

On the genus *Bristowiella*, with the description of *B. kartalensis* n. sp. from the Comoro Islands (Araneae, Lycosidae)

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Summary

A definition of the genus *Bristowiella* Saaristo, 1980 (Araneae, Lycosidae) is given and its distribution is discussed. *Bristowiella seychellensis* (Bristowe, 1973) is redescribed and a second representative of the genus, *B. kartalensis* n. sp., is described from the Comoro Islands.

Introduction

In 1972, Bristowe discovered a new lycosid spider on the island of Mahé in the Seychelle archipelago which he described as *Pardosa seychellensis* (Bristowe, 1973). In view of the rather peculiar structure of the copulatory organs, Saaristo (1978) erected a new genus for this species which he called *Bristowia*. This name was rejected because of its preoccupation by a salticid genus (Reimoser, 1934), and replaced by *Bristowiella* (Saaristo, 1980).

Hitherto, *Bristowiella seychellensis* (Bristowe, 1973) was the only known representative of the genus and was believed to be endemic to the Seychelles. The study of a collection of lycosids from the Comoro Islands (see Jocqué (1985) for a short description of the site and more details on the collection) revealed that the species is also present and common on this archipelago. Moreover, a second representative of the genus was discovered. It is partly sympatric with the first species but occupies a different habitat.

All the studied material is deposited in the Musée Royal de l'Afrique Centrale, Tervuren, Belgium (MRAC).

Genus *Bristowiella* Saaristo, 1980

Diagnosis

The diagnosis of the genus given by Saaristo (1978) is very short and based only on female specimens. I

therefore extend the definition of the genus, now based on both sexes.

Small lycosid spiders (3-5 mm). Epigyne with a typical heart-shaped median plate and two clear spermathecae. A deep atrium, with two pockets on its anterior side, lies in front of median plate. Male palp characterised by a very large and broad median apophysis and a large pointed terminal apophysis; cymbium covered with black hairs.

Anterior eyes equal in size, and much smaller than posteriors. Anterior row slightly procurved, and distance between anterior medians slightly larger than between anterior medians and anterior laterals. Posterior medians more than one diameter apart.

Retromargin of chelicerae bears three distinct teeth. Type species: *Pardosa seychellensis* Bristowe, 1973.

Distribution

The genus *Bristowiella* seems to be restricted to the Seychelle and Comoro archipelagos in the Indian Ocean. However, its presence on Madagascar, the Mascarenes and Aldabra is not to be excluded, as the ground-living spiders of these islands are very poorly known. No representatives have been found on the African continent.

***Bristowiella seychellensis* (Bristowe, 1973) (Figs. 2, 4, 7, 9)**

Pardosa seychellensis Bristowe, 1973: 220-222, figs. 1-6 (♂, ♀).
Bristowia seychellensis: Saaristo, 1978: 107-108, figs. 88-91 (♀).
Bristowiella seychellensis: Saaristo, 1980: p. 116.

Diagnosis: See Table 2.

Description: All measurements (in mm) based on at least 5 specimens.

Male: Total length: 3.22-3.51. Carapace: Length 1.92-2.02, width 1.40-1.42. Dark brown to almost black with very broad and strongly contrasting, clear yellow lateral bands. Median light band narrow and often faint. Yellow lateral bands with a band of variable black mottling near the sides. Carapace margin with a narrow black stripe. Eyes: Diameter PME 0.16-0.17, and more than one diameter apart, diameter AME 0.06-0.08, and approximately one diameter apart. Chelicerae: Dark brown contrasting with yellow inner margin. Sternum: Yellow. Legs: Uniformly yellow, without distinct annulations. Measurements as in Table 1. Abdomen: Dorsally with a dark brown pattern, becoming narrower posteriorly. Sides in front

Females						
	Fe	Pa	Ti	Mt	Ta	Total
I	1.47	0.68	1.22	1.18	0.86	5.41
II	1.45	0.69	1.15	1.19	0.84	5.32
III	1.44	0.64	1.08	1.34	0.77	5.27
IV	1.97	0.72	1.70	2.49	1.11	7.99
Males						
	Fe	Pa	Ti	Mt	Ta	Total
I	1.14	0.62	0.98	0.94	0.78	4.46
II	1.14	0.60	0.92	1.00	0.74	4.40
III	1.18	0.52	0.88	1.12	0.68	4.38
IV	1.60	0.62	1.30	1.92	0.98	6.42

Table 1: Mean leg measurements (mm) of *Bristowiella seychellensis* (Bristowe) (n = 3).

