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The first record of *Andoharano* Lehtinen, 1967 (Araneae: Filistatidae) from mainland Africa

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ABSTRACT

The first mainland African representative of *Andoharano* Lehtinen, 1967, *A. ansieae* sp. n., is described from north-eastern Namibia on the basis of both sexes. The new species differs from other congeners in peculiarities of coloration in both sexes, as well as in possessing a small thorn at the base of the embolus. The receptacles of *Andoharano* are studied for the first time. An unexpected occurrence of *Andoharano* in Namibia, with the genus formerly known only from Madagascar, is briefly discussed.

KEY WORDS: Afrotropical Region, Namibia, *Andoharano*, Spiders, Prithinae, new species.

INTRODUCTION

Andoharano Lehtinen, 1967 is a small genus of the spider family Filistatidae known prior to this study exclusively from Madagascar (Platnick 2014; WSC 2015). Only four species are currently assigned to this genus. Among the congeners, three species are known from both sexes and one from the female only. To date, the copulatory organs, namely the male palp, have been illustrated only for one species, *A. grandidieri* (cf. Lehtinen 1967: fig. 24).

The genus was originally described to accommodate two species, *A. decaryi* (Fage, 1945) and *A. grandidieri* (Simon, 1901), both described in *Filistata* Latreille, 1810. Lehtinen (1967: 300) considered *Andoharano* related to *Pritha* Lehtinen, 1967 and *Filistatoides* F.O. Pickard-Cambridge, 1899. Soon after the description of the genus, two more species (*A. milloti* Legendre, 1971 and *A. monodi* Legendre, 1971) were described from Madagascar. It should be noted that all four species were collected from caves (cf. Simon 1901; Fage 1945; Legendre 1971). Later, the genus was assigned to the filistatid subfamily Prithinae Gray, 1995 as a sister genus of *Afrofilistata* Benoit, 1968 (Gray 1995; Ramirez & Grismado 1997).

While studying African filistatids we recognised a small series of two males and two females from Namibia with similar general appearance and somatic characters to a few true *Andoharano* specimens from Madagascar kept in the Musée royal de l'Afrique centrale (MRAC, Tervuren, Belgium). This record indicated that *Andoharano* has a wider range than previously thought. The goal of our paper is to describe this new species, as well as some previously unknown somatic characters and features of the copulatory organs.

MATERIAL AND METHODS

To assign and compare the filistatid specimens noted above, we employed the abundant comparative material, including representatives of the prithine genera *Pritha*,

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Afrofilistata, *Pholcoides* Roewer, 1960 and *Tricalamus* Wang, 1987, partially mentioned in our earlier papers (Marusik & Guseinov 2003; Marusik *et al*. 2004; Zonstein *et al*. 2013). The senior author also studied a female of *Andoharano decaryi* (MRAC 133618; MADAGASCAR: Cave Andoharano – the type locality, 1965, F. Rossi; det. P.L.G. Benoit 1968), as well as an additional congeneric female, unidentified to species level, but in our opinion belonging to *A. milloti* (MRAC 143003; MADAGASCAR: Diego Suarez = Antsiranana, xi.1971, B. Ranson), when he visited this Museum in 2013.

Photographs were taken using a Canon PowerShot G9 digital camera attached to a Zeiss Discovery V20 stereomicroscope. Digital images were prepared using "CombineZP" image stacking software (http://www.hadleyweb.pwp.blueyonder.co.uk/). Illustrations of vulvae were made after maceration in 20 % potassium hydroxide aqueous solution and exposure for a few minutes in an alcohol/water solution of Chlorazol Black.

Measurements were taken via the stereomicroscope, to an accuracy of 0.01 mm. All measurements are given in millimetres.

The following abbreviations are used: *eyes*: ALE – anterior lateral, AME – anterior median, PLE – posterior lateral, PME – posterior median; *spinnerets*: ALS – anterior lateral, PLS – posterior lateral, PMS – posterior median; *other structures*: *Bc* – backward directed coil of spermophor; *Fl* – forelock.

TAXONOMY

Family Filistatidae Ausserer, 1867

Genus *Andoharano* Lehtinen, 1967

Andoharano Lehtinen, 1967: 214.

