardi,G.,:871</p> <p>1902: Oudemans,A.C.,:73,a key</p> <p>1902: Trouessart,E.:40</p> <p>1903: Oudemans,A.C.,:139</p> <p>1903: Redia I:249(Mn.I)</p> <p>1904: Redia I:303,367(a key),368,-----It.merid.:ants'
a desc.,Tab.XI,#67-69(Mirm.) nest</p> <p>1917: Redia 13:11,no fig.,no desc.</p> <p>1920: Redia 14, AMS.,Indici</p> <p>1921: Donisthorpe,J.K.,:25-----G.B.(St.George's
Well), N.Cornwall:with
Tetramorium caespitim</p> <p>1927: Donisthorpe,J.K.,:206,213</p> <p>1929: Vitzthum,H.,:34,a key,fig.44</p> <p>1936: Lombardini,G.,:43,a cat.</p> <p>1943: Vitzthum,H.,:785</p> <p>1950: Radford,C.D.,:48,a cat.</p> <p>1952: Baker & Wharton,:119</p> <p>1953: Turk, F.A.,:14,a cat.</p> <p>1955: Valle,A.,:12,cat.of Can.Acaroteca--Portici(Napoli)</p> <p>1957: Evans,G.O.,:248,key to gen.</p> <p>1964: Hir. & Z-N.,F/6:22,Taf.4,#205</p> <p>1965: Hir. & Z-N.,F/8:30,a key</p> <p>1967: Hir. & Z-N.,F/10:21</p> <p>1971: Hirschmann,W.,F/16:18,25,cat.</p> <p>1972: Hutu,M.,F/18:103-----Med.</p> <p>1974: Hir. & Hutu,F/20:31</p> <p>1975: Hirschmann,W.,F/21:103</p> <p>1976: Hirschmann,W.,F/22:5,8,a key</p> <p>1978: Wisniewski,J.,F/24:115-----Eng.,Fr.</p> <p>!1979: Evans & Till,:219,
key to gen.</p> <p>1979: Hirschmann,W.,F/26:53</p> <p>idem: Nicol,I., F/26:6</p> <p>1993: Far. & Hen.,:177</p> <p>idem: Wis. & Hir.,F/40:87</p> <p>idem: Wisniewski,J.,F/40:252,253,267-----P Pe,P Pm</p> |
|--|--|--|

UROPODA CANESTRINIANA Berlese, 1891

*Leonardi, 1897: 871: reports that they were never able to find U. canestriniana in Portici despite looking in the exact spot where Berlese had found it 3 or 4 years previously. Leonardi gives the species of ant as having been Camponotus aethiops Latr.

Castagnoli & Pegazzano, 1985: 59

canestriniana Berl.

Leonardiella

A.M.S.it., LVIII (4), genn. 1891 (Uropoda canestriniana).

Redia I, nov. 1903: 249 (Trachyuropoda canestriniana).

Redia I, 1904: 368 (Trachyuropoda (Leonardiella) canestriniana).

Redia XIII, agosto 1917: 11 (Leonardiella canestriniana).

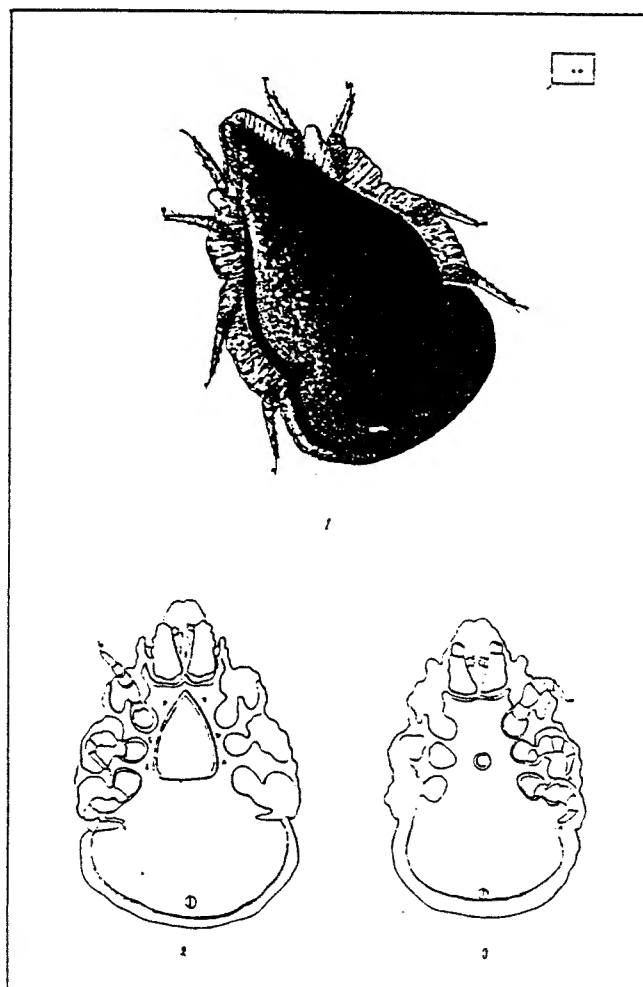
1 Myrm./39, t, m, f, formicai, Portici

UPDATE ON SLIDE INFORMATION & PHOTOGRAPHS TAKEN

slide 1 Myrm./39, t, should read 2 males & 1 female

slide 1 Myrm./39: Pl. I. 1. female-ventrum, 2. dorsum, 3. dorsum-anteriorly

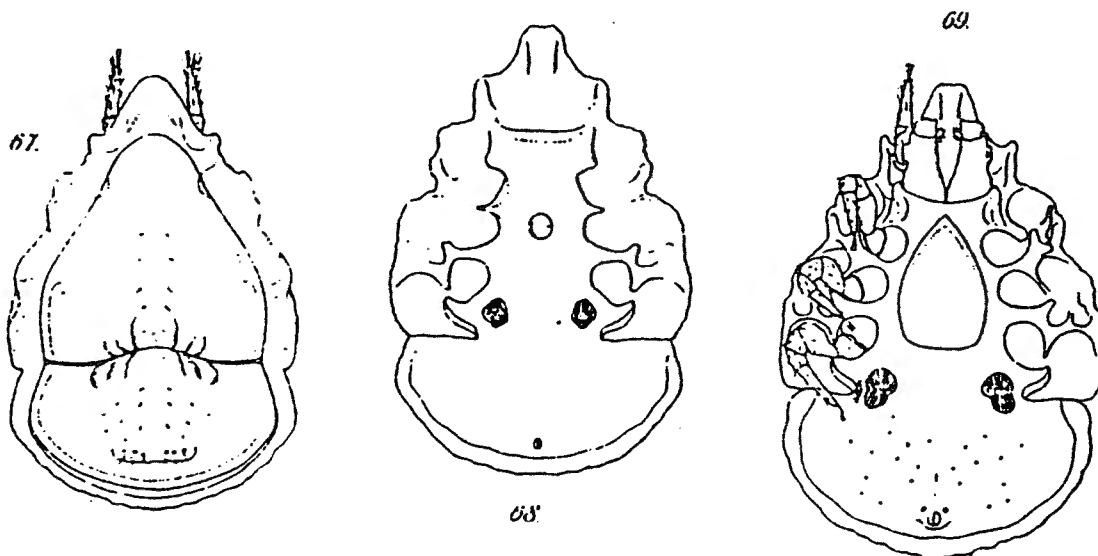
UROPODA CANESTRINIANA Berlese, 1891



Reinhold 215-116-218

L.

