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A new species of *Myrmarachne* from Kenya (Araneae: Salticidae)

WANDA WESOŁOWSKA[1] and KATHRYN SALM[2]
[1]Zoological Institute, Wrocław University, Sienkiewicza 21, 50-335 Wrocław, Poland,
e-mail: tomwes@biol.uni.wroc.pl
[2]167 Memorial Ave., Burnside, Christchurch, New Zealand
e-mail: k_salm@lycos.com

ABSTRACT. Description of *Myrmarachne melanotarsa* n. sp., an ant-like jumping spider from eastern Africa is given. This species, mimicking *Crematogaster* ants, is the first social *Myrmarachne* species hitherto known.

Key words: arachnology, Araneae, Salticidae, *Myrmarachne,* new species, Afrotropical Region, ant mimicry, sociality.

Myrmarachne MACLEAY, 1838 is a very large genus of strongly sexually dimorphic ant-like salticids. Ants may be particularly suitable models because they are avoided by many potential predators of spiders. In most instances, the resemblance of *Myrmarachne* species to ants appears to be an example of Batesian mimicry. Ant mimicry may limit variation range of the general morphology within the genus. However, even genital organs, especially of males, appear to be remarkably similar in all *Myrmarachne* species.

The hitherto known 58 Afrotropical species of the genus were revised by WANLESS (1978). Using details of the copulatory structures he recognized several species-groups in this region. A new species from the *tristis* species-group, found in Kenya is described below. This spider is the first social *Myrmarachne* species.

Myrmarachne melanotarsa n. sp.

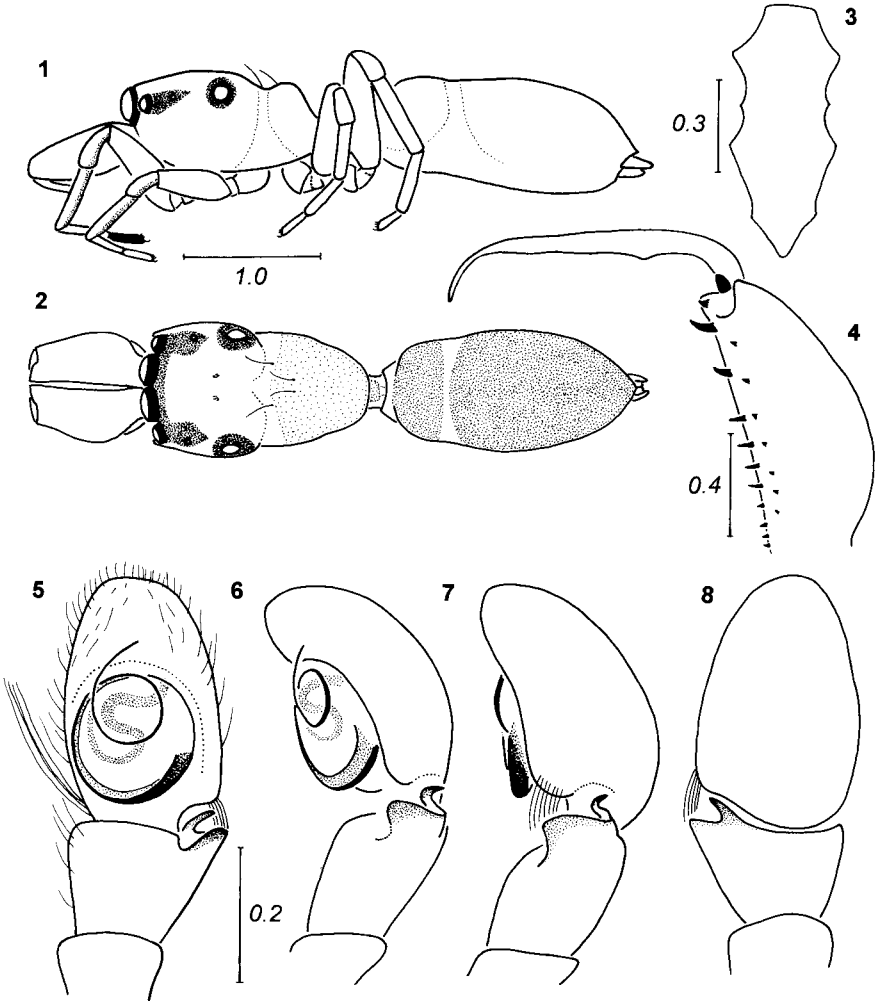
(Figs 1-16)

ETYMOLOGY

The specific name refers to the black tarsi of the first legs.