	<i>Bristowiella seychellensis</i> (Br.)	<i>Bristowiella kartalensis</i> n. sp.
Coloration	Carapace with clear pattern	Carapace without clear pattern
Legs	Mainly yellow	Mainly brown
Male palp	Terminal apophysis pointing slightly distally and slender	Terminal apophysis pointing laterally and thicker
Vulva	Spermathecae almost straight	Spermathecae sharply curved
Male length	3.2-3.5 mm	4.0-4.2 mm
Female length	3.9-4.6 mm	4.4-5.2 mm

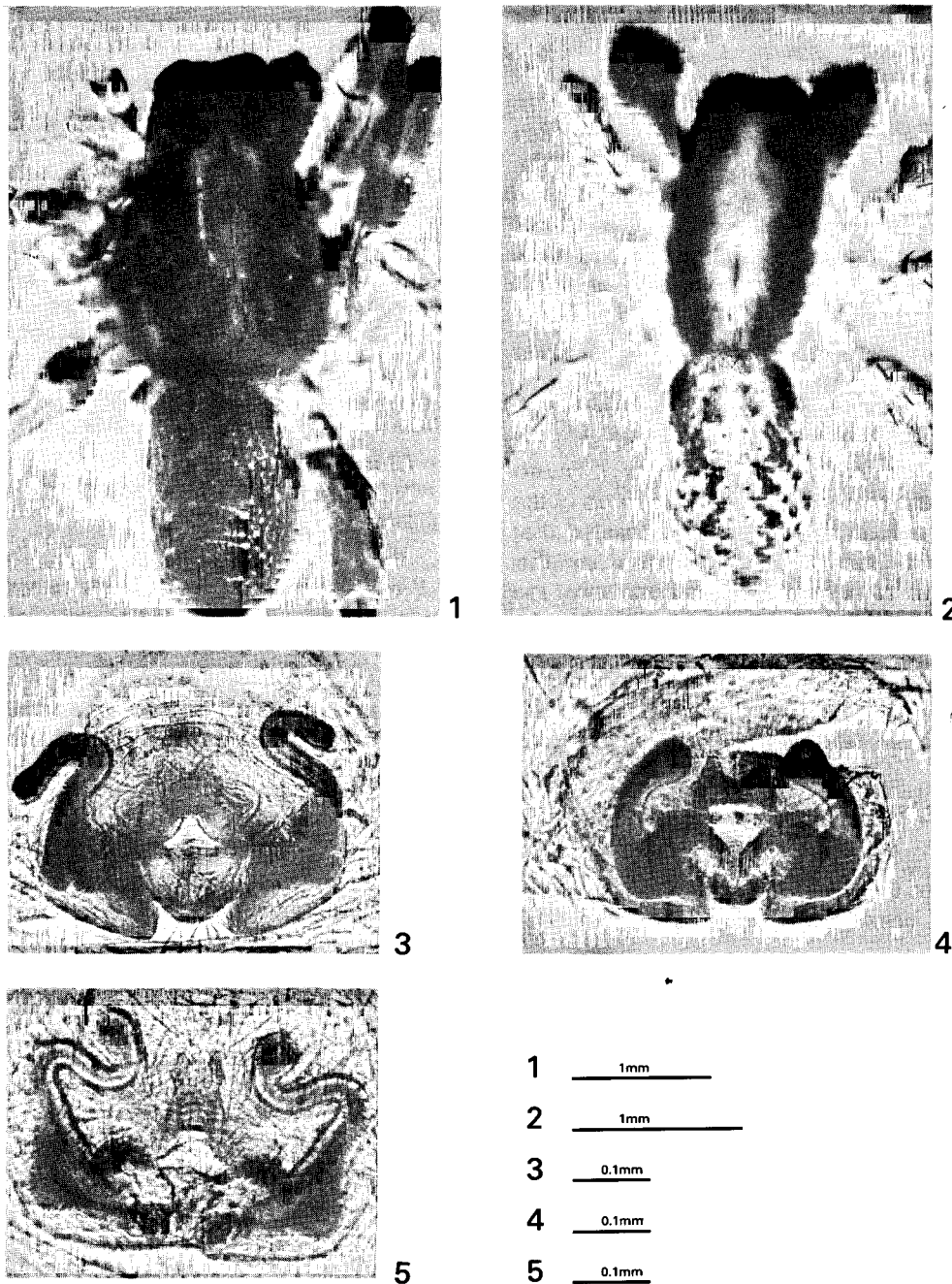
Table 2: Main differences between the two *Bristowiella* species.