1891: BERLESE, Fasc. 58, N. 4: Figs. 1-3. 1-adult (dorsum), 2-female (ventrum), 3-male (ventum).



1903: BERLESE, Tab. XI, Figs. 67-69. 67-adult (dorsum), 68-male (ventrum), 69-female (ventrum).

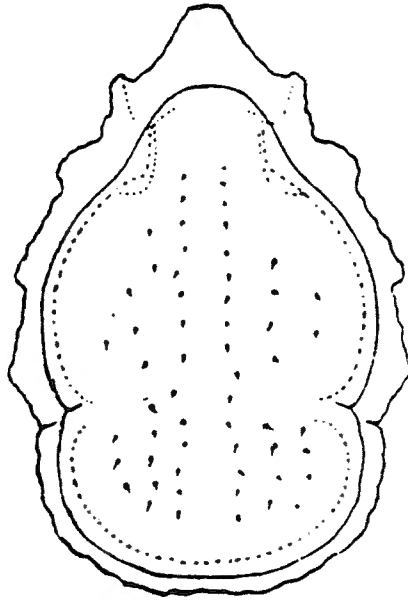


Fig. 44.
Leonardiella canestriniana
(Berlese).

1929: VITZTHUM, Fig. 44-adult (dorsum).

UROPODA CANESTRINIANA Berlese, 1891

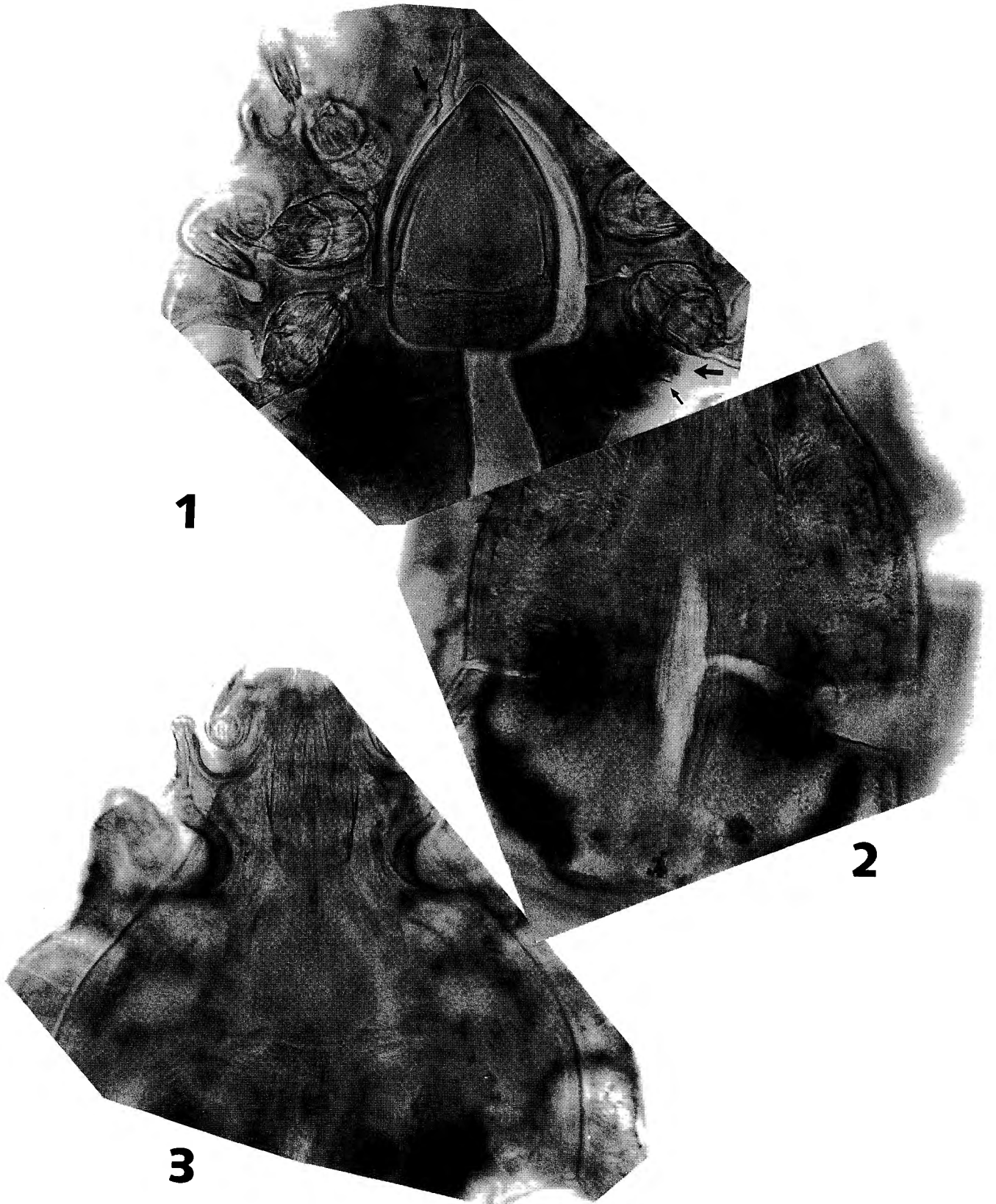


Plate I

Slide 1 Myrm./39: 1. female-ventrum: note darkened patches posterior to coxae IV indicating internal structures; note sharp barbed-like structures within these; note genital setae; 2. dorsum-note outline of ant. & post. dorsal shields separated by transverse furrow, note ventro-lateral plate projecting beyond dorsal shields, internal patches; 3. note outline of anterior dorsal shield, ventro-lateral plate and leg grooves.

