A new endemic genus and three new species of the jumping spiders (Araneae: Salticidae) from the Seychelles Islands

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A new pellenine genus *Microbianor* Logunov, gen. nov. is proposed for three new species from the Seychelles Islands: *M. golovatchi* Logunov, sp. nov., *M. nigritarsis* Logunov, sp. nov. and *M. saaristoi* Logunov, sp. nov. The new genus and species are described and figured, and the affinities of new genus are briefly discussed.

INTRODUCTION

During the ongoing revisions of the genera *Bianor* Simon, 1885 and *Harmochirus* Peckham & Peckham, 1885, I have discovered several species from the Seychelles Islands which cannot be assigned to the above genera. The Seychelles Islands are characterised in having a high level of endemism in many animal and plant groups (e.g. Gerlach *et al.* 1997; Scott 1936; Stoddart 1984; Swabey 1970). For example, the salticid fauna of the Seychelles number 24 species in 14 genera, of which 2 genera and 19 species are endemic (Wanless 1983). Thus, the new genus *Microbianor* described herein is a third endemic salticid genus recorded for the Seychelles Islands.

MATERIALS & METHODS

This study was based on an examination of recently collected specimens from the Seychelles. These specimens were loaned by Dr. K. G. Mikhailov, Zoological Museum of the Moscow State University, Moscow, Russia (ZMUM) and Dr. M. Saaristo, Zoological Museum, Turku University, Turku, Finland (ZMT).

Bilaterally symmetrical structures in descriptions are described in the singular. Holotype and paratype label data are quoted as they appear; a slash (/) indicates the end of a line of print, two slashes (//) signify data on a further label. Significant supplementary or qualifying information is presented in square parentheses when considered necessary.

Abbreviations used in the text:
ALE – anterior lateral eyes; AME – anterior median eyes; ap – apical; d – dorsal; Fm – femur; Mt – metatarsus; PLE – posterior lateral eye; pr – prolateral; rt – retrolateral; Tb – tibia; v – ventral.

Terminology for the leg spination follows the system adopted by Ono (1988). The sequence of leg segments in measurement data is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are in mm.

SYSTEMATICS

Microbianor Logunov, **gen. nov.**

TYPE SPECIES: *Microbianor nigritarsis* Logunov, sp. nov.

DESCRIPTION: Small unidentate spiders ranging from 1.90 to 2.80 mm in length. Sexes similar in general body form, but males differ in having the large abdominal scutum completely covering the dorsum and tiny endite teeth (Figure 15) (both characters totally absent in females).

Carapace: rather high (Figure 4), always shagreened in both sexes; fovea present but poorly visible (Figures 3, 13).

Eyes: in three rows; anterior row clearly narrower (*ca.* 1.2 times) than posterior row; middle row midway between PLE and ALE; quadrangle length 62-71% of carapace length.

Clypeus: vertical, low, between 12-24% of AME diameter; in all known species clypeus either hairless, or with sparce white hairs in both sexes.

Chelicerae: usual shape, subvertical; promargin with two small teeth, retromargin with a single small tooth (Figure 5).

Maxillae: slightly convergent; in males each with a tiny, poorly visible endite tooth (indicated with arrow Figure 15).

Labium: subtriangular.

Sternum: oval, elongate, with anterior margin transverse-straight (Figures 16, 17).

Pedicel: short, always not visible in dorsal view, as abdomen overhangs the carapace.

Legs: more or less subequally developed, but legs I usually stronger, with their femora swollen; dorsal and ventral rows of fringes on male tibia I poorly developed (virtually unmarked) (Figures 6, 14); leg formula I,IV,III,II or I,IV,II,III in both sexes, but legs II and III are sub-equal in length.

Leg spination (only patterns general to all species are described): Tb I: v 1-2-2ap or 2-2-2ap; Mt I: v 2-2ap; Tb II: pr 0-1, v 1-1; Mt II: v 2-2ap; Leg IV spineless or with a single spine (d 1ap) on femora in males.

Female palp: general form, without spines and apical claws.

Male palp: cymbium of usual shape; tibial apophysis always present; the main embolar body ribbon-shaped, while the embolar tip is needle-shaped and curved (Figures 2, 12).

Abdomen: elongate; dorsum in males always completely covered with a large scutum; dorsal colour markings in all known species consist of a narrow anterior pipings and a pair of white spots (Figures 3, 13).