Type species: *Filistata decaryi* Fage, 1945.

Andoharano ansieae sp. n.

Figs 1–12, 14, 15

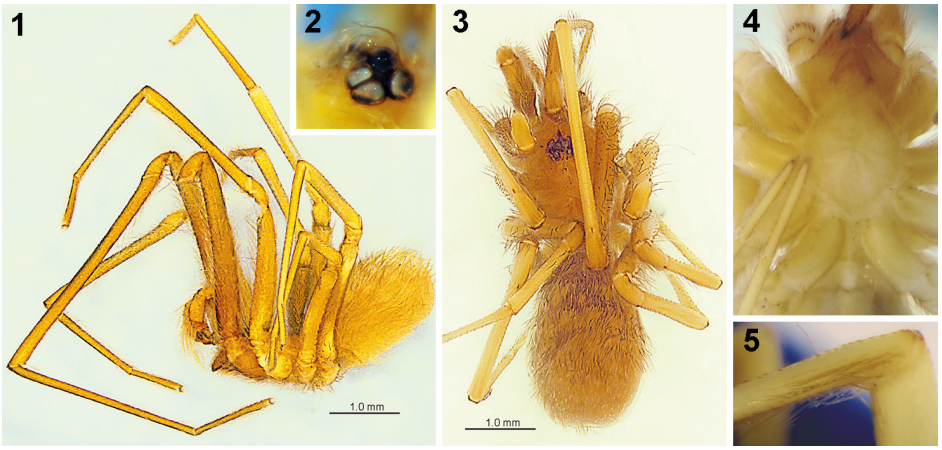
Etymology: The species is named in honour of Dr Ansie Dippenaar-Schoeman, for her immense contribution to the knowledge of African spiders.

Diagnosis: The new species differs: from *A. decaryi* by the absence of an hourglass-shaped dark spot on the carapace (only eye tubercle is darkened); from *A. grandidieri* in having the embolus sharply curved downward (vs. slightly curved sideward in the latter species), as well as by the male palpal tibia weakly dilated apically (vs. strongly dilated; cf. Figs 6–8 and 13); from *A. milloti* by the shorter male palp (2.5 and 2.0× shorter than the body, in the former and the latter species, respectively); and, from *A. monodi* by the diffuse darker colouration of the femora, which are adorned with contrasting brown rings in the latter species. In males of *A. ansieae* sp. n. and *A. decaryi* the leg I is 2.5× longer than the body, in *A. milloti* 3.3×, and in *A. grandidieri* 6.2× (Fage 1945; Legendre 1971). None of the other species possess a thorn in the basal part of the embolus (cf. Figs 9, 10 and Lehtinen 1967: fig. 24). Additionally, *A. ansieae* sp. n. may be distinguished from all previously described congeners, except *A. decaryi*, by the weakly decorated (vs. uniformly coloured) dorsal opistosoma.

Description:

Male (holotype).

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Figs 1–5. Habitus and somatic characters of *Andoharano ansieae* sp. n., (1) male habitus, lateral; (2) eye field, lateral; (3) female habitus, dorsal; (4) female prosoma, ventral; (5) calamistrum, retrolateral.

Body length 3.15. Habitus as in Fig. 1. Colour in alcohol: prosoma and legs almost uniformly clay-yellow with weakly developed darker brownish spots and fasciae; eye tubercle with blackish spot acutely extended to clypeus; opistosoma yellowish-brown with very slightly darker and diffuse dorsal pattern consisting of few almost indistinct transverse fasciae. Carapace 1.27 long, 1.14 wide. Eye tubercle as shown in Fig. 2. Eye sizes and interdistances: AME 0.09, ALE 0.16, PLE 0.14, PME 0.10, AME–AME 0.02. Leg measurements as shown in Table 1. Leg spines absent. Paired claws with 5–8 fine dense teeth. Unpaired claw very small, curved. Palp as in Figs 6–10; short, length equal to carapace length; all segments covered with long hairs; hairs on patella, tibia and cymbium longer than corresponding segments on legs; femur longer than patella+tibia, with long suberected ventral hairs, and decumbent dorsal hairs, longest hairs about half of the segment length; patella twice longer than wide, with long and dense dorsal hairs; tibia subconical, distal edge wider than proximal, and wider than femur width, dorsal hairs sparse in basal half and dense in distal part, some of hairs almost twice longer than tibia; cymbium short, its height shorter than diameter of bulb, apical part with dense brush of hairs forming kind of forelock (*Fl*) (Figs 9, 10) hanging over the bulb, hairs 3× longer than cymbium; bulb with droplet-shaped tegular part and narrow embolic part; embolic part bent down, with small tooth like dorsal outgrowth in basal third; spermophor (sperm duct) with 1.5 coils, distal coil of unusual shape, directed backward (*Bc*) (Figs 9, 10).