DERAIOPHORUS CANESTRINII Berlese, 1905

- | | | |
|-------------------------|-------------------------------|---|
| canestrinii Berl., 1905 | 1905: Deraiphorus canestrinii | 1905: Redia 2:160, a desc., Tab.15, #18-----Java(Buitenzorg):
moss;(Cl.Kraepelin) |
| | | 1952: Tragardh, I., :72 |
| | | 1965: Hir. & Z-N., F/8:23, a key |
| | | 1967: Hir. & Z-N., F/10:13, 14 |
| | | 1969: Hir. & Z-N., F/12:130, Taf.19, #155 |
| | | 1969: Krantz, G., :64 |
| | | 1971: Hirschmann, W., F/16:5, a cat. |
| | | 1972: Hutu, M., F/18:101-----OIM |
| | | 1973: Hirschmann, W., F/19:57, a key |
| | | idem: Zirngiebl-Nicol, I., F/19:83, a desc. |
| | | 1974: Hir. & Hutu, F/20:34 |
| | | 1977: Hirschmann, W., F/23:12, 13, a desc.,
Taf.1, #3(a redescription after
the syntype from the Zool.Mus.,
Hamburg, Cat.No.156) |
| | | 1979: Hirschmann, W., F/26:32 |
| | | 1993: Wis. & Hir., F/40:14 |
| | | idem: Wisniewski, J., F/40:278-----O Om |

Castagnoli & Pegazzano, 1985: 59

canestrinii Berl.
Deraiphorus

Redia II, agosto 1905: 160

37/16, m, e giovani, musco, Buitenzorg (Giava), III. 1904;

37/17, m, f, idem, Kraepelin!;

37/19, junior, idem; 37/18, iuvenes, musco, Tijbodas (Giava), Krapelin!, III.1904

UPDATE ON SLIDE INFORMATION & PHOTOGRAPHS TAKEN

37/17: should read one male and two females

slide 37/17: Pl. III. 1-3: female-gnathosoma (internal view)

slide 37/16: Pl. IV. 1-2: female-anterior portion of dorsum

3: male-detail of humeral projection

slide 37/17: Pl. V. 1-2: female-ventrum

3: male-ventrum

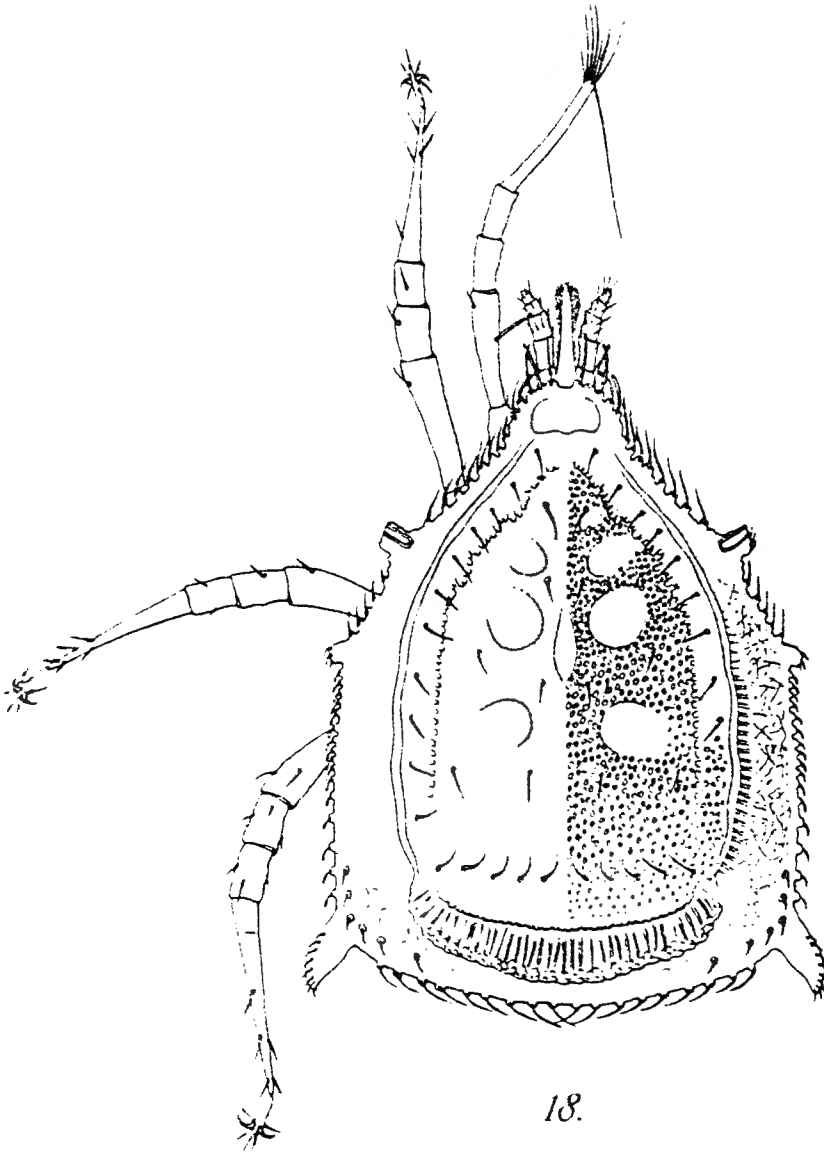


Plate I

1905: BERLESE, Tab. 15, #18-female (dorsum).