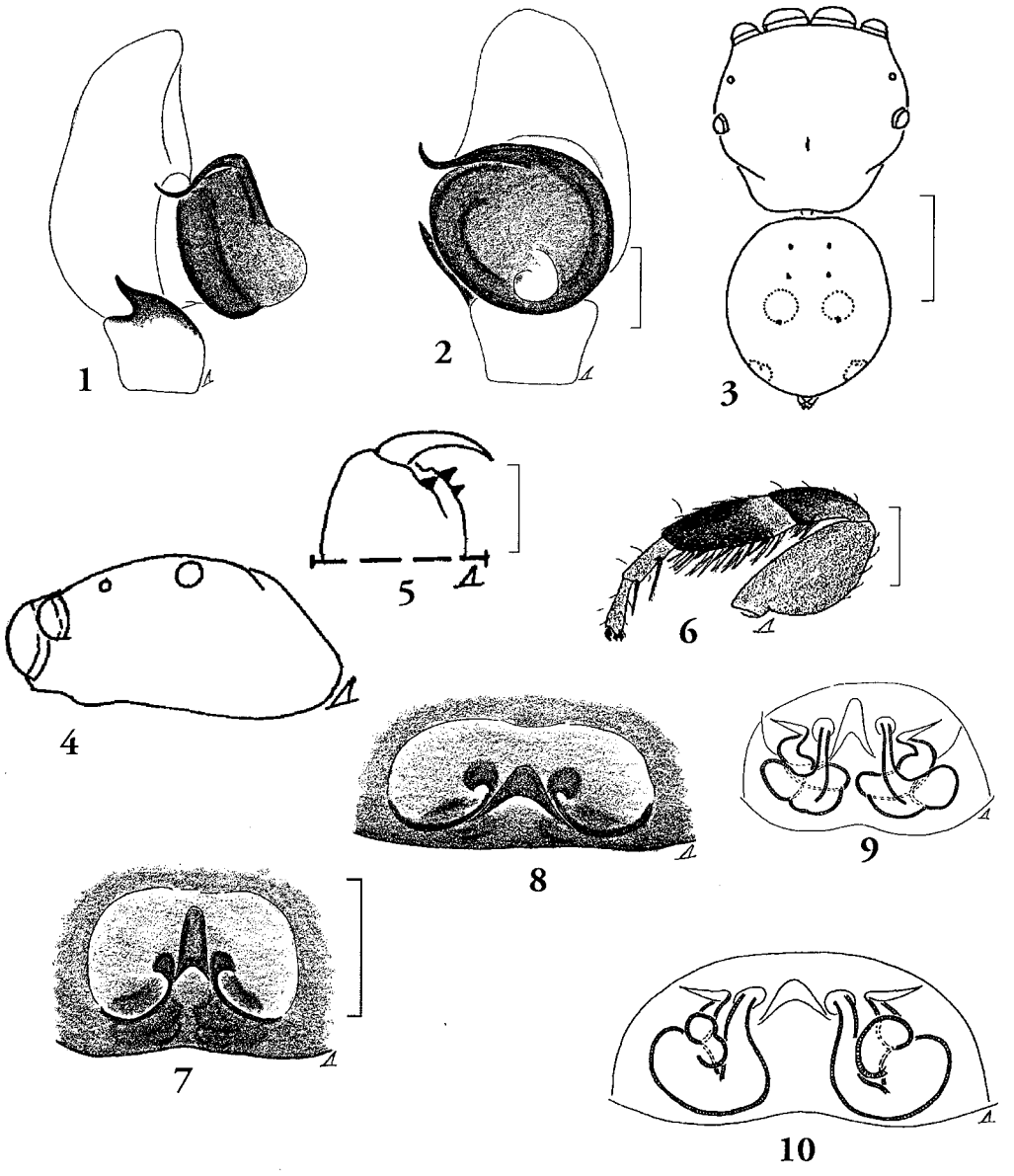
Female genitalia: central blind-ending pocket present (Figures 7, 8, 18); fossae (epigynal atria) undeveloped; insemination ducts very short, tube-shaped and without loops; primary and secondary receptacles usually fused into a single sclerotized chamber (Figures 9, 10, 19, 20).