DIAGNOSIS

This species is closely related to *Myrmarachne luachimo* WANLESS, 1978 from Angola. *M. melanotarsa* differs from it in the black first tarsi and sparser spination

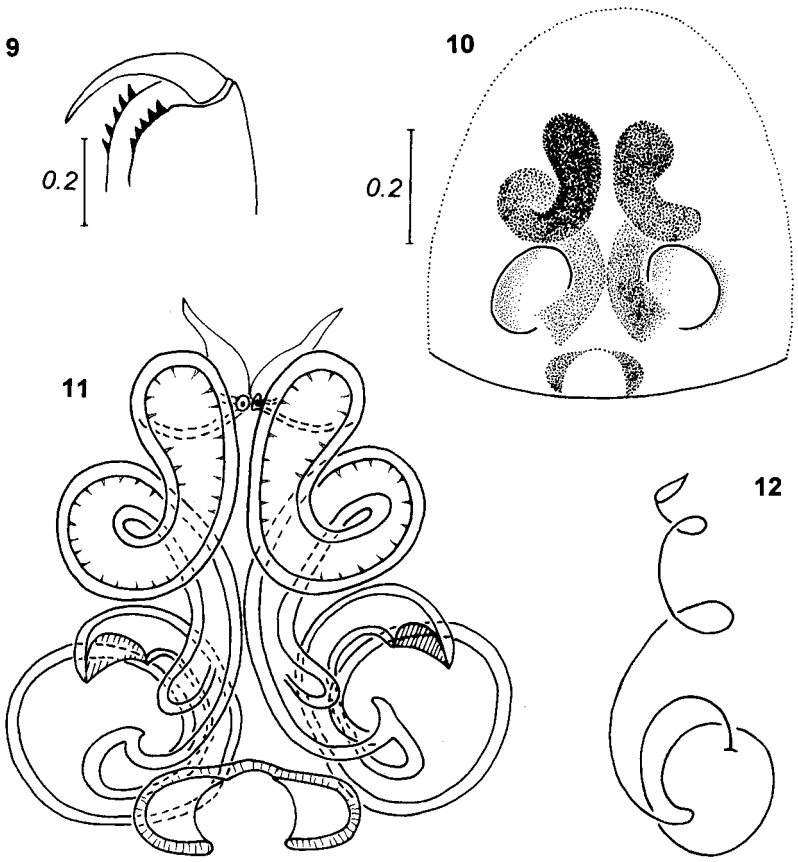


1-8. *Myrmarachne melanotarsa* n. sp., male, paratype: 1-2 – general appearance, lateral and dorsal views, 3 – cheliceral dentition 4 – sternum, 5-8 – palpal organ ventral, ventolateral, lateral and dorsal views

of first tibiae. The male may be distinguished by details of the pedipalp structure; a hooked tibial apophysis (sigmoid in *M. luachimo*), very well developed flange of the apophysis and narrower membraneous pars pendula along basal part of the embolus (cf. Figs 5-7 and Figs 15 B, 15 H in WANLESS 1978). The female has simpler spermathecae forming only one loop, while in *M. luachimo* spermathecae are convoluted and form an "eight" figure (cf. Fig. 11 and Figs 15 D, 15 E in WANLESS 1978).

DESCRIPTION

Measurements [in mm] (male/female). Carapace length 1.5-1.8/1.5-1.7, width 0.9-1.0/0.8-1.0, height 0.5-0.6/0.4-0.6. Abdomen length 1.6-2.1/1.8-2.2, width 0.8-1.1/0.8-1.2. Eye field length 0.7-0.8/0.6-0.7, anterior width 0.7-0.9/0.7-0.8, posterior width 0.8-1.0/0.8-0.9.



9-12. *Myrmarachne melanotarsa* n. sp., female, paratype: 9 – cheliceral dentition, 10 - epigyne, 11 - internal structure of epigyne, 12 – diagrammatic course of seminal duct

Male. Small ant-like spider, general appearance as in Figs 1-2. Carapace constricted with distinct thoracic "hump". Coloration of carapace light brown or brownish red, eyes surrounded by black rings. Eye field punctured reticulate, with numerous silver spots of internal guanine crystals. Long thin brown hairs on

