

A POSSIBLE RECORD OF *RHOMPHAEA LONGICAUDATA* FROM GREECE (ARANEAE, THERIDIIDAE)

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ABSTRACT

A possible record of *Rhomphaea longicaudata* from Greece (Araneae, Theridiidae)

A female *Rhomphaea* specimen is described, depicted and provisionally identified as the so far unknown female of *Rhomphaea longicaudata* (O.P.-Cambridge, 1872) **comb. nov.** A summary of the species of the genera *Ariamnes* and *Rhomphaea* occurring in the mediterranean and adjacent regions is presented.

Key words: *Ariamnes*, Greece, new combination, *Rhomphaea*

INTRODUCTION

A single female theridiid specimen was collected near Alexandroupolis in the province of Thracia in Greece this summer. Serious efforts to collect more specimens of this species in the same habitat remained without success. The specimen was kept alive for a while to study its behaviour and also expecting that it might produce an egg batch (which it did not). It allowed of taking pictures of the specimen in a natural position.

Identification efforts led to the genera *Rhomphaea* or *Ariamnes*. Three European species presently placed in *Rhomphaea* were originally described in *Ariamnes* (for the use of generic names, see below) by Simon in 1873 (*argenteolus*, *nasica*, and *rostratus*), all from Corsica. The descriptions were repeated in the early version of Les Arachnides de France (Simon 1881) and in the last version (Simon 1914). They were transferred to *Rhomphaea* by Simon himself (Simon 1894). In the 1881 and 1914 versions identification keys are included. As to illustrations, the 1873 descriptions have figures of the profile outline and dorsal pattern of the soma of the male of *A. nasica* and the prosoma and profile outline of a juvenile specimen of *A. rostratus*. In 1881 Simon again depicts a female of *A. rostratus*, now with legs, after a specimen from the Gironde, France. In 1881 he depicts again the male of *A. nasicus*, also with legs included, after a specimen from Corsica. *Ariamnes argenteolus* is then depicted for the first time after a female from Corsica. The 1914 publication does not contain any figures of these species.

A fourth species, *Ariamnes delicatulus*, was described by Simon after a female from Ponta Delgada, Azores (Simon 1883) with only the profile outline of the body depicted. A fifth species, *Rhomphaea longa*, was described by Kulczynski (Kulczynski 1905) after a female from “Herzegovina: Domanovic” (a village S of Mostar in the Neretva River Basin). Kulczynski depicts the profile outline of the female specimen and is the first one to depict the epigyne of this species. All authors so far had concentrated on the peculiar shape of the abdomen with its prolonged, tail-like abdomen behind the spinnerets, and on the prosomal structures of the males.

Berland (Berland 1920) found *Rhomphaea argenteola* (Simon) also in Algeria and East-Africa (Kenia) and illustrates the variation in shape of the abdomen, from cone-shaped to prolonged behind the spinnerets. From Kenya he also reports on *Rhomphaea sjostedti* Tullgren 1910, originally described from Tanzania, also with a cone-shaped abdomen in the female. In 1926 Berland reports on a male of *Rhomphaea rostrata* from France (Dept. Var) and depicts the specimen in lateral aspect, the palp in some detail, and the prosoma as seen from above (Berland 1926).

Schmidt adds a sixth species, *Rhomphaea canariensis*, based on a juvenile specimen (!) which was imported into Germany with bananas from the Canary Islands (Schmidt 1956). *R. nasica* was recorded from Arta on Pros, Greece (Knoflach & Pfaller 2004: 116, figs 3b, d) but the record may have passed unnoticed because it was indicated only in the caption of a picture.

Summarising we may conclude that very few illustrations of the genitalia are available for the European and North African species. Of *Rhomphaea rostratus* the male palp was depicted by Berland (1926, fig. 2) and Wunderlich (1987, fig. 540), and the epigyne by Kulczynski (1905, pl. 14 fig. 1, sub *Rhomphaea longa*). For *Rhomphaea nasica* male palp, epigyne, and vulva were depicted by Benoit (1977, figs. 58a, b, e, f).

Wunderlich (Wunderlich 1987) established a number of synonymies in *Argyrodes* in which genus he places both *nasicus* and *rostratus*, and also *A. incertus* Wunderlich from the Canary Islands, *A. syriacus* O.P.-Cambridge from Syria and Israel, the widespread *A. argyrodes*, and *Ariamnes longicaudatus* O.P.-Cambridge from the Lebanon and Israel. He maintains *A. nasicus* (page preference) with *A. argenteolus* and *A. delicatulus* as junior synonyms, and considers *A. longicaudatus* and *A. rostratus* as separate species, the latter with *Rhomphaea longa* and *R. canariensis* as junior synonymms. Wunderlich provided a key to the West-Palaeartic species of *Argyrodes* in which he brought all these species together. Wunderlich, again, depicts the profile outline of the abdomina and only the male palp of *A. rostratus*, and stresses, as several of the earlier authors did, the variability in abdominal shape in *A. nasicus*.