Female (paratype).

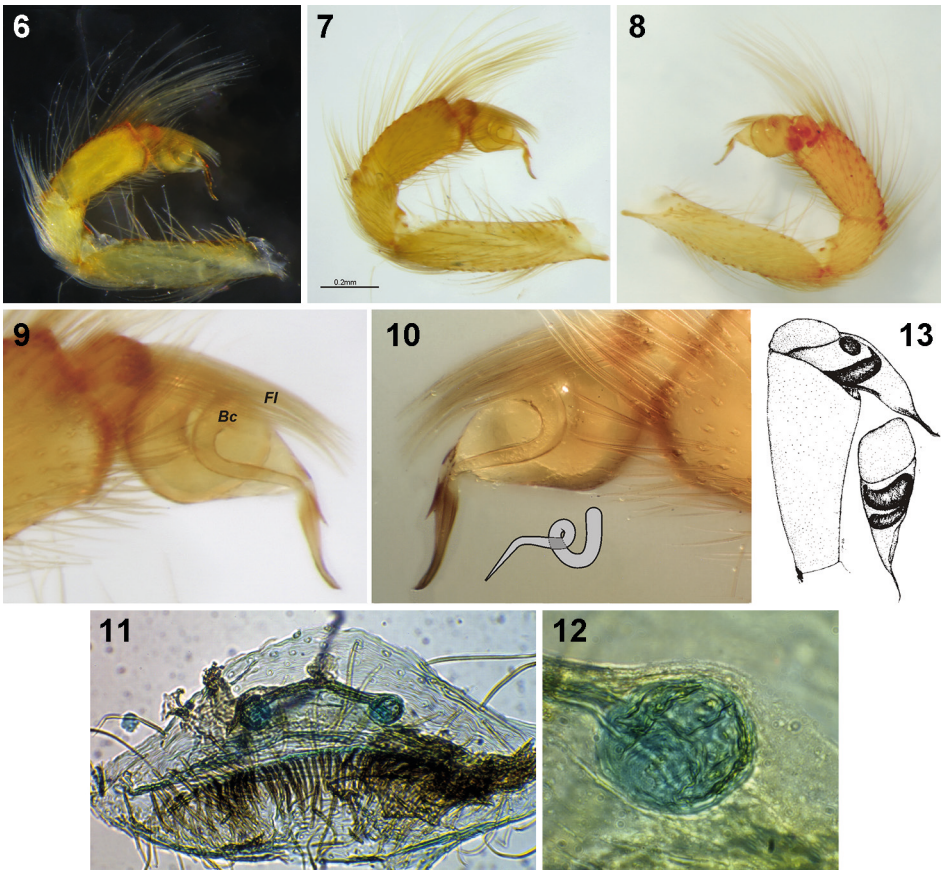
Body length 4.25. Habitus as in Fig. 3. Colour in alcohol and most somatic characters as in male; venter of prosoma uniformly yellowish (Fig. 4); dorsum of abdomen with poorly distinct pattern composed of transverse bands. Carapace 1.60 long, 1.37 wide. Eye sizes and interdistances: AME 0.09, ALE 0.16, PLE 0.13, PME 0.09, AME–AME 0.02. Leg measurements as shown in Table 1 (in parentheses). Calamistrum includes three sessile rows of narrow, weak, moderately long lamellose setae (Figs 5, 14), occupying about 1/5 of metatarsus IV length. Palpal claw large, with 7–8 long dense teeth. Endogyne as in Figs 11, 12; edge of epigastrum with long and dense hairs (Fig. 11); one pair of

