

Notes on the mites living in the flowers of
Espeletia spp. (Asteraceae) in Colombia. II.
Espeletiacarus andinus gen. n., sp. n. (Hemisarcoptidae)
and *Michaelopus incanus* sp. n. (Acaridae)

ALEX FAIN

(With 23 figures)

Abstract

A new genus and two new species of mites (Acari) are described from the flowers of *Espeletia* spp. in Colombia: *Espeletiacarus andinus* gen. n., sp. n. from *Espeletia incana* and *Michaelopus incanus* sp. n. from *Espeletia murilloi*, *E. incana* and *E. brachyxantha* (Asteraceae (= Compositae), Heliantheae).

Introduction

In a previous paper Fain & Rack (1987) described a new species of the genus *Carpoglyphus* (*C. sturmi*, Carpodagliidae, Acari), found by Prof. Dr. H. Sturm in the flowers of several *Espeletia* spp. in the andine region of Colombia. During the examination of the mites from the flowers of *Espeletia* there were also found numerous other specimens belonging to three new species and one new genus. In this paper the descriptions of *Espeletiacarus andinus* gen. n., sp. n. (Hemisarcoptidae) from *Espeletia incana*, and *Michaelopus incanus* sp. n. from *Espeletia incana*, *E. murilloi* and *E. brachyxantha* are given.

All measurements in the following descriptions are in microns (μm).

Family Hemisarcoptidae Oudemans, 1904

Genus *Espeletiacarus* gen. n.

Definition: This genus is known only from the hypopus stage. Body flattened, oval in shape. Dorsum with a well-developed sejugal furrow. The propodonotum is relatively long, the ratio of the lengths of propodonotum/hysterodontum is 1 : 1,5. Dorsum covered by two large punctate shields bearing numerous narrow irregular and unequal furrows either longitudinal or oblique. A pair of large eye lenses

and a median pigmented retina is present. All dorsal setae short, the *vi* setae situated on a punctate shield wider than long. Setae *s cx* much longer than the dorsal setae. Setae *ve* absent, setae *dl* represented only by their bases. Orifices of oil glands situated in front of setae 13. Venter as in *Hemisarcoptes* but the epimera III are shorter. Palposoma and palposomal solenidia and setae are lacking. Legs I-III long and narrow. Chaetotaxy : Tarsi 6-6-4-4. Tibiae 1-1-1-0. Genua 2-2-0-0. Femora 1-1-0-1. Trochanters 1-1-1-0. Tarsi I-III ending in a large sucker containing a very small sclerite representing a vestigial claw. Tarsi IV with only one long seta, the 3 other setae being very short and thin.

