CHAPTER FOUR

The First Records of *Murricia* Simon from the Afrotropical Region (Araneae: Hersiliidae)

The genus *Murricia* is recorded from the Afrotropical Region and a male of the genus is described for the first time. Two species, *M. uva* and *M. emlynae* are described as new. The significance of certain plesiomorphic characters for hersiliid phylogeny is discussed.

**Key words**: Afrotropical Region, Araneae, Hersiliidae, *Murricia*. 
**Introduction**

*Murrícia* Simon is a small genus in the family Hersiliidae with three species that have been recorded from India, Sri Lanka and Singapore respectively (Platnick 2004). The male of the genus is yet unknown. The female is distinguished by the lateral eyes that are on distinct eye tubercles, the markedly triangular abdomen and the second pair of dorsal muscular pits that are transverse (Baehr & Baehr 1993).

Little is known about their natural history except that they are arboreal forest dwellers. Baehr & Baehr (1993) discussed their origin and possible relationship with *Promurrícia* Baehr & Baehr from Sri Lanka. The taxonomic status of these two genera was considered to be doubtful, as only females are known. The possibility existed that *Murrícia* is a junior synonym of *Hersilia* with *Promurrícia* intermediate between the first two genera (Baehr & Baehr 1993; Rheims & Brescovit 2004). Baehr & Baehr (1993) did suggest that *Murrícia* originated from ground-living hersiliids based on the genus’ restricted distribution in the Oriental Region and the synapomorphic character that *Promurrícia* shares with *Murrícia* namely: the medio-posterior part of the female epigyne having a wide, oval median plate slightly separated from the lateral lobes.

In this study *Murrícia* was for the first time recorded from the Afrotropical Region resulting in a considerable expansion of the genus’ known distribution. The first *Murrícia* male is described and two species that were collected in the forests and grasslands of Central Africa are described as new. This paper forms part of a series on the Hersiliidae of the Afrotropical Region.

**Materials and Methods**

Study area: The area covered by this study is the Afrotropical Region, including the islands in both the Indian and Atlantic oceans.

Abbreviations: The following abbreviations are used in this paper:
ALE - anterior lateral eye; AME - anterior median eye; bS - basal segment of posterior lateral spinneret; CI - carapace index; CL - carapace length; CLL - clypeus length; co - copulatory opening; CW - carapace width; el - epigyne length; ew - epigyne width; Fe – femur; MOQ - median ocular quadrangle; MOQ-AW - MOQ anterior width; MOQ-PW -
MOQ posterior width; MOQL – MOQ length; Mt – metatarsus; Pat – patella; PER - posterior eye row; PLE - posterior lateral eyes; PME - posterior median eyes; r – retromargin; Ta – tarsus; Tib – tibia; tS - terminal segment of posterior lateral spinneret.

Measurements: All measurements are given in millimetres with the observed ranges in parentheses. The following measurements were taken.

Carapace: CI - carapace index (derived by dividing the length of carapace by its width); CL - carapace length (measured from clypeal edge to posterior edge); CW – carapace width (measured over widest part of the carapace); CLL - clypeus length (measured from outer edge of AME to anterior edge of clypeus).

Size of eyes is given as relative to AME in the following order: AME: ALE: PME: PLE.

Legs - length of leg (each segment from the femur to tarsus was measured and the sum of the measurements given as the leg length).

Length ratio of legs is relative to leg I. Murricia spp. have a biarticulation on metatarsus I, II, and IV; the length of the proximal and distal segments of the metatarsi are given under the headings of metatarsus i and metatarsus ii respectively.

Abdomen: length (measured from anterior edge to posterior edge of abdomen) and width (measured over widest part of abdomen); spinneret length.

Material was received on loan from the following institutions: CAS- California Academy of Sciences, Golden Gate Park, San Francisco, California, USA; MNHU – Museum für Naturkunde der Humboldt Universität, Berlin, Germany; MRAC-Koninklijk Museum voor Midden- Afrika, Tervuren, Belgium.

Taxonomy

Murricia Simon, 1882

Murricia Simon, 1882: 255; 1893: 446; Pocock, 1900: 242; Baehr & Baehr 1993: 64.