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TABLE 1

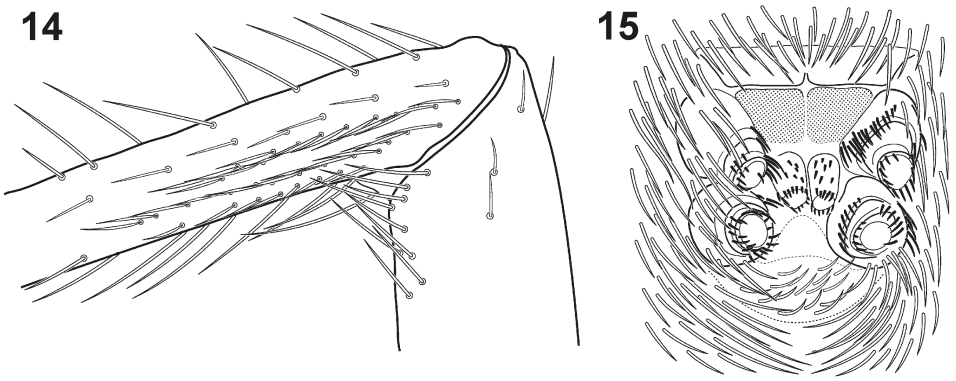
Length of palp and leg segments: holotype male and paratype female (in parentheses).

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palp	0.83 (1.23)	0.32 (0.47)	0.39 (0.80)	-	0.11 (0.91)	1.65 (3.41)
I	2.64 (2.42)	0.55 (0.54)	3.30 (3.43)	2.88 (2.88)	1.19 (1.22)	10.56 (10.49)
II	1.94 (1.78)	0.52 (0.53)	1.93 (1.59)	1.62 (1.54)	0.78 (0.90)	6.79 (6.34)
III	1.62 (1.52)	0.45 (0.51)	1.40 (1.32)	1.14 (1.39)	0.52 (0.78)	5.13 (5.52)
IV	1.88 (1.93)	0.46 (0.59)	1.85 (1.77)	2.04 (1.71)	0.60 (0.89)	6.83 (6.98)



Figs 6–13. Copulatory organs of *Andoharano ansieae* sp. n. (6–12) and *A. grandidieri* (13). (6, 7) male palp, prolateral; (8) male palp, retrolateral; (9) terminal part of male palp, prolateral; (10) terminal part of male palp and schematic course of spermophor, retrolateral; (11) endogyne, dorsal; (12) receptacle, dorsal; (13) terminal part of male palp, prolateral view and from above (after Lehtinen 1967). Abbreviations: *Bc* coil directed backward; *Fl* forelock.

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Figs 14, 15. *Andoharano ansieae* sp. n., female somatic characters. (14) junction of tibia and metatarsus IV showing calamistrum, retrolateral; (15) cribellum and spinnerets, ventral.

round receptacles, spaced *ca*. 3 diameters from each other, receptacles without distinct stems and porous glands, seemingly connected by transverse arch. Spinnerets as in Fig. 15. Spinneret group separated from posterior tip of abdomen by about ⅓ of abdomen length. Cribellum large, bipartite, trapezoidal. ALS and PLS moderately short; PMS relatively large, anteriorly with short and thick modified setae.

Note: The receptacles are very small and pale, almost invisible, and can only be seen after colouring with Chlorazol Black; female specimens can be easily mistaken for juveniles.

Variation: Within the type series the body length varies: in males 3.05–3.15; in females 4.10–4.25.

Holotype ♂: NAMIBIA: Rundu-Kavango, Okavango, 17°57'S 19°43'E, v.1979, leg. M.E. Baddeley (MRAC 152150).

Paratypes: 1♂ 2♀ collected together with the holotype and kept in the same vial.

Distribution: The species is currently known only from the type locality (Fig. 16).

Ecology: Unrecorded. Since all other congeners have been found inhabiting caves (see Legendre 1971), we believe that the spiders might be found in small niches, cavities, and cracks in rock cliffs and rocky outcrops.