Platnick (Platnick 2009) lists *nasica*, *rostrata*, and *sjostedti* in *Rhomphaea*, *argyroides* (type species) and *incertus* in *Argyroides*, and *longicaudatus* in *Ariamnes*, while *syriacus* is placed in *Neospintharus*, a mainly New World genus (*syriacus* looks a bit out of place there). In this he follows Agnarsson (Agnarsson 2004).

Other species of the genus *Rhomphaea* as presently delineated (see below under discussion) occur mostly in tropical and subtropical regions and exceptionally in more temperate regions.

ANALYSIS OF POSSIBILITIES

Having studied the new specimen from Greece and the available literature it became clear that I had not the female of *Rhomphaea nasica* or *rostrata* before me, because the epigynes of these species look different. I had to broaden my view in geographical as well as in taxonomic aspect. I tested the descriptions of *Rhomphaea sjostedti* Tullgren, 1910 from Tanzania and *Rhomphaea hyrcana* (Logunov & Marusik, 1990) and *R. sagana* (Dönitz & Strand, 1906), both from the East Caucasus; of *Argyroides incertus* Wunderlich, 1987 from the Canary Islands; of *Ariamnes longicaudatus* O.P.-Cambridge, 1872 (male only) from Lebanon; and of *Neospintharus syriacus* (O. P.-Cambridge, 1872) from Lebanon and Israel.

The characters given in the description of *Rhomphaea sjostedti* fit the specimen from Greece rather well but the figure of the epigyne does not: there is a small central pit without the small, tongue-shaped protrusion between the entrances of the sperm ducts as present in the specimen from Greece. *R. hyrcana*, known from male and female, and *R. sagana*, also known from both sexes, both species occurring in the East Caucasus and as far as Japan, do have this tongue-like process but neither of them shares the other characters with the specimen from Greece; *hyrcana* is smaller, the vulva does not conform in detail, and despite the resemblance of the frontal part of the prosoma (pattern on the protruding clypeus) I cannot identify the Greek specimen with *R. hyrcana*; the epigyne of *R. sagana* is clearly different from the Greek specimen. Illustrations of both species are supplied by Logunov (Logunov et al. 1990) and Yoshida (Yoshida 2001); I was not able to read the Russian resp. Japanese texts, and have used the illustrations only.

Argyroides incertus from the Canary Islands was described from male and female; shape of abdomen and epigyne are completely different from the specimen from Greece. The same holds for *Neospintharus syriacus* from Lebanon and Israel, the female of which has a very variably shaped abdomen, prolonged but bluntly tipped, and much shorter legs. Thus the last candidate, *Ariamnes longicaudatus* from Lebanon, remains as last possibility. Or this female from Greece belongs to a yet undescribed species.

Ariamnes longicaudatus was described after a single male found in the web of *Epeira opuntiae* Dufour (= *Cyrtophora citricola* (Forsskal)) in Beirut, Lebanon. No new material seems to have been found since. The general description (of the male) agrees sufficiently well with the specimen from Greece to suggest that I can describe the female of this species here. I transfer it to *Rhomphaea* as *Rhomphaea longicaudata* (O.P.-Cambridge, 1872) **comb. nov.** Of course this new combination is put forward on the assumption that the specimen studied is indeed the female of *Ariamnes longicaudatus*.



Figs. 1-2. *Rhomphaea longicaudata*, lateral aspect. Photo Eelco Kruidenier.



Figs. 3-4. *Rhomphaea longicaudata*, general aspect and prosoma, oblique view. Photo's Roy Kleukers.

MATERIAL AND DESCRIPTION

GREECE: 1♀, Thracia, NW of Alexandroupolis, beaten from shrubs of *Quercus coccifera*, 22.viii.2009, P.J. van Helsdingen leg. (RMNH).

Description.

Diagnosis: A specimen with extremely long and thin legs and a prolonged abdomen with a hook-shaped tip (figs. 1-3). Elongate, prosoma with dark margins which continue over the clypeus and chelicerae, with very long and thin legs, lightly coloured abdomen prolonged behind spinnerets and ending with a hook-like tip.

Measurements (in mm). Total L of body (chelicerae included) 8.5; prosoma L 1.7, W 1.05, H (of posterior bulging part) 0.55; L of clypeus 0.39; abdomen L 6.5, W 1.4, H 1.9 (spinnerets included); sternum L 1.35, W 0.6; chelicerae L 0.5 W 0.4.