Type species: Murricia indica (Lucas, 1836)
**Diagnoses.** *Murricia* differs from other hersiliid genera by the lateral eyes that are on a distinct eye tubercle (Figs. 1d & 2d), large posterior lateral eyes; abdomen triangular (Fig. 1e) to trapezoid (Fig. 2e), that is as wide as or wider than long, widest in posterior third; five pairs of dorsal muscular pits with third pair of dorsal muscular pits much larger than rest (Figs. 1e & 2e), second pair very small, postero-mesad of 1st pair; legs short with metatarsi biarticulate; palps with complex coiled sperm ducts; embolus circular, positioned in distal half of bulbus; median tegular apophysis small, triangular, transversely directed, apically attached (Figs. 2a,b); epigyne with copulatory ducts elongate, simple; spermathecae cylindrical, complexly coiled; seminal receptacle varies from multiple seminal receptacles abutting a central stalk to single globose receptacle; fertilization duct simple, short (Fig. 1b).

**Description. Female.** Size: small to medium, range (4.52 - 6.38).

Colour: Carapace varies from pale yellow to dark brown, with dark rim of varying thickness around border; clypeus pale with dark or white markings; eye area dark, white mark posteriad on eye tubercle; sternum pale with mottled white markings; labium and endites pale. Abdomen: dorsum with mottled white background; heart mark narrow, elongate, run along entire length of abdomen; antero-lateral border dark brown; venter pale to mottled white. Legs: femora and tibiae pale with faint to dark annulation and lateral striae.

Carapace: varying between longer than wide to as wide as long; thoracic region widest, cephalic region narrow; dorso-ventrally flattened; fovea longitudinal with radial striae; clypeus truncate in dorsal view, not projecting much beyond eye area, varies in length from 0.88 - 0.94 × median ocular quadrangle length; eye tubercle slightly raised; eyes: PER recurved seen from above and in front (Fig. 2d); AER recurved seen from above and in front; ALE smallest, translucent; PLE >PME<>AME>>PLE with ratio range AME:ALE:PME:PLE = 1: 0.27-0.42: 0.92-1.3: 1.28-2; median ocular quadrangle wider than long; MOQ-AW = MOQ-PW; chelicerae rather stout, 1.61 × longer than wide, retromargin with row of four minute teeth, promargin with three large teeth. Sternum: heart-shaped; labium: sub-triangular, two-thirds the length of endites; endites stout, subquadrate, broadening anteriorly.
Abdomen: wider than long, sub-triangular; dorso-ventrally flattened; five pairs of distinct dorsal muscular pits that vary in size, third pair by far largest, oval (Figs.1c,f); venter with V-shaped muscular pits. Spinnerets: posterior lateral spinnerets long $> 1.5 \times$ carapace width; terminal segment $\geq 4 \times$ length of basal segment; large elongate spinules with truncate apex bordered laterally by shorter spinules with apex acute (Fig. 2f).

Legs: rather short $\leq 2.22 \times$ total body length; either leg I or II longest; leg formula I:II:IV:III; leg III very short, $<0.4 \times$ length of leg I; metatarsus I $> 5 \times$ longer than tarsus I; distal segment of metatarsus $> 0.7 \times$ length of proximal segment; femur, patella, and metatarsus with spines, spine formula tends to be rather similar between species and were variations of the following: I- Fe 1p1d1r-1p1d1r-1p1d1r-1p1r, Pat 1d1d, Tib 1d-1p-1d1r-1p1d1r, Mt 1p1r-1d; II- Fe 1p1d1r-1p1d-1r-1p1d1r, Pat 1p1r-1d, Tib 1d-1p1r-1d-1p1d1r, Mt 1p1r-1p1d; III- Fe 1d-1d-1d-1r, Pat 1d1d, Tib 1d-1v-1d, Mt 1d-1d; IV- Fe 1p1d-1d1r-1d-1p1r, Pat 1d1r1p-1d1r1d, Mt 1r1p-1r1p-1d; spine microstrucutes with randomly arranged conical scales covering spine surface (Fig. 2g).

Epigyne: ovate depressions posterior of copulatory openings (Fig.1a); copulatory ducts simple, elongate; spermathecae cylindrical, complexly coiled (Fig.1b); fertilization duct curved medially.