DERAIOPHORUS CANESTRINII Berlese, 1905

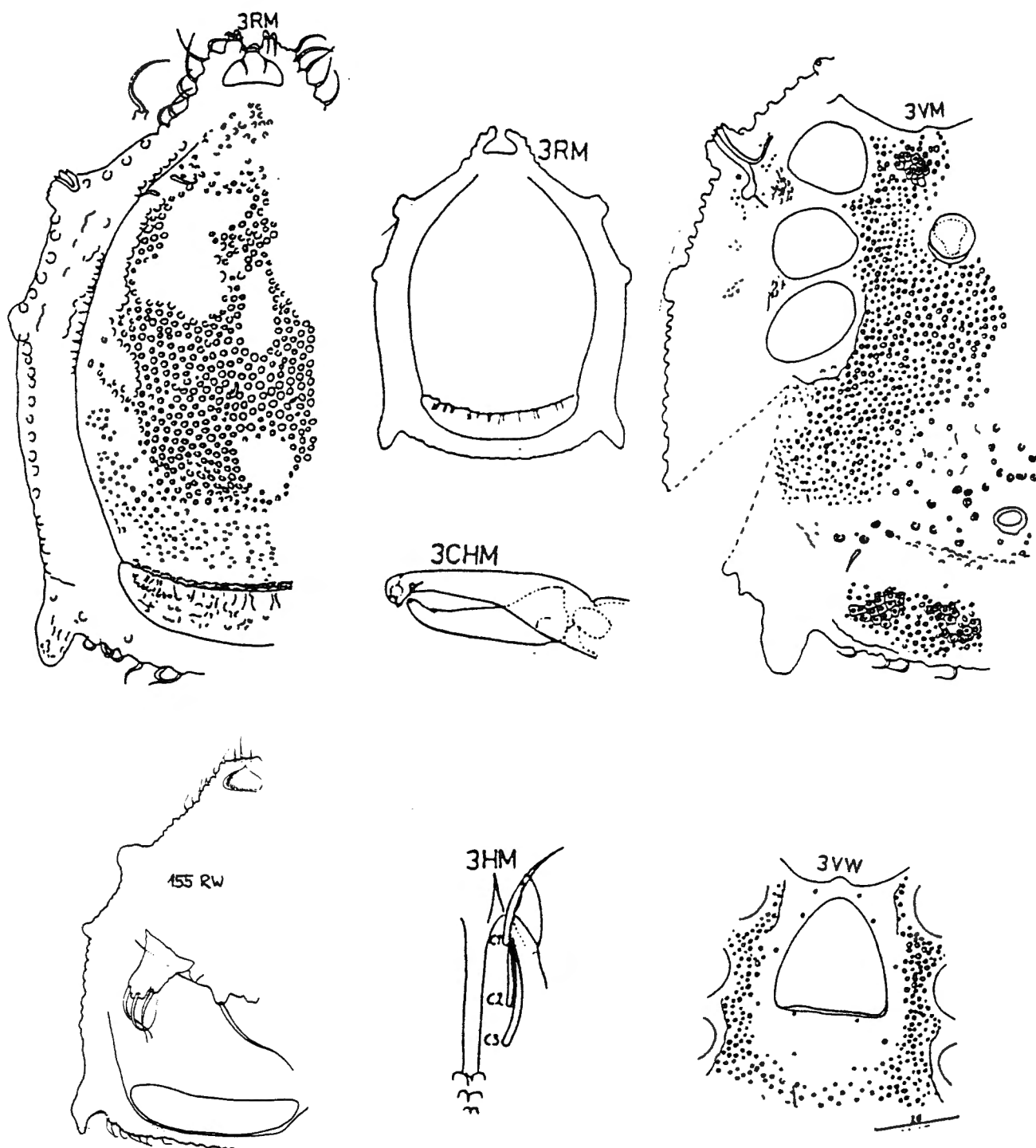


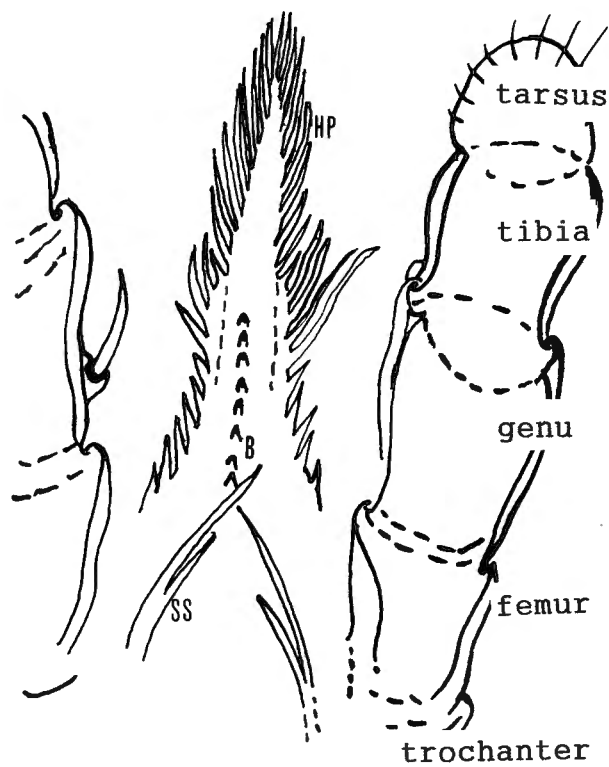
Plate II

1969: HIRSCHMANN & ZIRNGIEBL-NICOL, F/12, Taf. 19, #155: RW-female (dorsum)

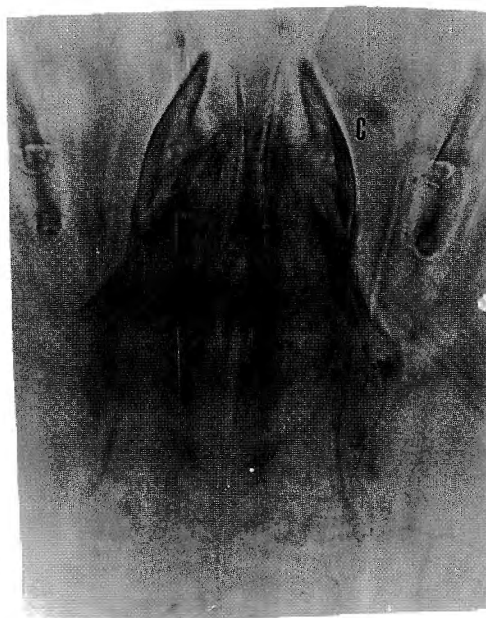
1977: HIRSCHMANN, F/23, Taf. 1 #3: VM-male (ventrum), RM-male (dorsum, outline), RM-male (dorsum), HM-male (hypostome), CHM-male (chela), VM-female (genito-sternal region)

DERAIOPHORUS CANESTRINII Berlese, 1905

1



2



3

Plate III

Slide 37/17, female: Internal view of gnathosoma-1. pedipalp (tarsus, tibia, genu, femur, trochanter), hypopharyngeal process, HP, 'barbs', B, along median axis, salivary styli, SS; 2. sketch of same with labels; 3. corniculi, C

DERAIOPHORUS CANESTRINII Berlese, 1905**1****2****3**

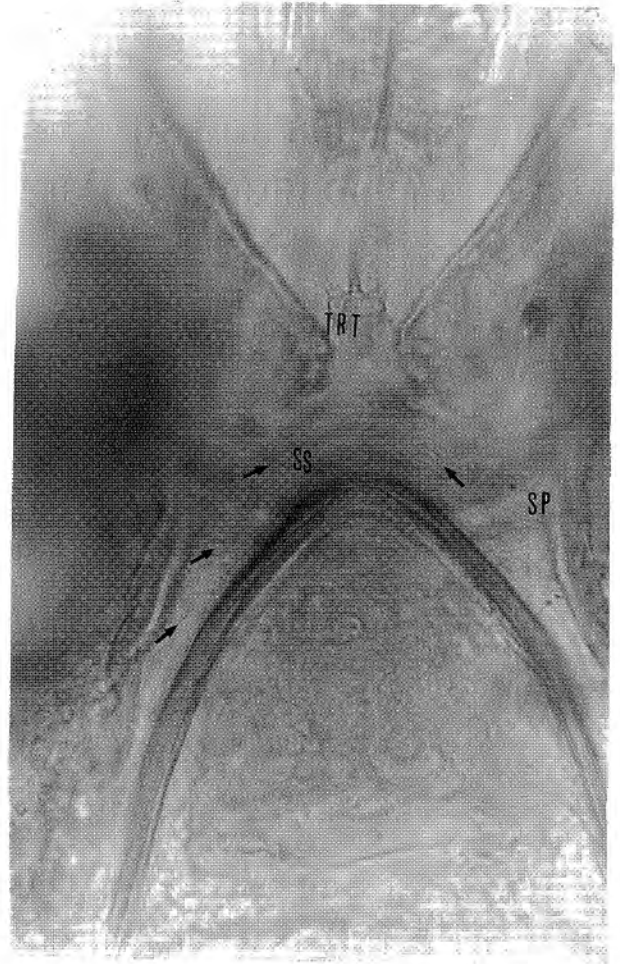
Plate IV

Slide 37/16, female: 1. dorsum: note porous centro-dorsal region (CDR), its fusion with marginal region (MGR), the separate latero-dorsal region, (LDR), the formation of the 'collar' (C) and possible scabellum (S); 2. Sketch of same with labels;
 Slide 37/16, male: 3. detail of humeral projection (peritreme)