13-14. *Myrmarachne melanotarsa*: 13 - eating a small salticid, 14 - on a leaf

15. *Myrmarachne melanotars*a (left) with its model, *Crematogaster sp.* ant (right); 16. *Myrmarachne melanotars*a on a communal silk sheet

carapace, wedge-shaped patches of whitish hairs on lateral surfaces of carapace, in postocular constriction. Pair of long trichobothria in constriction furrow, second pair on thoracic "hump" (Fig. 2). Chelicerae reddish orange, with 9-11 promarginal teeth and 5-7 on retromargin, fang with small bump-shaped apophysis (Fig. 3). Clypeus very low. Labium and maxillae light brown. Sternum brown, its shape as in Fig. 4. Pedicel short. Abdomen ovoid, slightly elongated, greyish beige to blackish, with two scuta separated by lighter transverse band formed by white hairs. Venter dark, greyish brown. Spinnerets grey. Coxae and trochanters brownish orange, only trochanter IV very light, yellowish white. Legs I and II brownish orange, darker stripes along lateral surfaces of their patellae and tibiae. Tarsi of first legs black. Legs III and IV light brown with slightly lighter metatarsi and tarsi, patella IV light basally. Ventral spination of legs I: tibiae 0 or 2, metatarsi 0-2 or 2-2. Pedipalps brown. Tibial apophysis short, hooked, with well developed flange, protected by depression in cymbium and tuft of long bristles on proximal ectal edge of cymbium (Figs 6-7). Bulbus rounded; tegulum swollen; embolus long and slender, with membraneous expansion along its basal half, coiled around bulbus and forming small loop on anterior part of tegulum (Figs 5-6).

Female. Like male. Carapace reddish orange, thoracic "hump" less as in male. Chelicerae with five tooth on both margins (Fig. 9). Abdomen slightly bigger than in male, without scuta, light brown tinged with grey. Book-lung covers big, strongly sclerotized. Coxae I and II yellow, III light brown, IV yellowish with dark ring distally. Leg coloration as in male, first tarsi blackish. Ventral spination of legs I: tibiae 0 or 2, metatarsi 2-2. Pedipalps brown. Epigyne rather weakly sclerotized, with paired pouches at its posterior edge and two rounded depressions (Fig. 10). Initial part of seminal ducts very weakly sclerotized, coiled and widening to large chambre; posterior part strongly sclerotized; spermathecae rather simple (Fig. 11).

TYPE MATERIAL

Holotype: male, Kenya, Mbita Point, 0°25´S 34°13´E, E shore of Lake Victoria, 1150 m a.s.l., February 1998, leg. R. JACKSON (Florida State Collection of Arthropods, Gainesville).

Paratypes: together with holotype, 3 males, 3 females (Florida State Collection of Arthropods, Gainesville); same locality, 1 male, January 1998 (Florida State Collection of Arthropods, Gainesville); same locality as holotype, 2 males, 3 females, May 2001, leg. K. SALM & R. JACKSON (Natural History Museum, London); 2 males, 3 females, May 2001, leg. K. SALM & R. JACKSON (Musée Royal de l'Afrique Centrale, Tervuren).

REMARK

This species belongs to the *tristis*-group of species (WANLESS 1978), including hitherto 24 species in the Afrotropical region.

HABITAT AND BIOLOGY

M. melanotarsa (Figs 13, 14) was studied in East Africa, in the cambretaceous savannah surrounding Lake Victoria in 2001. *M. melanotarsa* is a social spider. Seventy-four colonies were identified for general study purposes, and five of these were studied in more detail. The detailed study on *M. melanotarsa* biology will be the subject of a separate paper. Only the basic data are provided here.

This species was found on tree trunks or limbs, especially fig trees (*Ficus* sp.). Colonies were based in nest complexes, comprised of a number of adjoining silk retreats unified by a sheet of communal silk (Fig. 16). These nest complexes could vary in size from a couple of centimetres to half a metre in length, and contained anything from a couple to hundreds of spiders in each complex. Most commonly, the colonies studied contained between ten and fifty individuals. Nest complexes housed *Myrmarachne* of both sexes and all ages, and frequently contained a number of other cohabiting species of salticid.

M. melanotarsa was found primarily in colonies built around or in old eggsacs of hersiliid spiders on the tree trunks. Sometimes colonies were associated with eggsacs containing eggs and the female hersiliid was even still present in some cases. Often *M. melanotarsa* was in silk surrounding broken places on the trunks (e.g. scar from a severance of the branch). Occasionally, there were colonies in old lepidopteran cocoons on the trunks or in old wasp nests on the tree boughs.

Crematogaster ants, mimicked by *M. melanotarsa*, were almost always common on the same tree trunks and limbs as this spider species. Frequently these ants were actually in spider colonies, on the silk (Fig. 15).

ACKNOWLEGEMENTS

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