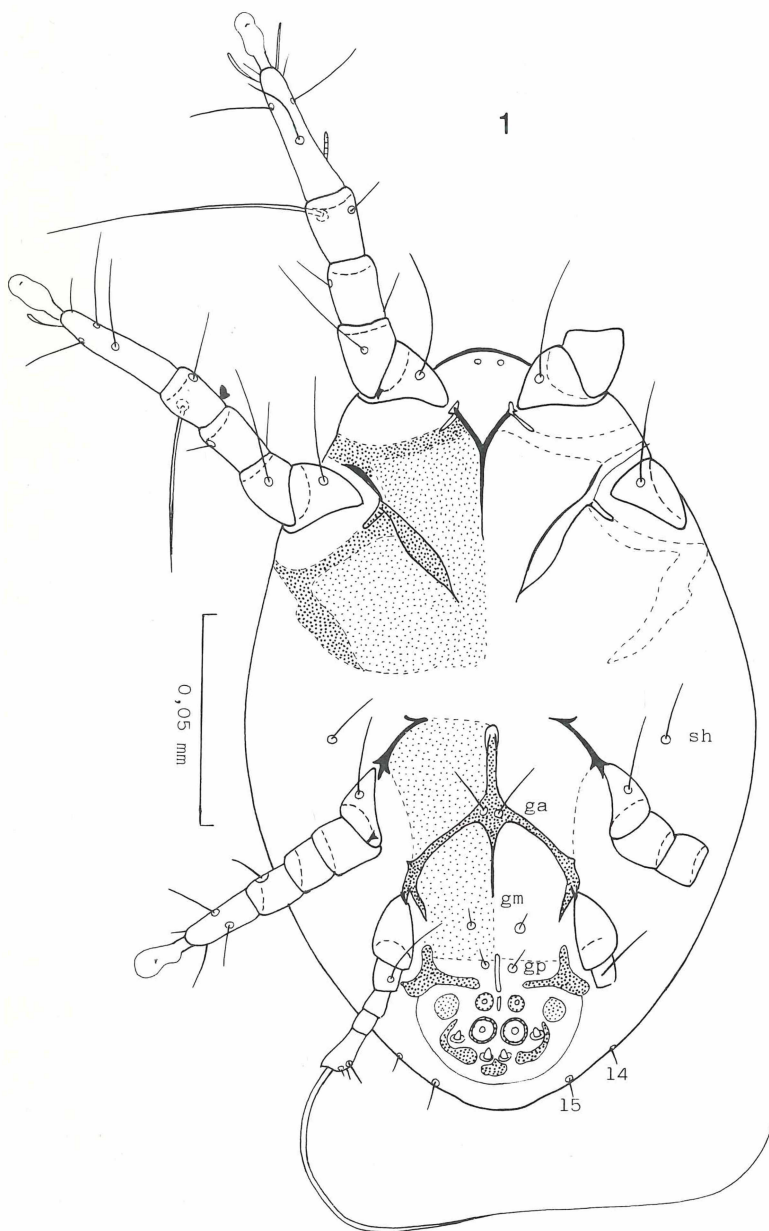
Type species: *Espeletiacarus andinus* sp.n.

Espeletiacarus andinus sp. n.

Hypopus holotype (figs 1-6) : Idiosoma 178 long and 121 wide. Dorsum : Sejugal furrow situated slightly in front of the middle of the dorsum. Propodonal shield punctate and bearing irregular oblique or longitudinal narrow grooves. Hysteronotal shield as propodonal shield but the grooves are shorter. In front of the eyes there is a punctate shield much wider than long. Venter : Sternum relatively long and thin. Suctorial plate 38 large. Diameter of anterior suckers 6, of posterior sucker 7,2. Lateral conoids at the same level as posterior suckers. Setae *cx I* and *III* lacking; setae *ga*, *gm* and *gp* thin. Legs : Tarsi 32-30-19-13 long respectively. Chaetotaxy : Tarsi I-II with 3 long and thin ventral setae, 2 thin and very short apico-dorsal setae and one relatively short foliate seta. Tarsus III with 4 thin setae of which the ventro-apical short. Tarsus IV with one very long and strong seta and 3 very thin and short subapical setae. Solenidia : Tarsi 3-1-0-0. Tibiae 1-1-0-0. Genua 1-1-0-0.

Habitat: Holotype and only known specimen from a flower of *Espeletia incana*, Páramo La Rusia, at about 200 km NNW of Bogotá and about 10 km N of Duitame, alt. 3550 m, 26. IX. 1985 (Coll. H. Sturm n° 85/120). Holotype in the Zoologisches Institut und Zoologisches Museum der Universität Hamburg.

Remarks: The hypopus of this new genus presents the same general characters as the genera *Hemisarcoptes* Lignières, 1893, *Nanacarus* Oudemans, 1902 and *Congovidia* Fain & Elsen, 1971 (Hemisarcoptidae Oudemans, 1904). The dorsal shields, the epimera and the legs have the same aspect in all these genera. *Espeletiacarus* is, however, clearly distinguished from these three genera by the vestigial aspect of the claws, the complete absence of the palposoma and palposomal solenidia and setae and the presence of only one strong and long seta on tarsus IV. The inclusion of this genus in the Hemisarcoptidae is therefore only provisional until the adult stages of this genus are known.



g. 1: *Espeletiacarus andinus* sp. n. Hypopus in ventral view.