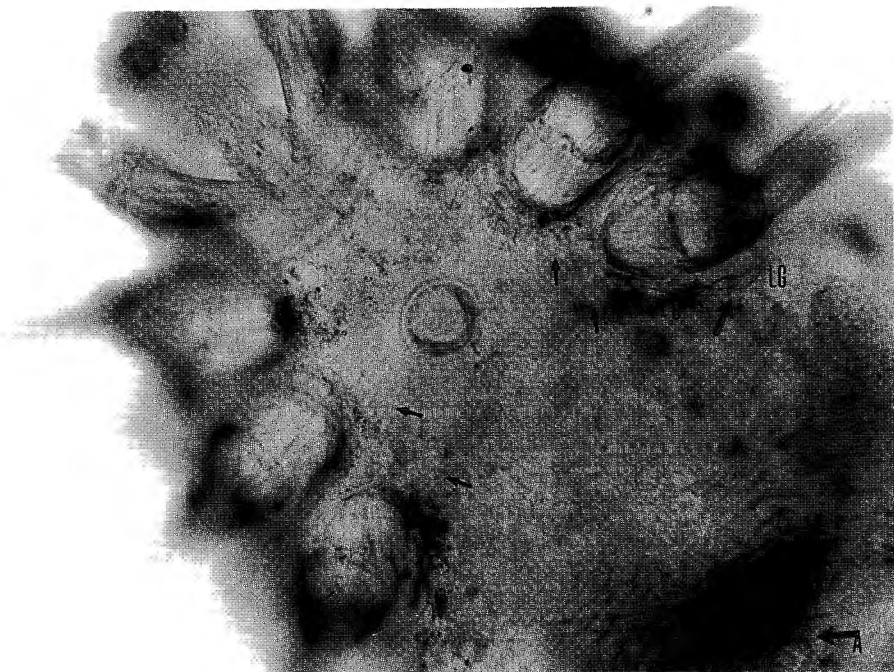
DERAIOPHORUS CANESTRINII Berlese, 1905



1



2



3

Plate V

Slide 37/17, female: 1. ventrum, leg grooves IV, LG, (large arrows), aerolated region, (small arrows); 2. sternal plate, SP, sternal setae, SS, (small arrows), base of tritrosternum, TRT; 3. male: leg-grooves IV, LG, aerolated region (small arrows), anus, A.

UROPODA CAPUTMEDUSAE Berlese, 1901

caputmedusae Berl. 1901	1901: Uropoda caputmedusae	1901: Zool.Anz.25:14, no fig., a desc.-----Chile(Temuco)
[BWB]:483	1903: Uropoda caputmedusae	1903: Rev.Chil.Hist.Natur.,7:109
	1904: Urodinychus caputmedusae	1904: Redia I:270, no fig., no desc.
	1916: Urodinychus? (Trichodinychus) caputmedusae	1916: Redia 12:145, no fig., no desc.
	1917: Comydinychus caputmedusae	1917: Redia 13:11, no fig., no desc.
		1943: Vitzthum, H., :785
		*1950: Radford, C.D., :49, a cat.
		1952: Baker & Wharton, :119
	1965: Discourella caputmed. (H&Z-N:11)	1965: Hir. & Z-N., F/8:11, a key
	1967: Comydinychus caput. (H&Z-N:5)	1967: Hir. & Z-N., F/10:5
	1969: listed as D.caput. (Berlese & Leonardi 1902!)(H&Z-N:127)	1969: Hir. & Z-N., F/12:68, 127, 143 Tav. 13, 14, #107
	1971: Comydinychus caputmedusae(H:3)	1971: Hirschmann, W., F/16:3, 6, 23, a cat.
	idem: Discourella caputmedusae(H:6)	
	idem: Urodinychus ?(Trichodinychus) caputmedusae(H:23)	
	1972: Discourella caputmedusae(Z-N:26) (listed as Berl. & Leon. 1902!) (listed as Berl. & Leon. 1902!) (listed as Berl. & Leon. 1902!)	1972: Zirngiebl-Nicol, I., F/18:26, a desc. idem: Hirschmann, W., F/18:27, 29-----Chile idem: Hutu, M., F/18:98-----NTc
	1974: Discourella caputmedusae(H&H:23) (listed as Berl. & Leon. 1902!)	1974: Hir. & Hutu, F/20:23
	1979: Discourella caputmedusae(H:23) (listed as Berl. & Leon., 1902!)	1979: Hirschmann, W., F/26:23
		Idem: Nicol, I., F/26:6
	1993: Discourella caputmedusae(W&H:23)	1993: Wis. & Hir., F/40:23
	idem: Discourella caput. (Wis.:238). (listed as Berl. & Leon. 1901!)	idem: Wisniewski, J., F/40:238-----NTc

*Radford, 1950:49, lists Zool.Anz.15:14, should read Zool.Anz.25:14

Castagnoli & Pegazzano, 1985: 63

caputmedusae Berl.
Comydinychus

Zool. Anz., XXV, 1901, (Berlese & Leonardi): 14 (Uropoda caputmedusae).
Redia I, marzo 1904: 270 (Urodinychus caputmedusae).
Redia XII, agosto 1916: 145 (Urodinychus? (Trichodinychus) caputmedusae).
Redia XIII, agosto 1917: 11 (Comydinychus caputmedusae).

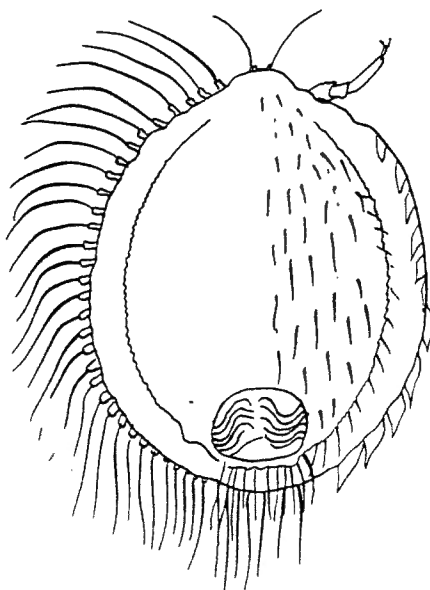
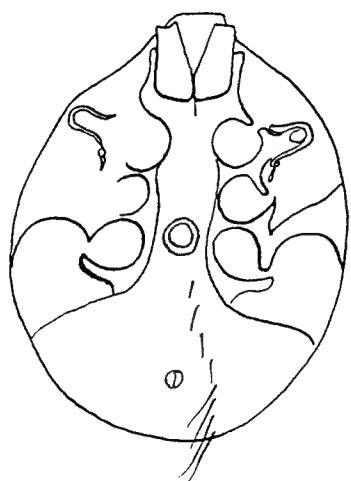
sub Urodinychus: 21/49, t, f, Temuco (Chile), 4. IV. 1899.