DIAGNOSIS AND AFFINITIES: *Microbianor* is evidently a member of the Harmochireae group (*sensu* Zabka 1991), which originally included the salticid genera *Bianor* and *Harmochirus*, and is here limited to include those species with the following diagnostic characters: fossae undeveloped (well developed in both *Bianor* and *Harmochirus*); the insemination ducts rather short and lacking loops (Figures 10, 20) (in *Bianor* and *Harmochirus*, long insemination ducts with at least one clear loop; *vide* Davies & Zabka 1989: Figures 22, 47); funnel-shaped inlet cups of the insemination ducts absent (present in both *Bianor* and *Harmochirus*); the secondary receptacles poorly marked or undeveloped (well marked in both *Bianor* and *Harmochirus*); the embolus band-shaped with needle-like, curved tip (always thread-like along the entire length of embolus in both *Bianor* and *Harmochirus*); leg I lacking dorsal and ventral rows of fringes (present in *Harmochirus, vide* Davies & Zabka 1989: Figure 22); tibiae and metatarsi IV lacking spines (at least apical spines always present in both *Bianor* and *Harmochirus*).

Microbianor as here defined comprises three new species, namely: *M. golovatchi* Logunov, sp. nov., *M. nigritarsis* Logunov, sp. nov. and *M. saaristoi* Logunov, sp. nov.

DISTRIBUTION: Restricted to the Seychelles Islands.

ETYMOLOGY: The generic name points to the relationships with *Bianor* and to the fact that all the known species are minute, not exceeding 3 mm in length. The genus is masculine in gender.



Figures **1-10**. *Microbianor* Logunov gen. nov. spp. somatic characters and the copulatory organs. Figures **1-6**. *Microbianor saaristoi* Logunov sp. nov. 1, Male palp, retrolateral aspect; 2, Male palp, ventral aspect; 3, Male body, dorsal aspect; 4, Male carapace, lateral aspect; 5, Male chelicera, posterior aspect; 6, Male leg I, prolateral aspect. Figures **7-10** *M. golovatchi* Logunov sp. nov. 7-8, Epigyne; 9-10, Spermathecae, dorsal aspect. Scale bars: 1, 2, 5, 7-10 = 0.1 mm. 3, 4 = 0.5 mm. 6 = 0.25 mm.

Microbianor golovatchi Logunov, **sp. nov.**

Figures 7-10

MATERIAL: Holotype: ♀, 'Seychelles, Farquhar Atoll [10°09'S, 51°11'E] / 16-19.08.1984, S. I. Golovatch // Holotype / *Microbianor* / *golovatchi* Logunov'. Paratype: 1 ♀, same labels as holotype except: Holotype // 'Paratype / *Microbianor* / *golovatchi* Logunov' (both ZMUM).

DESCRIPTION: Holotype ♀.
Measurements. Carapace 1.27 in length, 1.11 in width, 0.63 in height at PLE. Ocular area 0.91 in length, 0.94 in width anteriorly and 1.17 in width posteriorly. Diameter of AME 0.31. Abdomen 1.34 in length, 1.01 in width. Cheliceral length 0.43. Clypeal height 0.04. Length of leg segments: leg I- 0.81 + 0.40 + 0.46 + 0.33 + 0.29; leg II- 0.59 + 0.33 + 0.31 + 0.29 + 0.21; leg III- 0.63 + 0.36 + 0.27 + 0.33 + 0.26; leg IV- 0.71 + 0.34 + 0.39 + 0.41 + 0.30. Leg spination. Leg I: Tb v 1-2-2; Mt v 2-2-2ap. Leg II: Tb pr 0-1, v. 1-1; Mt v 2-2ap. Leg III: Tb rt. 0-1-0; Mt pr and rt 1ap, v 1-2ap. Leg IV: spineless.

Carapace: yellow orange, shagreened, sparsely covered with white appressed scales. Black around eyes. Clypeus orange, with sparse white long hairs. Sternum yellow, tinged with brown. Maxillae, labium and chelicerae yellow brown. All legs and palps yellow brown to orange, but femora I darker (brown).

Abdomen: dorsum gray brown, with a wide longitudinal interrupted white band consisted of transverse stripes; sides and venter gray brown, venter with a pair of longitudinal yellow lines. Book-lung covers and spinnerets yellow, tinged with brown. Epigyne and spermathecae as illustrated (Figures 7-10).