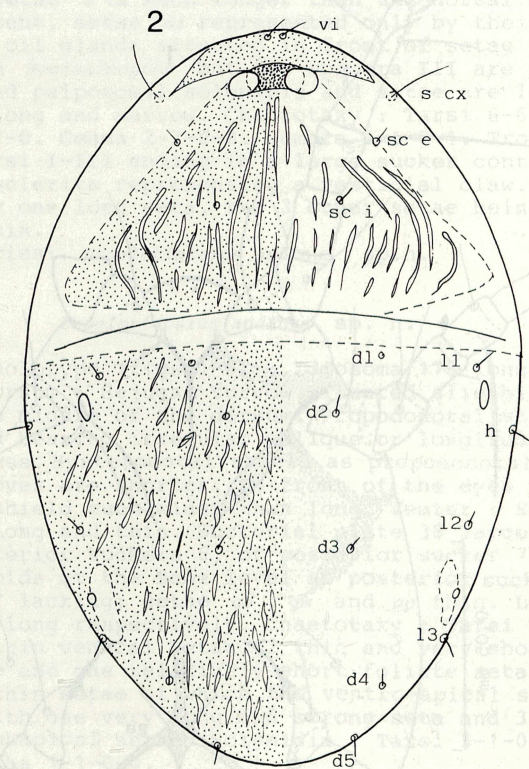
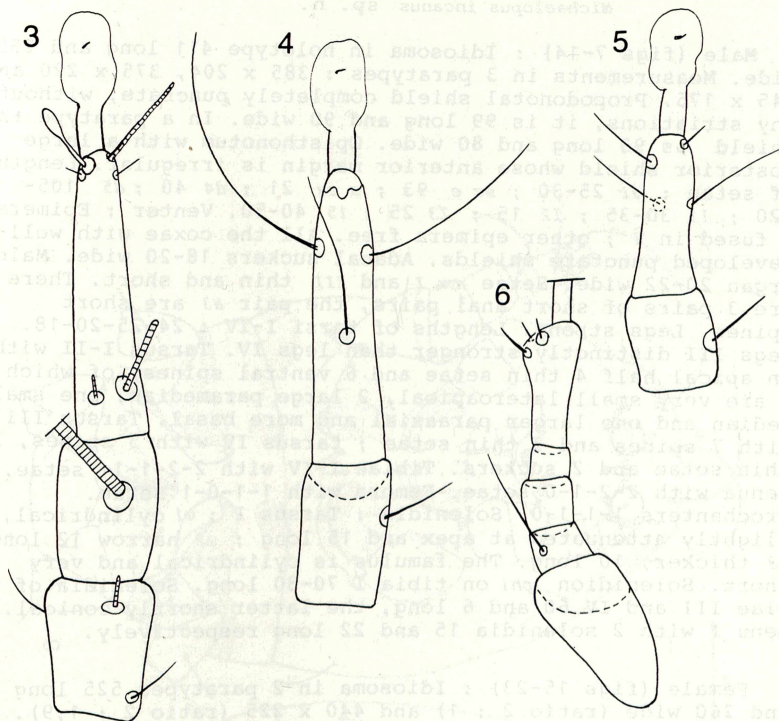


Fig. 2: *Espeletiacarus andinus* sp. n. Hypopus dorsal view.



Figs 3-6: *Espeletiacarus andinus* sp. n. Hypopus: Apical segment of leg I dorsally (3) and ventrally (4), of legs III (5) and IV (6).