with two white maculae, posteriorly yellow with black spots. Male palp: Black with long hairs, especially on tibia and tarsus. Palpal femur at base often somewhat yellow. The black male palp is in striking contrast with the uniform yellow legs. Median apophysis large, directed to outside and curved over more than 90° at its extremity. Terminal apophysis well developed, directed slightly distally and pointed (Fig. 7).

Female: Total length: 3.90-4.55. Carapace: Length 2.08-2.40, width 1.52-1.78. Dark brown, with very broad, yellow median and lateral bands. Median light band very clear (cf. male) extending between posterior lateral eyes. Lateral bands with some variable black stripes near margin. Margin of carapace with a narrow

black stripe. Yellow lateral bands extend into cephalic region and meet on clypeus, which is also yellow. Eyes: Diameter PME 0.18-0.19, AME 0.08-0.09. Position as in male. Chelicerae: Completely yellow, sometimes with some black mottling. Sternum: Yellow. Legs: Clear yellow, sometimes with faint annulations especially on femora and tibiae. Measurements as in Table 1. Palp yellow. Abdomen: Dorsum with well defined pattern of yellow and brown chevrons mixed with black spots. Venter yellow. Vulva: Spermathecae turned anteriorly and sometimes slightly curved inwards (Figs. 4,9).

Material examined: SEYCHELLE ISLANDS: *Mahe*: 1♀, Mahé Sud, Anse Louis, 24 June 1972, in



Figs. 1-5: **1, 3, 5** *Bristowiella kartalensis* n. sp. **1** Habitus, holotype male, dorsal view; **3** Vulva, cleared, ventral view (female captured 16 August 1981); **5** Ditto (female captured 14 August 1981). **2, 4** *Bristowiella seychellensis* (Bristowe, 1973). **2** Habitus, male, dorsal view; **4** Vulva, cleared, ventral view.

mangrove, P. L. G. Benoit & J. J. Van Mol (MRAC); 1♂, 1♀, Mahé Sud, Anse à la Mouche, 1-15 July 1972, P. L. G. Benoit & J. J. Van Mol (MRAC); 1♂, Mahé Sud, Anse Bougainville, 26-31 August 1972, P. L. G. Benoit & J. J. Van Mol (MRAC); 4♂♂, Mahé Centre, Bon espoir, 300 m, 26 June 1972, P. L. G. Benoit & J. J. Van Mol (MRAC). *La Digue*: 1♀, 300 m, 28-31 July 1972, P. L. G. Benoit & J. J. Van Mol (MRAC). *Praslin*: 1♂, 3♀♀, 4 juv, Fond de l'Anse, 16-23 August 1972, P. L. G. Benoit & J. J. Van Mol (MRAC); 1♀, Grand Anse, 16-24 August 1972, P. L. G. Benoit & J. J. Van Mol (MRAC).