ETYMOLOGY: The species is named in honour of my friend and collegue Dr. Sergei I. Golovatch (Moscow, Russia), who collected the type material.

DISTRIBUTION: The Seychelles Islands (Farquhar Atoll).

DIAGNOSIS: In comparison to *M. nigritarsis* Logunov, sp. nov., the arrangement of receptacles clearly differs (*vide* Figures 9, 19), the insemination ducts are relatively longer (*vide* Figures 9, 10, 20) and the atrial lips is longer and more stronger curved (*vide* Figures 7, 8, 18).

Microbianor nigritarsis Logunov, **sp. nov.**

Figures 11-20

MATERIAL: Holotype: ♂, 'Seychelles, Silhouette la Pas- / se near Gesthause [4°29'S, 55°14'E] on leipäpuu [breadfruit tree] / 16.01.1999 / M. Saaristo leg. & det. // AA 0.592 / Mus. Zool. Turku // Holotype / *Microbianor* / *nigritarsis* / Logunov // *Harmochirus* sp. 1 ♂' (ZMT). Paratypes: 1 ♂, 'Seychelles, Cousine [4°20'S, 55°40'E], behind of- / fice [= office], in coconut hulls / 25.01.1999 / M. Saaristo leg. & det. // AA 0.593 / Mus. Zool. Turku // Paratype / *Microbianor* / *nigritarsis* Logunov // *Harmochirus* sp. 1 ♂' (ZMT); 1 ♀, 'Seychelles, Mahé near Mare aux [*ca.* 4°39'S, 55°25'E] / Cochons from road side hanging / mosses 2.01.1999, M. Saaristo / Pat Matyot & Maureen Kirpatrick // AA 0.591 / Mus. Zool. Turku // Paratype / *Microbianor* / *nigritarsis* Logunov // *Harmochirus* sp. 1 ♀'(ZMT).

DESCRIPTION: Holotype ♂
Measurements: Carapace 1. 45 in length, 1.13 in width, 0.70 in height at PLE. Ocular area 0.90 in length, 0.98 in width anteriorly and 1.15 in width posteriorly. Diameter of AME 0.46. Abdomen 1.33 in length, 0.95 in width. Cheliceral length 0.43. Clypeal height 0.08. Length of leg segments: leg I- 0.99 + 0.56 + 0.75 + 0.48 + 0.35; leg II- 0.61 + 0.40 + 0.35 + 0.38 + 0.25; leg III- 0.66 + 0.38 + 0.33 + 0.38 + 0.25; leg IV- 0.73 + 0.38 + 0.39 + 0.45 + 0.28. Leg spination. Leg I: Tb v 1-2-2ap; Mt v 2-2ap. Leg II: Fm d 1 ap; Tb pr 0-1, v 1-1; Mt v 2-2ap. Leg III: Fm d 1ap; Tb pr 0-1, v 1ap; Mt pr and rt 1ap, v 1-2ap. Leg IV: Fm d 1ap, remaining segments without spines.

Carapace: dark brown, shagreened, with black around eyes. Clypeus red-brown, with sparce long white hairs overhanging the chelicerae. Sternum orange brown. Maxillae, labium and chelicerae brown. All legs yellow, but tarsi I dark brown, almost black (Figure 14). Palps: coxae and femora brown, remaining segments, including bulbus, yellow. Palpal structure as illustrated Figure 11, 12.

Abdomen: dorsum brown, with a thin white anterior piping and a pair of white spots (Figure 13); dorsum completely covered with a large shining scutum; venter yellow. Book-lung covers yellow. Spinnerets brown.

Paratype ♀ (from Mahé).
Measurements. Carapace 1.38 in length, 1.10 in width, 0.58 in height at PLE. Ocular area 0.88 in length, 0.95 in width anteriorly and 1.14 in width posteriorly. Diameter of AME 0.33. Abdomen 1.23 in length, 0.90 in width. Cheliceral length 0.38. Clypeal height 0.08. Length of leg segments: leg I- 0.70 + 0.40 + 0.43 + 0.45 + 0.28; leg II- 0.56 + 0.46 + 0.30 + 0.30 + 0.25; leg III- 0.63 + 0.33 + 0.29 + 0.38 + 0.23; leg IV- 0.73 + 0.33 + 0.40 + 0.45 + 0.28. Leg spination. Leg I: Tb v 2-2-2ap ; Mt v 2-2ap. Leg II: Tb pr 0-1, v 1-1; Mt v 2-2ap. Leg III: Tb pr and rt 0-1-0, v 1ap; Mt pr and rt 1 ap, v 1-2ap. Leg IV without spines. Coloration (it is clear this specimen had moulted recently being, therefore, rather pale).