Coloration. Overall colour of body light yellow with the following markings. Prosoma with grey to dark grey lateral bands over whole length, these bands about one-sixth of width of prosoma, continuing on the sides of the clypeus; from the fovea, along the two eye clusters, over the clypeus and on to the base of the chelicerae run two narrower grey lines (V-shaped in front of the fovea). Chelicerae each with a dark grey frontal band. Sternum, labium, and ganthocoxae light with faint, small brown dots, tip between coxae IV dark grey to black. Legs I and II with thin grey lines dorsally and ventrally over all segments, on legs III and IV partly present in the form of rows of blotches; no annulations except narrow rings at tips of coxae I and II. The much thicker palps have a dark grey dorsal side. Abdomen light on dorsal and ventral sides, strewn with silvery-white blotches, separated on sides by a dark-grey to blackish band from bas to halfway the prolongation of the abdomen behind the spinnerets; dorsally some faint grey spots and a faint grey central dorsal spot on the prolonged part; terminal hook with dark tip. This results in a set of more or less continuous longitudinal markings over dorsal side of palps, sides of clypeus, sides of prosoma, and sides of abdomen, and a second set over chelicerae, clypeus, and anterior half of the prosoma, converging at the fovea.

Prosoma. Eyes (fig. 4) on slight elevation, behind this up to fovea more or less flat, behind the fovea a conspicuous bulge (as seems to be characteristic for species of this genus), a deeper cleft between the posterior bulge and the frontal part. Eyes in two lateral clusters consisting of AME, ALE-PLE, and PME; AME with dark tapetum, the other eyes are pearly white; AME and PME of equal size, \emptyset 0.087, lateral eyes smaller, distance between median eyes of both rows 1.4 times their \emptyset . Sternum. Elongated and prolonged between coxae IV. Labium not rebordered, labium-sternum connection with seam. Chelicerae: about parallel-sided and pointing obliquely antero-ventrad; anterior margin with one strong tooth.

Legs. Extremely long and thin. No spines or thrichobothria found, hairs short and erect, about as long as \emptyset of segments. Ti I diameter 0.075 over most of its length, leg slightly thicker at connection with patella (\emptyset 0.125), resulting in a L/ \emptyset ratio of 88 (!); Mt I diameter 0.050, L/ \emptyset ratio 68. Palp much thicker; Fe club-shaped, \emptyset 0.225, Ti \emptyset 0.175, Ta tapering towards tip.



Figs. 5-6. *Rhomphaea longicaudata*, abdomen and caudal part in detail, lateral view. Photo's Menno Schilthuizen.

Measurements (note the very short leg III):

	I	II	III	IV	palp
Fe	8.6	4.3	2.0	6.3	0.72
Pa	0.5	0.6	0.45	0.5	0.27
Ti	6.6	3.6	1.45	4.2	0.45
Mt	3.4	2.3	1.07	2.3	-
Ta	1.8	1.0	0.57	0.8	0.57

Abdomen. Shape as depicted (figs. 5-6). Posterior section (from above spinnerets to anterior margin) four times as long as anterior section (from anterior margin to above spinnerets); claw at tip curved ventrad; posterior section has a faintly wrinkled appearance as if it is flexible there, while the integument is more brownish, with the silvery-white blotches more sparse and deeper under the integument; the abdomen is slightly bent dorsad at this point (in the fixed specimen); from the bend onwards the abdomen bears more erect but short setae than in the anterior part.

Genitalia. Epigyne (fig. 7) very simple and at some distance from epigastric furrow. A small, median, tongue-shaped structure with tip directed forward, partly covering and separating the entrances of the sperm ducts, which in the ventral view are indicated as socket-like structures at either side of the little tongue. Width of tongue at base about 0.05 mm. Receptacula faintly visible through integument. Vulva (fig. 8-9) equally simple, with two large, slightly elongate and very slightly diverging receptacula; the short sperm ducts enter the receptacula postero-ventrally; the short fertilization ducts leave the receptacula at the posterior end and curve ventrad in a short spiral.