**Remark.** Forster (1980) suggested a possible evolutionary sequence starting with *Grandungula sorenseni* (Grandungulidae) where the invagination of bursal wall with several small spermathecae form stable bilobed spermathecae. The numerous secondary spermathecae found in Afrotropical females of *Murricia* are hypothesized to be homologous to these small spermathecae.

**Male.** Size: small (4.88 - 5.03). Resemble female in shape and colour; differs structurally as follows: smaller in size; abdomen more slender, subquadrate, widest posteriorly; distal segment of metatarsus $> 0.6 \times$ length of proximal; metatarsus I $> 10 \times$ tarsus I, legs relatively longer, $3.45 \times$ total body length.

Palps (Figs.1h, j): tibia stout, dorsal spines absent; cymbium compact; bulbus large, round, spermd duct complexly coiled; median tegular apophysis small, triangular, distally attached; embolus circular, apex acute, originate retrolaterad on bulbus.
1. *Murricia uva* sp. nov. (Figs. 1 & 3)


**Etymology.** The specific epithet *uva* latin for bunch of grapes refers to the large number of seminal receptacles abutting a central stalk.

**Diagnosis.** Small spiders; eye tubercle slightly raised (Figs.1c,d); clypeus short (Fig.1d); epigyne with impression of lateral spermathecae visible as loop externally (Fig.1a); spermathecae cylindrical complexly coiled; multiple > 30, globose seminal receptacles abutting central stalk (Fig.1b). Male unknown.

**Description. Female.** Size (n=4). TL 5.56 (4.52 - 5.72); CL 2.13 (2.08 - 2.18); CW 2.22 (2.03 - 2.48); CLL 0.39 (0.33 - 0.46); OAL 0.13 (0.12 - 0.13). AME diameter 0.14; AME-AME 0.16; ALE 0.18; MOQ-AW 0.45; ALE diameter 0.04; PME-PME 0.13; PME diameter 0.16; PME-PLE 0.2; MOQ-PW 0.45; PLE diameter 0.23.

Colour: carapace pale yellow, sparsely covered with white setae; clypeus pale yellow; median ocular quadrangle dark; abdomen laterally covered with dense long white setae; mottled white with dark markings postero-laterally; dorsum with narrow lancet-shaped heart mark; posterior half of abdomen with triangular darkly mottled area; legs and palps pale yellow, without annulations.

Carapace: as long as wide (CI 0.97); clypeus short, 1.01 × median ocular quadrangle length, sloping (Fig.1c) not projecting much beyond eye area; eye tubercle depressed, sides vertical (Fig1d); PLE largest; eye ratio 1: 0.36: 1.1: 1.63, MOQ-AW = MOQ-PW; chelicerae elongate, 1.61 × longer than wide; retromargin with row of five to six minute teeth.
Abdomen (Fig.1c): length 3.26, width 4.43; much wider than long, triangular; five pairs of dorsal muscular pits; third pair largest, oval; posterior lateral spinnerets 1.21 $\times$ longer than abdomen, 1.71 $\times$ carapace width; tS 4.1 $\times$ bS.

Legs: leg II longest, 2.22 $\times$ total body length; leg ratio: 1: 0.45: 1.02: 0.93; metatarsus I, 7.64 $\times$ tarsus I; distal part of metatarsus 0.73 $\times$ length of proximal part; leg measurements: I- Fe 3.9, Pat + Tib 3.86, Mt I 2.81, II 2.06, Ta 0.64, total 13.13; II-4.01, 4.14, 2.81, 2.06, 0.6, total 13.35; III-1.53, 1.57, 1.08, 0.55, total 4.77; IV-3.57, 3.39, 2.89, 1.8, 0.56, total 12.19; Palp-0.89, 1.11, 0.75, total 2.63.

Epigyne (Figs.1a,b): elongate (el/ew 0.9); externally with two longitudinal oval depressions; copulatory ducts form regular loop anterior of copulatory openings; multiple globose seminal receptacles abutting central stalk; spermathecae complexly coiled..