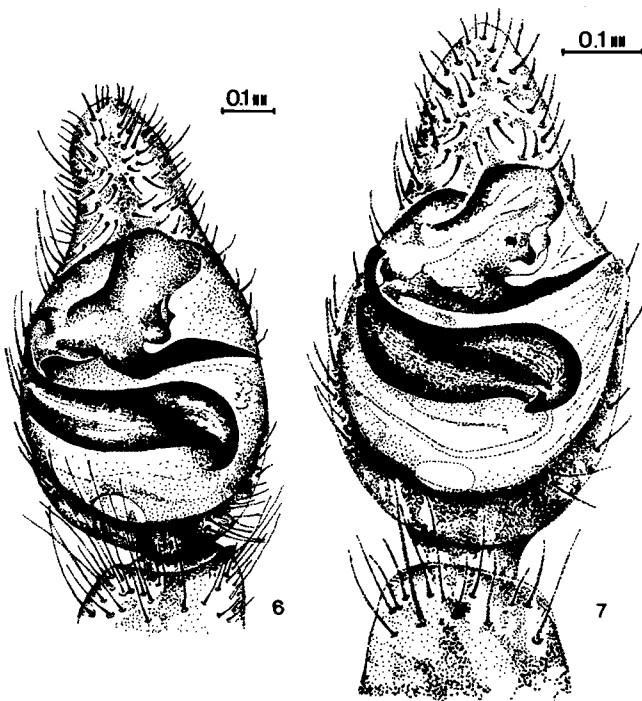
COMORO ISLANDS: *Grande Comore*: 4♂♂, 4♀♀, Nioumbadjou, 500 m, 2 August 1981, R. Jocqué (MRAC); 2♂♂, 13♀♀, La Grille, east of Maoueni, 800 m, 18-19 August 1981, R. Jocqué (MRAC); 2♀♀, between M'Vouni and Convalescence, July and August 1981, R. Jocqué (MRAC); 1♀, Malakoff (Hilimandsodé), 870 m, 3 August 1981, R. Jocqué (MRAC); 3♀♀, La Grille, south of Ivembeni, 825 m, 22 November 1983, R. Jocqué (MRAC); 2♂♂, 3♀♀, in front of "l'Île des Tortues", 31 October 1983, R. Jocqué (MRAC); 2♀♀, M'Vouni, 650 m, November and December 1983, R. Jocqué (MRAC). *Mohéli*: 6♂♂, 3♀♀, Miringoni, 5-13 November 1983, R. Jocqué (MRAC). *Anjouan*: 2♀♀, Limbi, Jomani, 250 m, 4 December 1983, R. Jocqué (MRAC).

Habitat: *B. seychellensis* lives in short grassy vegetation from sea level to about 1500 m.

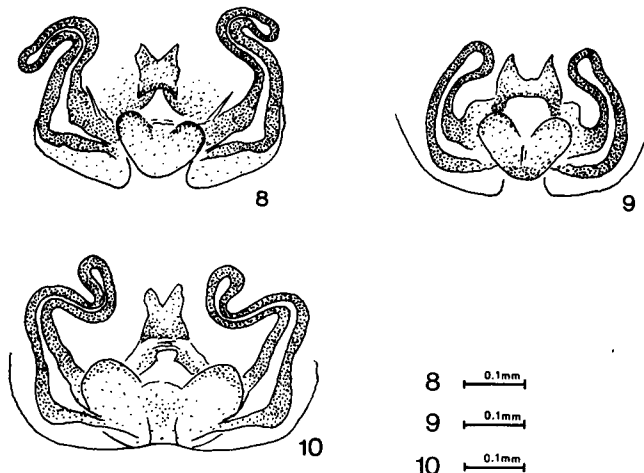
Bristowiella kartalensis n. sp. (Figs. 1, 3, 5, 6, 8, 10)

Diagnosis: See Table 2.

Male: Total length: 4.23 (holotype) and 4.03 (paratype). Carapace: Length 2.44 (holotype), 2.42 (paratype), width 1.70 (holotype), 1.64 (paratype).



Figs. 6-7: Male palps, ventral views. **6** *Bristowiella kartalensis* n. sp. **7** *Bristowiella seychellensis* (Bristowe).



Figs. 8-10: Vulvae, cleared, ventral views. **8** *Bristowiella kartalensis* n. sp. (female captured 16 August 1981); **10** *B. kartalensis* (female captured 14 August 1981); **9** *Bristowiella seychellensis* (Bristowe).

Dark brown, somewhat lighter in the middle but without clear median band. Lateral bands almost completely absent, at most consisting of a few yellow spots not extending towards clypeus. Especially sides of carapace with some metallic iridescent short hairs. Eyes: Diameter PME 0.24, and more than one diameter apart, diameter AME 0.09, and approximately one diameter apart. Chelicerae: Dark brown with some black mottling. Pale yellow at inner side. Sternum: Pale yellow, with some erect bristles. Legs: Dark brown with some pale annulations, especially on femora and tibiae. Leg I somewhat paler than other legs. Tibia I with three pairs of ventral spines, and a much shorter apical pair. Femora with iridescent hairs. Measurements as in Table 3. Abdomen: Dark brown, dorsum without clear pattern. At most with a somewhat paler median stripe and some obscure spots. Venter pale yellow with brown mottling at sides. Male palp: All segments brown and covered with black hairs. Hairs long on tibia and tarsus. Ventral hairs on palpal tibia and tarsus longer than dorsal ones. Palpal segments iridescent. Femur with three or four short, strong dorsal bristles apically. Median apophysis large, pointing laterally and curved over approximately 90° at its extremity. Terminal apophysis well developed, almost straight and pointed. Embolus thin and curved, hidden by median apophysis (Fig. 6).