Family Acaridae Murray, 1877

Genus *Michaelopus* Fain & Johnston, 1974

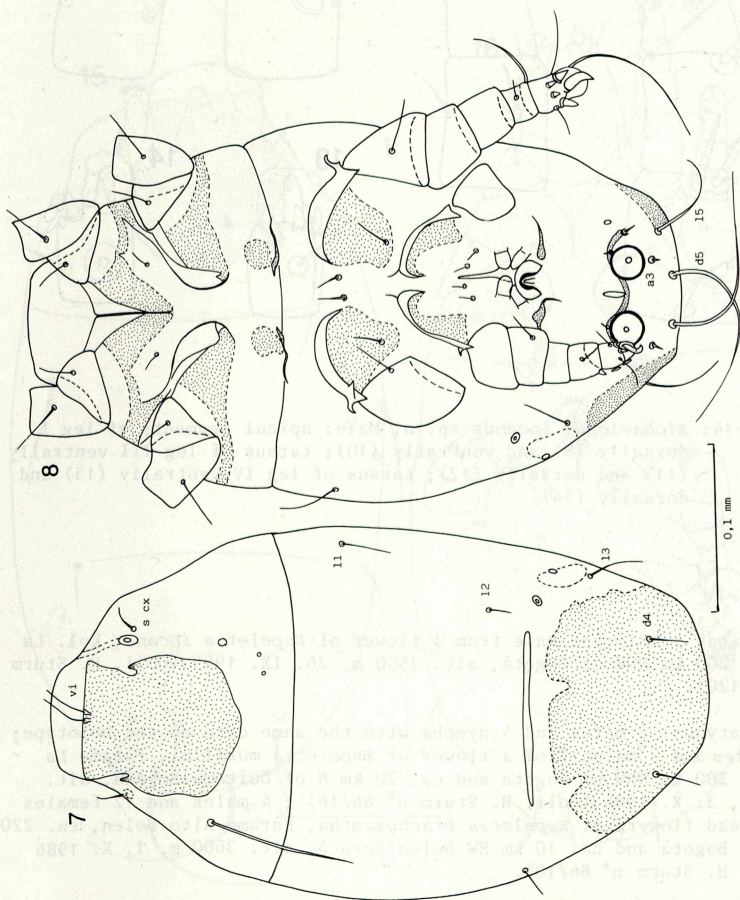
Including the new species described herein, the genus *Michaelopus* comprises now 15 species. Among them only one is known from both adults and hypopi, nine are known from adults only and five from hypopi only (Fain 1982). The genus *Michaelopus* differs from *Thyreophagus* Rondani, 1874 by the presence on the tarsi III and IV of 6 or 7 well-developed spines for only 4 poorly developed spines in *Thyreophagus*.

Michaelopus incanus sp. n.