**Male.** Unknown.

**Distribution.** Democratic Republic of the Congo, Rwanda, Uganda (Fig. 3).

**Natural history.** Some of the type specimens were collected from trees in the Forests Biome.

2. *Murricia emlynae* spec. nov. (Figs. 1f-j & 2)

**Types.** Male holotype, **Kenya:** Rift Valley Province, Marich Pass, Field studies Centre (1°32’S 35°27’E), 7.vi.1999, W.J. Pulawski, J.S. Schweikert, CAS; - paratype: 1 male, **Cameroon:** Chabal Mbabo, SW slope (07°25’N 12°49’E), 1300 m a.s.l., grassland, 12.iii.1981, Bosmans & van Stalle, MRAC 162559.

**Etymology.** Specific epithet named after the second daughter of the author.

**Diagnosis.** Small spiders; legs long; eye tubercle slightly raised (Fig. 2c); clypeus short (Fig. 2d); male palp with complexly coiled sperm duct; embolus circular with distal curve, apex acute; small triangular median tegular apophysis, transversely positioned (Figs. 2a,b). Female unknown.

**Description. Male.** Size (n=2). TL 4.95 (4.88 - 5.03); CL 2.25; CW 2.03 (1.95 - 2.1); CLL 0.32 (0.31 - 0.33); OAL 0.5 (0.47 - 0.52); AME diameter 0.2; AME-AME
0.16; ALE 0.16; MOQ-AW 0.56; ALE diameter 0.08; PME-PME 0.12; PME diameter 0.17; PME-PLE 0.25; MOQ-PW 0.45; PLE diameter 0.18.

Colour: carapace red-brown to pale yellow, dark broad posterior border, distinct longitudinal fovea; clypeus with dark medial line; eye area dark; abdomen: dorsum white with dark markings, dark antero-lateral border; heart mark lancet-shaped, as long as abdomen; venter pale; posterior lateral spinnerets with strong annulation; legs pale with striations on margins, patellae dark; palps with tarsi dark.

Carapace: longer than wide (CI 1.11); clypeus short, 0.6 × median ocular quadrangle length, sloping; eye tubercle slightly raised; AME largest, eye ratio 1: 0.41: 0.85: 0.9; chelicerae rather stout, 1.85 × longer than wide, retromargin with row of six minute teeth.

Abdomen (Fig. 2e): wider than long, widest posteriorly, sub-quadrate; five pairs of round dorsal muscular pits round, small, except large oval third pair; posterior lateral spinnerets 1.35 × longer than abdomen; 1.92 × carapace width; tS 4 × bS.

Legs: leg II longest, 3.33 × total body length; leg ratio 1: 1.03: 0.32: 0.88; metatarsus I, 10.77 × longer than tarsus I; distal part of metatarsus 0.62 × length of proximal part; leg measurements: I- Fe 4.28, Pat + Tib 4.8, Mt I 3.98, II 2.4, Ta 0.6, total 16.29; II-4.35, 5.33, 4.13, 2.48, 0.6, total 16.51; III-1.65, 1.76, 0.9, 0.38, total 4.65; 3.68, 4.2, 3.75, 2.1, 0.6, total 14.25; Palp-0.9, 0.83, 0.75, total 2.55.

Palps (Figs.1h,i): tibia stout, as long as wide, dorsal spines absent; cymbium compact, 1.5 × longer than wide, three apical spines; bulbus round; sperm duct irregularly coiled; embolus situated in distal half of bulbus, circular with distal curl, apex acute; median tegular apophysis small, triangular, apex acute, prolaterally directed.

Female. Unknown.

Distribution. Cameroon, Kenya (Fig. 3).

Natural history. The male paratype was caught at an altitude of 1300 m a.s.l., in grassland.

References


   
   http://research.amnh.org/entomology/spiders/catalog81-87/INTRO1.html


Figure 1. *Murricia uva* sp. nov. A. Epigyne ventral view. B. Epigyne dorsal view. C. Carapace lateral view. D. Carapace anterior view. E. Female abdomen dorsal view with spinnerets. Illustration by SF
Figure 2. *Murrícia emlynae* sp. Nov.  
A. Left palp ventral view.  
B. Left palp prolateral view.  
C. Carapace lateral view.  
D. Carapace anterior view.  
E. Male abdomen dorsal view with spinnerets.  
Electron micrographs F. Leg spine.  
G. Spinules on posterior lateral spinnerets.  
Illustrations by SF.
Figure 3. Distribution map of Afrotropical species of *Murricia* Simon.