UPDATE ON SLIDE INFORMATION & PHOTOGRAPHS TAKEN

slide 21/49: specimen is a male and not a female.

- Pl. III: 1. dorsum; 2. detail of 'flaps'; 3. detail of post-dorsal region
Pl. IV: 1. ventrum; 2. detail of intercostal region; 3. genital plate
Pl. V: 1. portion of gnathosoma; 2. chelicerae, stigmata of peritreme

UROPODA CAPUTMEDUSAE Berlese, 1901



BERLESE: workbook, page 483 - sketches showing ventrum and dorsum

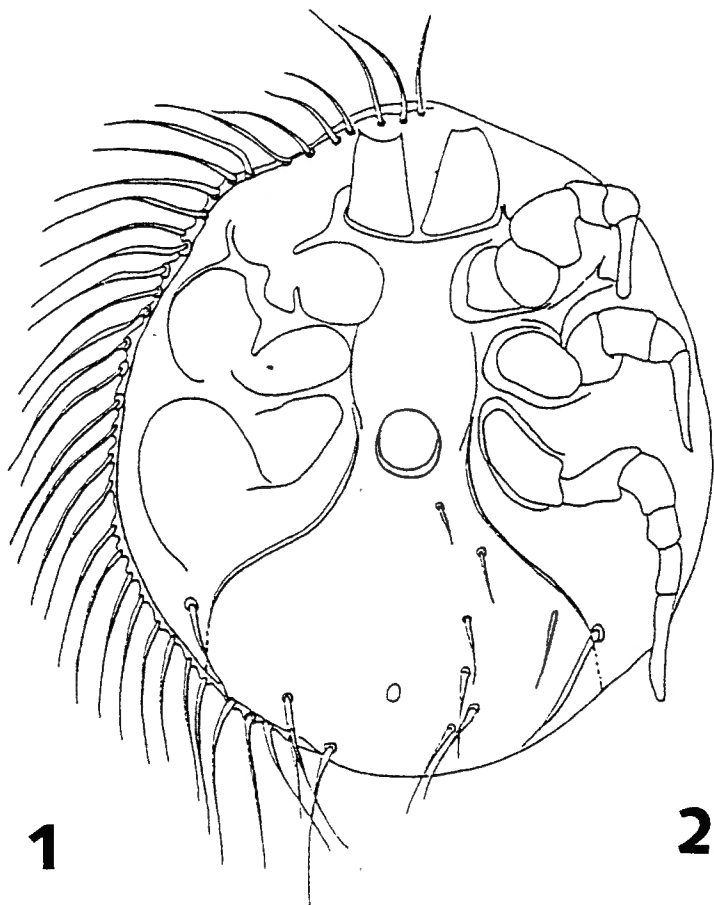


Plate I

1. GORIROSSI-BOURDEAU: Slide 21/49 - 1. ventrum, 2. dorsum

UROPODA CAPUTMEDUSAE Berlese, 1901

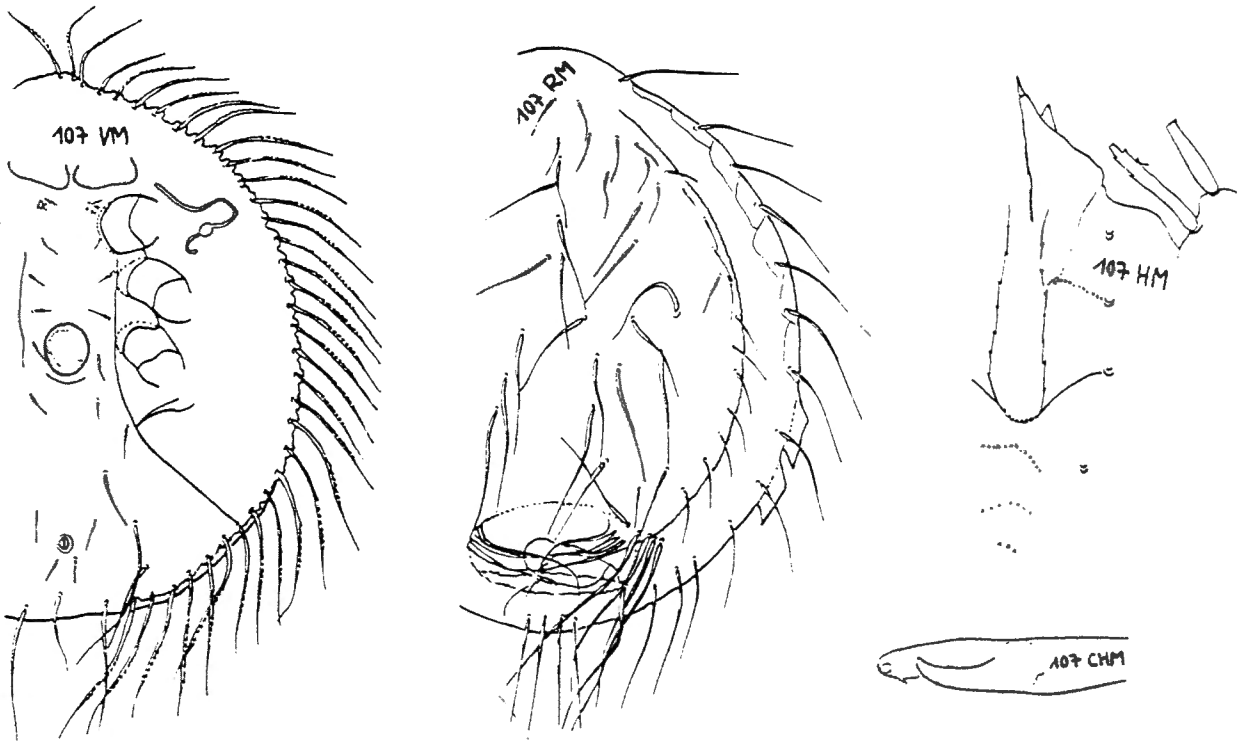


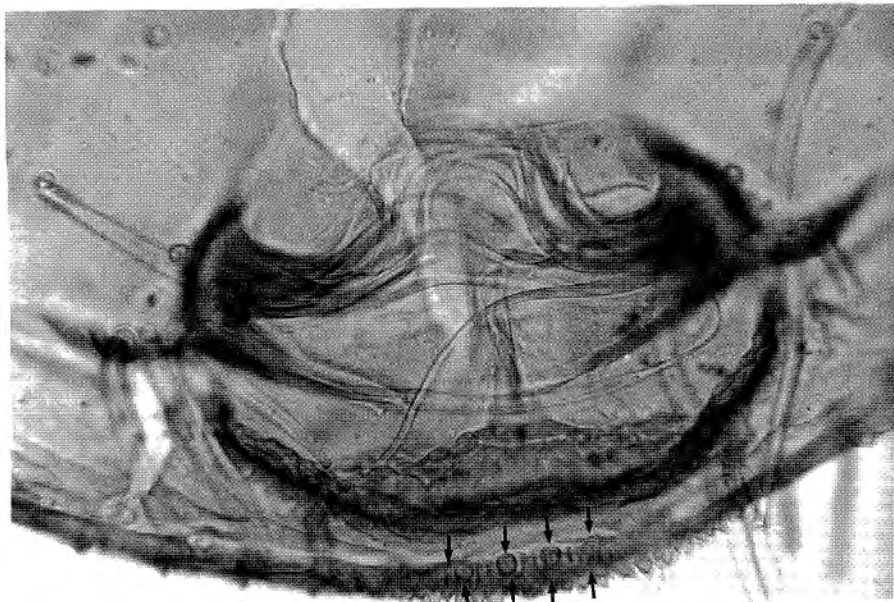
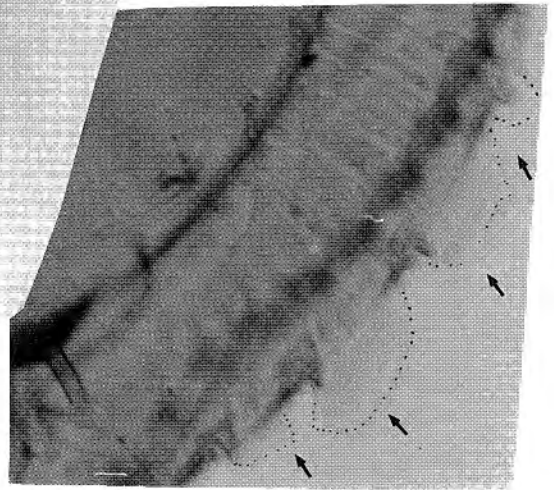
Plate II.

1969: HIRSCHMANN & ZIRNGIEBL-NICOL, F/12, Tafs. 13 & 14, #107:
 VM-male (ventrum), RM-male (dorsum), HM-male (hypostome),
 CHM-male (chela).

UROPODA CAPUTMEDUSAE Berlese, 1901



1



3

Plate III

SLIDE 21/49: 1. Dorsum - note separated dor. and mar. shields, setae along inner edge of dorsal shield, scalloped edges of both dorsal and marginal shields; 2. detail of margin of marginal shield showing rays and flap-like, chitinous extensions; 3. detail of oval-shaped depression.

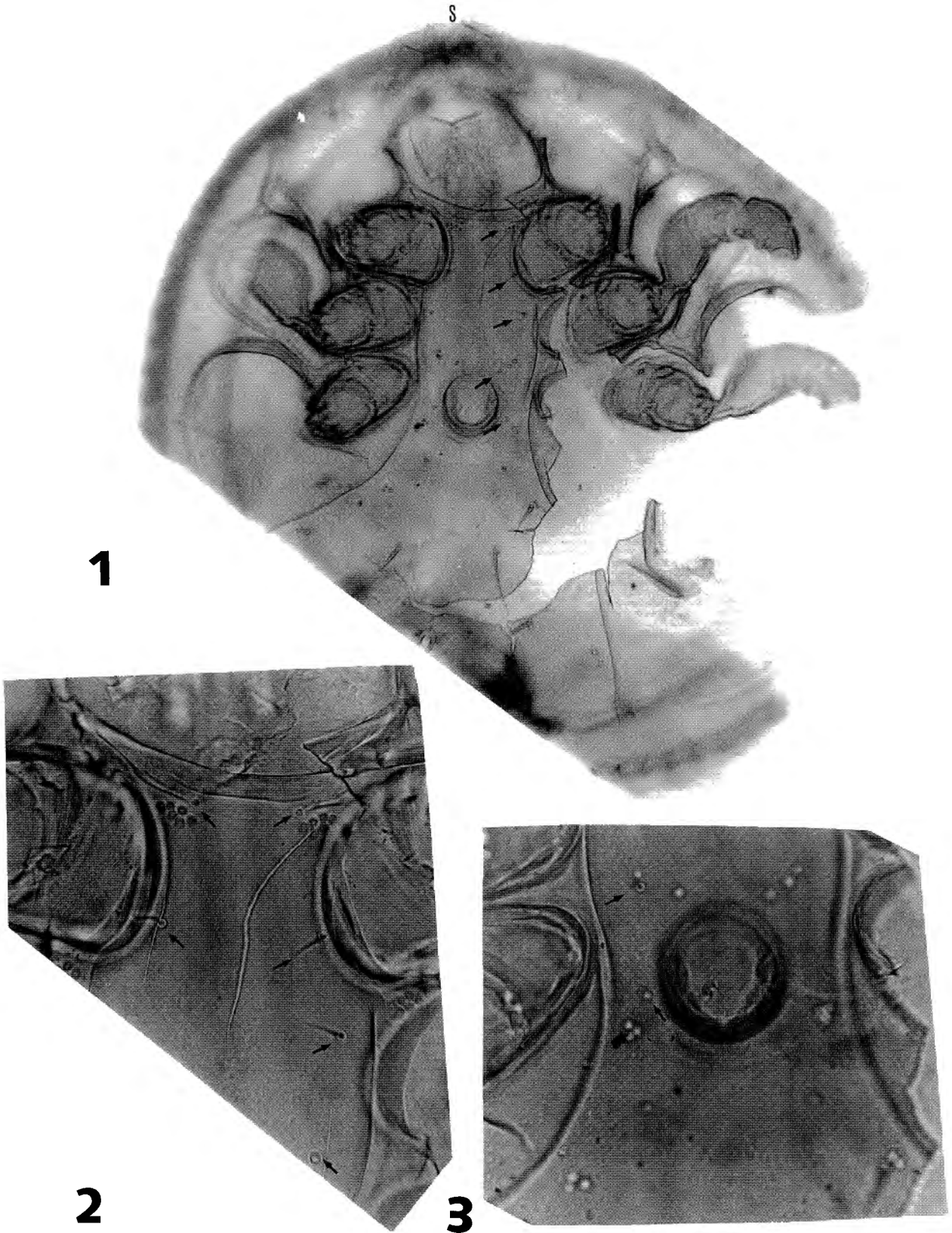


Plate IV

SLIDE 21/49: 1. Ventrum - note scabellum (S), endopodal and metapodal lines, sternal setae, genital and anal plates, leg grooves; 2. detail of sternal plate, note sternal setae 1, 2, 3, 4 (small arrows), note cluster of pits at sternal setae I; 3. detail of genital plate, note endopodal and metapodal lines, sternal setae 4 and 5, pits