Female: Total length: 4.35 (16 Aug.) and 5.15 (14 Aug.). Carapace: Length 2.50 (16 Aug.), 2.74 (14 Aug.), width 1.80 (16 Aug.), 2.10 (14 Aug.). Coloration as in male. One female a little paler, with traces of a lighter median band but still very obscure. Eyes: Diameter PME 0.26, AME 0.09. Position as in male. Chelicerae, sternum, legs and abdomen: As in male. Palp: Brown. Vulva: Spermathecae turn anteriorly, bending inwards and then suddenly curved to outside, almost S-shaped. This curve, which seems quite variable, is not visible without clearing the epigyne (Figs. 3, 5, 8, 10).

Material examined: Male holotype: Comoro islands,

Grande Comore, Kartala, between Koimbani and Bahani, 16 August 1981, between blocks of lava,

Holotype male						
	Fe	Pa	Ti	Mt	Ta	Total
I	1.60	0.78	1.42	1.40	0.88	6.08
II	1.54	0.76	1.32	1.40	0.84	5.86
III	1.50	0.70	1.26	1.52	0.78	5.76
IV	2.22	0.82	1.74	2.50	1.12	8.40

Paratype male						
	Fe	Pa	Ti	Mt	Ta	Total
I	1.60	0.80	1.44	1.42	0.84	6.10
II	1.58	0.80	1.30	1.40	0.82	5.90
III	1.46	0.60	1.20	1.44	0.74	5.44
IV	2.12	0.82	1.80	2.46	1.12	8.32

Paratype female (captured 16 August 1981, with holotype)						
	Fe	Pa	Ti	Mt	Ta	Total
I	1.74	0.80	1.50	1.30	0.90	6.24
II	1.74	0.80	1.40	1.30	0.82	6.06
III	1.60	0.64	1.28	1.46	0.90	5.88
IV	2.20	0.82	1.84	2.58	1.14	8.58

Paratype female (captured 14 August 1981)						
	Fe	Pa	Ti	Mt	Ta	Total
I	2.06	0.90	1.64	1.62	0.94	7.16
II	2.02	0.92	1.60	1.64	0.96	7.14
III	1.94	0.84	1.56	1.90	0.90	7.14
IV	2.70	1.00	2.26	3.22	1.40	10.58

Table 3: Leg measurements (mm) of *Bristowiella kartalensis* n. sp.

R. Jocqué (MRAC). Paratypes: 1♂, 1♀ together with holotype. 1♀, Comoro islands, Grande Comore, Kartala, 2300 m, 14 August 1981, among blocks of lava, R. Jocqué (MRAC).

Etymology: The species is named after its type locality, the Kartala volcano.

Habitat: *B. kartalensis* appears to be restricted to recent lava flows with sparse vegetation from about 600 m upwards.

Acknowledgements

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References

- BRISTOWE, W. S. 1973: A new lycosid spider in the Seychelles and an endemic eumenid wasp which stores spiders. *Entomologist* **106**: 220-222.
- JOCQUÉ, R. 1985: Linyphiidae (Araneae) from the Comoro Islands. *Revue Zool. afr.* **99**: 197-230.
- REIMOSER, E. 1934: The spiders of Krakatau. *Proc. zool. Soc. Lond.* **1934**(1): 13-18.
- SAARISTO, M. I. 1978: Spiders (Arachnida, Araneae) from the Seychelle Islands, with notes on taxonomy. *Ann. Zool. Fenn.* **15**: 99-126.
- SAARISTO, M. I. 1980: *Bristowiella* new name for *Bristowia* Saaristo, 1978 (Araneae: Lycosidae). *Bull. Br. arachnol. Soc.* **5**(3): 116.