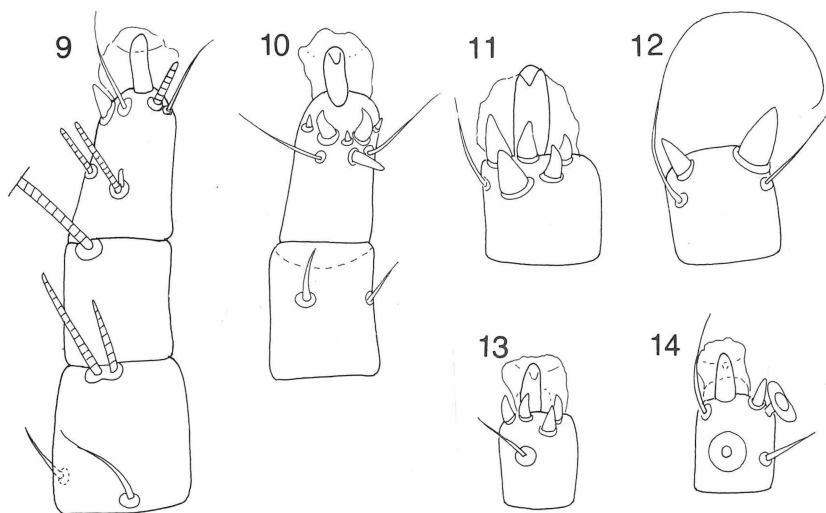
Male (figs 7-14) : Idiosoma in holotype 411 long and 255 wide. Measurements in 3 paratypes : 385 x 204, 375 x 220 and 345 x 175. Propodonal shield completely punctate, without any striations, it is 99 long and 90 wide. In a paratype the shield is 93 long and 80 wide. Opisthonotum with a large posterior shield whose anterior margin is irregular. Lengths of setae : *vi* 25-30 ; *sc e* 93 ; *s cx* 21 ; *d4* 40 ; *d5* 105-120 ; *l1* 30-35 ; *l2* 15 ; *l3* 25 ; *l5* 40-50. Venter : Epimera I fused in Y ; other epimera free. All the coxae with well-developed punctate shields. Adanal suckers 18-20 wide. Male organ 20-22 wide. Setae *cx I* and *III* thin and short. There are 3 pairs of short anal pairs, the pair *a3* are short spines. Legs strong. Lengths of tarsi I-IV : 24-25-20-18. Legs III distinctly stronger than legs IV. Tarsus I-II with in apical half 4 thin setae and 6 ventral spines, of which 2 are very small lateroapical, 2 large paramedian, one small median and one larger paraaxial and more basal. Tarsus III with 7 spines and 3 thin setae ; tarsus IV with 5 spines, 3 thin setae and 2 suckers. Tibiae I-IV with 2-2-1-1- setae. Genua with 2-2-1-0 setae. Femora with 1-1-0-1 setae. Trochanters 1-1-1-0. Solenidia : Tarsus I : $\omega 1$ cylindrical, slightly attenuated at apex and 15 long ; $\omega 2$ narrow 12 long ; $\omega 3$ thicker, 10 long. The famulus is cylindrical and very short. Solenidion *phi* on tibia I 70-80 long. Solenidia of tibiae III and IV 60 and 6 long, the latter shortly conical. Genu I with 2 solenidia 15 and 22 long respectively.

Female (figs 15-23) : Idiosoma in 2 paratypes 525 long and 260 wide (ratio 2 : 1) and 440 x 225 (ratio 2 : 1,9). Propodonal shield entirely punctate, as in the male, 99 long and 87 wide. Sejugal furrow rather well developed. Organ of Grandjean comblike with 8-10 thin projections. Lengths of setae : *vi* 40 ; *sc e* 100-120 ; *d4* 35-40 ; *d5* 120 ; *l1* 60 ; *l2* 20-25 ; *l3* 35-40 (ventral). Genital suckers relatively small. Copulatory orifice situated on the top of a small papilla close to the posterior extremity. Bursa slightly dilated in its distal part, very narrow in its basal part and un conspicuous in its median part ; base of spermatheca sclerotized, cylindrical, 6 long and 6 wide. Venter : Epimera and coxal shields as in the male. Genital suckers small. Length of *al* 30, of *l5* 50. Gnathosoma 75 wide, chelicerae 78 long. Legs : lengths of tarsi I-IV 25-25-18-18. Chaetotaxy of legs: Tarsi I-III as in the male. Tarsus IV with 6 spines and 4 simple setae. Solenidia as in the male, except that the solenidion of tibia IV is thin and much longer.

Tritonymph : Length and width of 2 paratypes : 360 x 180 and 390 x 180. Propodonal shield entirely punctate and without striations, 84 long and 68 wide. Chaetotaxy of idiosoma and legs as in female but shorter.



Figs 7-8: *Michaelopus incanus* sp. n. Male in dorsal (7) and ventral view (8).