Carapace yellow brown, shagreened, with black around eyes. Clypeus brownish, with sparse white hairs. Sternum, maxillae, labium and chelicerae yellow-brown. Leg I yellow, with femora I tinged slightly with brown. Remaining legs yellow, with pale brown rings on articulations of almost all segments. Palps completely yellow.

Abdomen gray brown, with a thin white anterior piping and a pair of white spots; the area between white spots darker than remaining surface of dorsum and appearing to consist of dark brown stripes; venter yellow-brown, with a pair of yellow longitudinal stripes. Book-lung covers yellow. Spinnerets brown. Epigyne and spermathecae as illustrated Figures 18-20.

ETYMOLOGY: The specific name reflects the fact that males bear black tarsi on the fore legs, contrasting with the yellow of the remaining segments (*vide* Figure 14).

DISTRIBUTION: The Seychelles Islands (Silhouette, Cousine and Mahé).

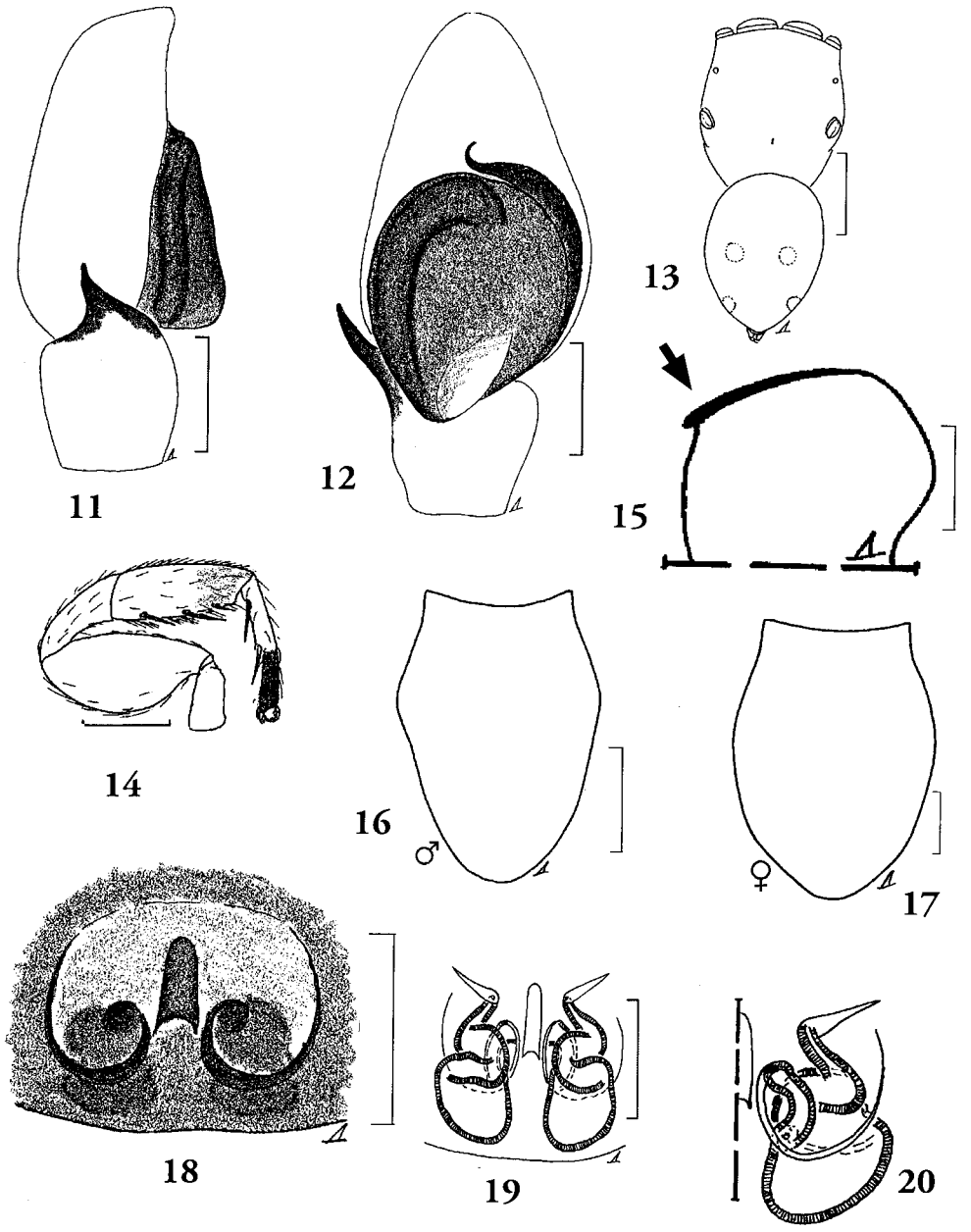
DIAGNOSIS: Males of *M. nigritarsis* may be separated from those of *M. saaristoi* by the longer and wider embolus (*vide* Figures 2, 12) and black tarsi I (*vide* Figures 6, 14). In comparison to *M. golovatchi*, females of *M. nigritarsis* differ in having a clearly differing arrangement of receptacles (*vide* Figures 9, 19), relatively shorter insemination ducts (*vide* Figures 9, 10, 20) and shorter and weaker curved atrial lips (*vide* Figures 7, 8, 18). Males and female of *M. nigritarsis* are provisionally matched.