DISCUSSION

Three prithine genera are known to date from Africa. *Pritha* is represented here by two species: *P. nana* (Simon, 1868), distributed in the Mediterranean part of the continent, from Algeria to Libya (Benoit 1968; Ledoux 1977), and *P. heikkii* Saaristo, 1978, which is endemic to the Seychelles (Saaristo 2010). The monotypic *Afrofilistata*, based on *A. fradei* (Berland & Millot, 1940), according to Benoit (1968) is recorded from Mali, Burkina Faso and Sudan, but representatives of this genus are distributed more widely, also occurring in Ghana, Senegal, Côte d'Ivoire, Central African Republic, Cameroon, Congo, Tanzania and South Africa (Zonstein & Marusik, in prep.). Finally, until now the distribution of *Andoharano* was considered to be restricted to a few cave localities in Madagascar (Legendre 1971).

For the latter reason, the occurrence of *Andoharano* in Namibia (cf. Fig. 16) was so unexpected that we initially considered it to be based on confused labelling. However,

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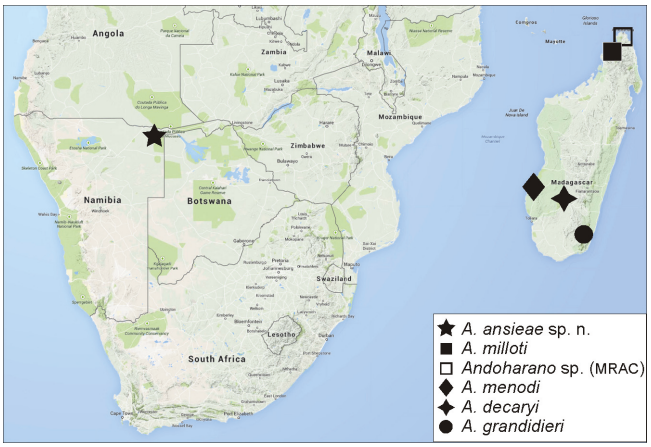


Fig. 16. The known distribution of the genus *Andoharano* Lehtinen, 1967 in mainland Africa and Madagascar.

the findings following examination of the complete sample series provided with these data (MRAC 152149–152158) confirmed their validity. For example, number 152151 with the same label data refers to the paratype male of *Mashonarus guttatus* Wesołowska & Cumming, 2002 (Salticidae), a species whose distribution, known from well-studied material, is restricted to Namibia, Zambia and Zimbabwe (see Wesołowska & Cumming 2002). Hence, we consider the original label data of *A. ansieae* sp. n. as reliable and valid.

Similar occurrences, in which the genus was originally described from Madagascar, but some of the congeners were later found and described from other parts of Africa, are noted below (all references belong to WSC 2015):

– *Damastes* Simon, 1880 (Sparassidae). The genus originally included only three Malagasy species; currently, it consists of 16 members: one from the Seychelles, one from Mozambique and all the others exclusively from Madagascar.

– *Entypesa* Simon, 1902 (Nemesiidae). Two species, including *E. nebulosa* Simon, 1902, the type species, are endemic to Madagascar; one species (*E. schoutedeni* Benoit, 1965) is known from South Africa.

– *Eriauchenius* O. Pickard-Cambridge, 1881 (Archaeidae). The genus was described from Madagascar where a total of 18 species were noted; one species (*E. cornutus* Lotz, 2003) was described later from South Africa, but has since been transferred to *Afrarchaea* Forster & Platnick, 1984 (Wood *et al.* 2015).

– *Geraesta* Simon, 1889 (Thomisidae). For a long time the genus was known only from its type species, *G. hirta* Simon, 1889, described from Madagascar. Later, two additional members were described: one from the same island (*G. lehtineni* Benjamin, 2011), and the other from Tanzania (*G. mkwawa* Benjamin, 2011). Three further species have recently been added to the genus, two of which are continental and one Madagascan (Benjamin, this volume).

– *Hispo* Simon, 1886 (Salticidae). First described from Madagascar as a monotypic genus based on *H. cingulata* Simon, 1886, the genus currently includes nine species (two of them known from the Seychelles, one from mainland Africa and Madagascar, and six are Malagasy endemics).

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