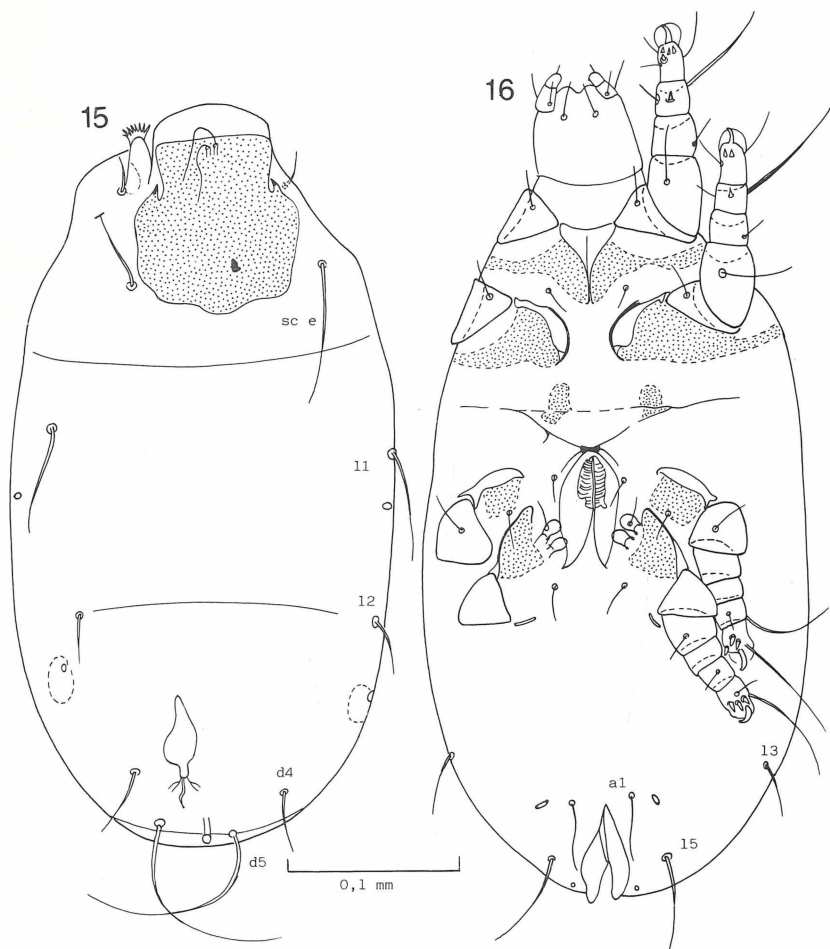
Figs 9-14: *Michaelopus incanus* sp. n. Male: apical segments of leg I dorsally (9) and ventrally (10); tarsus of leg III ventrally (11) and dorsally (12); tarsus of leg IV ventrally (13) and dorsally (14).

Habitat : Holotype male from a flower of *Espeletia incana*, Kol. La Rusia, 200 km NNW of Bogotá, alt. 3500 m, 26. IX. 1985 (Coll. H. Sturm n° 85/120).