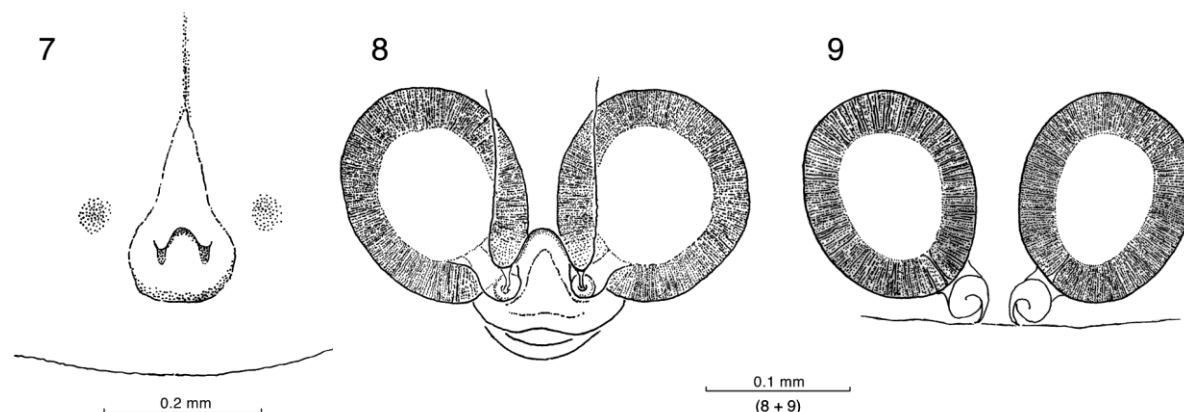


Fig. 7-9. *Rhomphaea longicaudata*. 7, epigyne; 8, vulva, ventral aspect; 9, vulva, dorsal aspect.

DISTRIBUTION OF THE KNOWN EUROPEAN SPECIES

Rhomphaea longicaudata: Lebanon (O.P.-Cambridge 1872), Greece (present paper).

Rhomphaea nasica: France (Wunderlich 1987), Corse (Simon 1873, 1881, 1914), Portugal (Cardosa 2009), Canary Islands (Wunderlich 1987), Azores (Wunderlich 1992, Borges & Wunderlich 2006), Madeira (Denis 1963), Italy (Pesarini 2003), Croatia (Milosevic 2002), mainland Greece (Knoflach & Pfaller 2004; present paper), Algeria (Simon 1914; Berland 1920), Kenia (Berland 1920), Sierra Leone (Simon 1907), Congo (Simon 1907, 1914), Sao Tomé (Simon 1907), St.-Helena (Benoit 1977).

Rhomphaea rostrata: France (Simon 1881, 1914; Berland 1926; Wunderlich 1987), Corse (Simon 1873, 1881, 1914), Portugal (Cardosa 2009), Canary Islands (Wunderlich 1987), Azores (Wunderlich 1992, Borges & Wunderlich 2006), Bosnia-Herzegovina (Kulczynski 1905), Croatia (Milosevic 2002).

DISCUSSION

The genera *Rhomphaea*, *Ariamnes*, and *Argyrodes* seem closely related and the names have been used confusingly. Levi & Levi (1962) synonymised *Rhomphaea* and *Ariamnes* with *Argyrodes*, but Agnarsson (2004) restored the pre-Levi & Levi situation on the basis of an extensive phylogenetic study of Theridiid genera. According to Agnarsson (2004, table 1) the differences between *Rhomphaea* and *Ariamnes* are as follows.

	<i>Rhomphaea</i>	<i>Ariamnes</i>
1 spermathecal junction of copulatory duct	posterior	lateral or anterior
2 shape spermatheca	ovoid	elongate
3 male palpal tibial rim	uniform	strongly asymmetrically protruding
4 cymbial distal promargin	entire	with apophysis
5 embolic terminus	abrupt	with apophysis
6 carapace coloration	longitudinal dark band	uniform
7 pars stridens on carapace	regular parallel ridges	smooth, or irregular
8 pars stridens on andomen	separate patches	[no score]
9 sternocoxal tubercles	present	absent
10 epiandrous gland spigots	absent	present
11 epiandrous spigot arrangement	[no score]	one pair of sockets
12 epiandrous gland spigot pair number	[no score]	less than 8
13 tarsus IV comb serrations	simple, straight	curved hooks
14 egg case structure	rhomboid	elongate

For the specimen at hand (♀) only the female characters and the general somatic characters are relevant (lines 1-2, 6-9, 14). Lines 7-8 relate to the stridulatory organ on the posterior side of the carapace (ridges) in correlation with setae or comparable structures on the anterior surface of the abdomen above the pedicel (but not scored for *Ariamnes* by Andersson). The specimen from Greece scores for *Rhomphaea* as to character states 1, 2, and 6.

Rhomphaea species are supposed to be kleptoparasites. *Rhomphaea longicaudata* was found in the web of *Cyrtophora citricola* (Forsskal) (O.P.-Cambridge, 1872). Densities are usually low, specimens only found in small numbers by beating shrubs and trees, as was my own experience.

ABBREVIATIONS USED: RMNH = National Museum of Natural History, Leiden, Netherlands (formerly Rijksmuseum van Natuurlijke Historie).

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