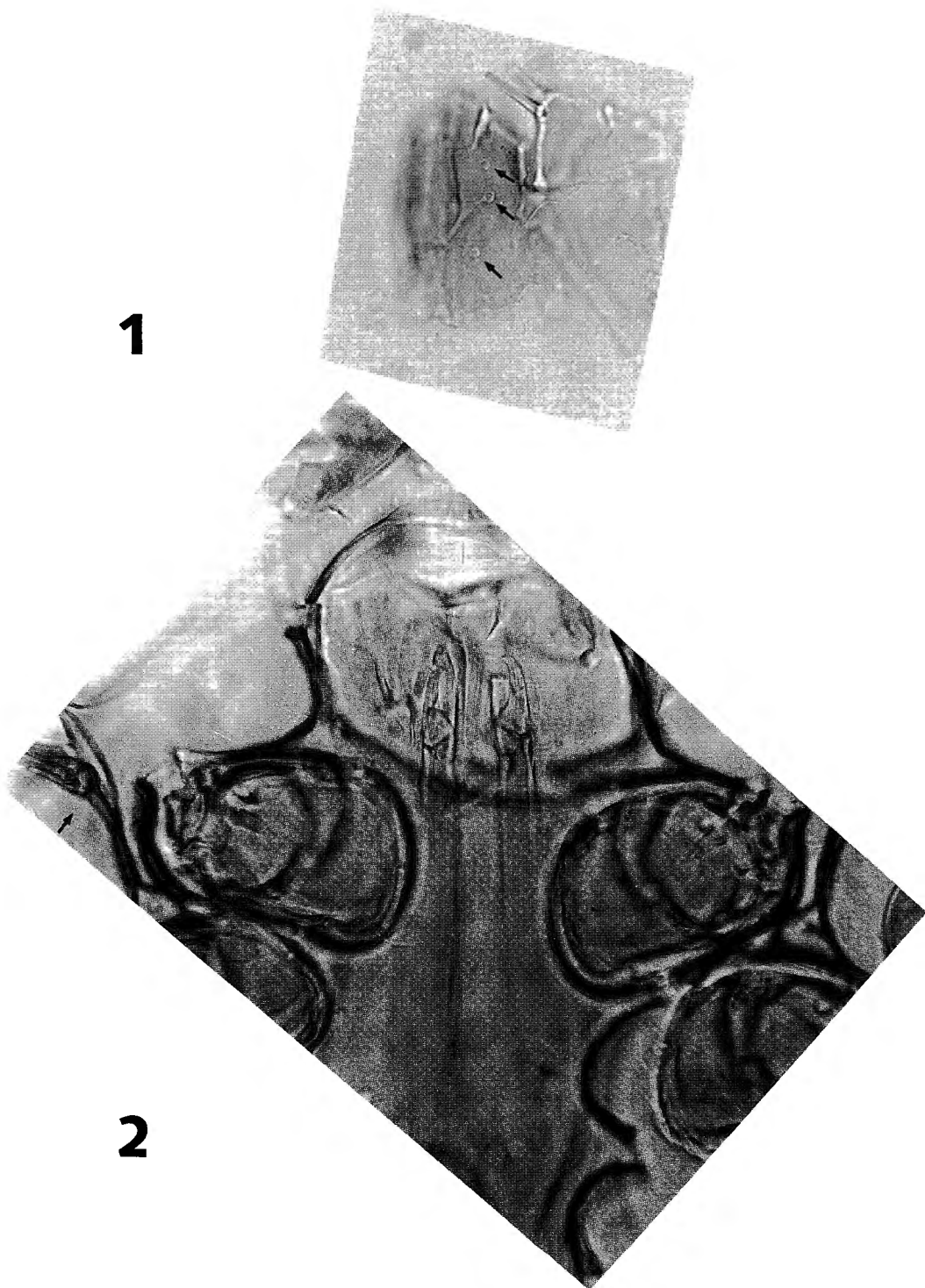
UROPODA CAPUTMEDUSAE Berlese, 1901

Plate V

Slide 21/49: 1. Gnathosoma - portion showing three hypostomal setal bases, 2. chelicerae and portion of peritreme + stigmata between coxae II and III

INDEX TO GENERIC NAMES WITH INCLUDED SPECIES AND SYNONYMY

COMYDINYCHUS Berlese, 1917

C. caputmedusae (Berlese, 1901) = *Uropoda caputmedusae* Berlese, 1901

DERAIOPHORUS G. Canestrini, 1897

D. canestrinii Berlese, 1905

DISCOURELLA Berlese, 1910

D. caputmedusae (Berlese, 1901) = *Uropoda caputmedusae* Berlese, 1901

LEIODINYCHUS Berlese, 1917

L. campomolendina (Berlese, 1887) = *U. campomolendina* Berlese, 1887

LEONARDIELLA Berlese, 1903

L. canestriniana (Berlese, 1891) = *Uropoda canestriniana* Berlese, 189

OPLITIS Berlese, 1884

O. calceolata (Berlese, 1916) = *Uroplitella calceolata* Berlese, 1916

PSEUDOUROPODA Oudemans, 1936

P. campomolendina (Berlese, 1887) = *U. campomolendina* Berlese, 1887

P. (Lonchothura) campomolendina (Berlese, 1887) = *U. campomolendina* Berlese, 1887

URODINYCHUS Berlese, 1903

U. campomolendina (Berlese, 1887) = *Uropoda campomolendina* Berlese, 1887

U. ? (Trichodinychus) caputmedusae (Berlese 1916) = *Uropoda caputmedusae* Berlese, 1901

UROPLITELLA Berlese, 1904

U. calceolata Berlese, 1916 = *Oplitis calceolata* (Berlese, 1916)

UROPODA Latreille, 1806

U. campomolendina Berlese, 1887 = *Urodinychus campomolendina*

(Berlese, 1887

= *Pseudouropoda campomolendina*

(Berlese, 1887

= *Pseudouropoda (Lonchothura)*

campomolendina (Berlese, 1887

= *Trichouropoda campomolendina*

(Berlese, 1887

= *Leiodinychus campomolendina*

(Berlese, 1887)

U. campomolendina var. *canadensis* Berlese, 1904 = *Trichouropoda* var *canadensis*
(Berlese, 1904)

U. canestriniana Berlese, 1891 = *Trachyuropoda canestriniana*(Berlese, 1891)
= *Trachyuropoda (Leonardiella) canestriniana* (Berlese, 1891)
= *Leonardiella canestriniana* (Berlese, 1891)

U. caputmedusae Berlese, 1901 = *Urodinychus caputmedusae* (Berlese, 1901)
= *Urodinychus?(Trichodinychus) caputmedusae* (Berlese, 1901)
= *Comydinychus caputmedusae* (Berlese, 1901)
= *Discourella camputmedusae* (Berlese, 1901)

TRACHYUROPODA Berlese, 1888

T. canestriniana (Berlese, 1891) = *Uropoda canestriniana* Berlese, 1891

T. (Leonardiella) canestriniana (Berlese, 1891) = *Uropoda canestriniana* Berlese, 1891

TRICHOUUROPODA Berlese, 1916

T. campomolendina (Berlese, 1887) = *U. campomolendina* Berlese, 1887

T. campomolendina var *canadensis* (Berlese, 1904) = *U. campomolendina* var
canadensis, Berlese, 1904

T. canadensis (Berlese, 1904) = *Uropoda campomolendina var canadesis* Berlese, 1904

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