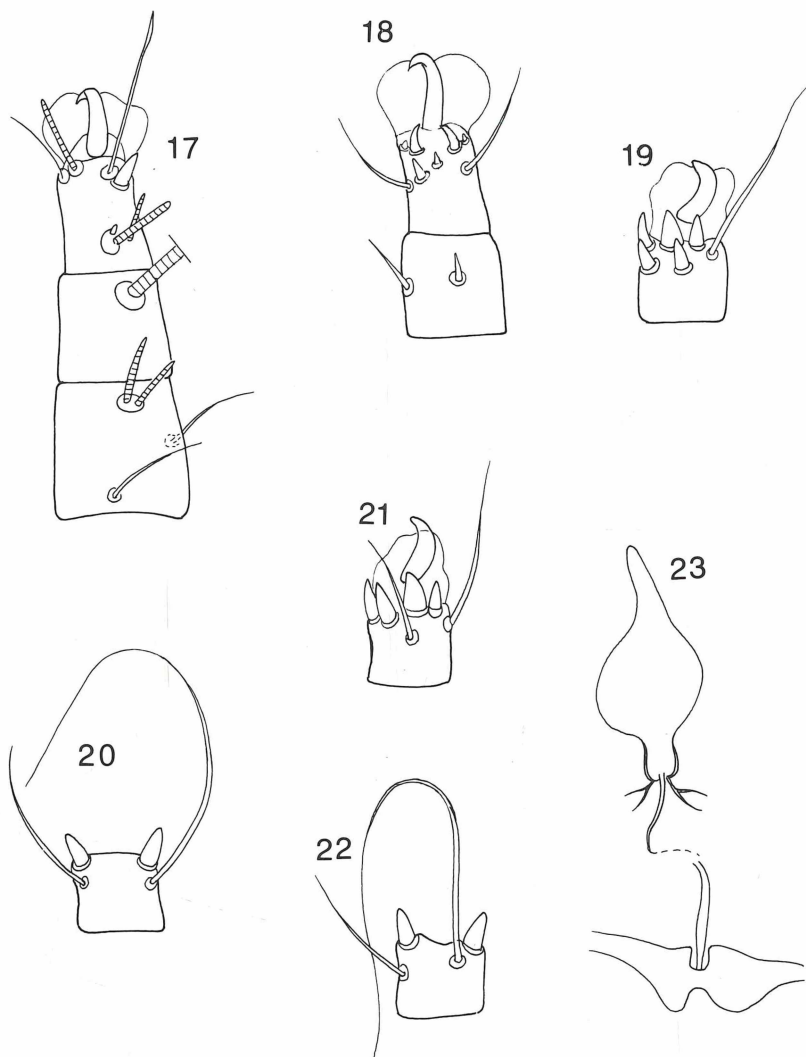
Paratypes: 2 males and 5 nymphs with the same data as the holotype; 8 females and 3 males from a flower of *Espeletia murilloi*, Páramo La Rusia, 200 km NNW of Bogotá and ca. 20 km N of Duitama/Boyacá, alt. 3550 m, 3. X. 1986 (Coll. H. Sturm n° 86/16) ; 4 males and 12 females from dead flowers of *Espeletia brachyxantha*, Páramo Alto Belen, ca. 220 km NNW Bogotá and ca. 10 km NW Belen/Boyacá, alt. 3600 m, 1. X. 1986 (Coll. H. Sturm n° 86/18).

Holotype and 9 paratypes male, 19 paratypes female and 4 tritonymphs in the Zoologisches Institut und Zoologisches Museum der Universität Hamburg; other paratypes (1 male, 1 female and 2 nymphs) in the Institut royal des Sciences naturelles de Belgique, Bruxelles.

Remark : *M. incanus* belongs to a small group of species characterized in the female by the presence on the tarsus III of 7 spines and 3 simple



Figs 15-16: *Michaelopus incanus* sp. n. Female in dorsal (15) and ventral (16) view.



Figs 17-23: *Michaelopus incanus* sp. n. Female: apical segments of leg I, dorsally (17) and ventrally (18); tarsus of leg III ventrally (19) and dorsally (20); tarsus of leg IV ventrally (21) and dorsally (22). Copulatory organ and spermatheca (23).

setae and including *M. vermicularis* Fain & Lukoschus, 1982, *M. spinitaris* Fain, 1982, *M. gallegoi* (Portus & Gomez, 1979) and *M. corticalis* (Michael, 1885). It is distinguished from all these species by the punctate aspect of the propodonotal shield (without striations), the aspect of the spermathecal sclerite, the relatively shorter aspect of the idiosoma (ratio length : width 1,9 to 2 in the female) and the great development of the punctate shields on coxae I-IV. Moreover it differs from *M. corticalis* and *M. gallegoi* in the females by the presence of 4 ventro-apical spines and 2 very small latero-apical spines on tarsi I-II (only 3 spines in these species).

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