Microbianor saaristoi Logunov, **sp. nov.**

Figures 1-6

MATERIAL: Holotype: ♂, 'Seychelles / Aride Isl. [4°12'S, 55°40'E] / 13.08.1975 / coll. John Rowley // Mus. Zool. Turku / AA 0.169 // Holotype / *Microbianor* / *saaristoi* Logunov' (ZMT).

DESCRIPTION: Holotype ♂.
Measurements: Carapace 1.01 in length, 0.87 in width, 0.51 in height at PLE. Ocular area 0.69 in length, 0.76 in width anteriorly and 0.93



Figures **11-20**. *Microbianor nigritarsis* Logunov sp. nov somatic characters and copulatory organs. 11, Male palp, retrolateral aspect; 22, Male body, ventral aspect; 13, Male body, dorsal aspect; 14, Male leg I, prolateral aspect; 15, Male maxilla, ventral aspect; 16, Male sternum; 17, Female sternum; 18, Epigyne, ventral aspect; 19, Spermathecae, dorsal aspect; 20, Spermathecae, venral aspect. Scale bars: 11, 12, 15-20 = 0.1 mm; 13, 14 = 0.5 mm.

in width posteriorly. Diameter of AME 0.26. Abdomen 0.91 in length, 0.73 in width. Cheliceral length 0.31. Clypeal height 0.04. Length of leg segments: leg I- 0.54 + 0.34 + 0.36 + 0.26 + 0.23; leg II- 0.41 + 0.24 + 0.23 + 0.23 + 0.21; leg III- 0.46 + 0.21 + 0.17 + 0.26 + 0.23; leg IV- 0.49 + 0.25 + 0.26 + 0.30 + 0.24. Leg spination. Leg I: Tb v 0-2-2-2; Mt v 2-2ap. Leg II: Tb pr 0-1, v 1-1; Mt v 2-2ap. Leg III: Fm d 1ap; Tb v 2ap; Mt 5ap. Leg IV spineless.

Carapace: dark brown, shiny and shagreened. Black around eyes. Clypeus sparsely covered with long white hairs. Chelicerae and sternum light brown. Maxillae and labium light brown, yellow apically. All legs yellow, but legs I with brown patellae and tibiae (Figure 6). Palp yellow with brown femur. Palpal structure as illustrated Figures. 1, 2.

Abdomen: yellow grey, with a pair of pale white spots of scales and large brilliant scutum covering entire dorsal surface (Figure 3). Book-lung covers yellow. Spinnerets yellow grey.

ETYMOLOGY: The species is named in honour of Dr. Michael Saaristo (Turku, Finland), who enabled me to examine the specimens upon which this description is based.

DISTRIBUTION: The Seychelles Islands (Aride Island).

DIAGNOSIS: In comparison to *M. nigritarsis*, the embolus is clearly shorter and narrower (*vide* Figures 2, 12) and tarsi I is yellow (*vide* Figures 6, 14).

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