

Biodiversity and ecology of soil and canopy spiders in Central African rainforests

Congo river 2010 expedition

By

J.L. Juakaly*

P. Baelo*

D. De Bakker^o

R. Jocqué^o

* Université de Kisangani

^o Royal Museum for Central Africa

Introduction 2

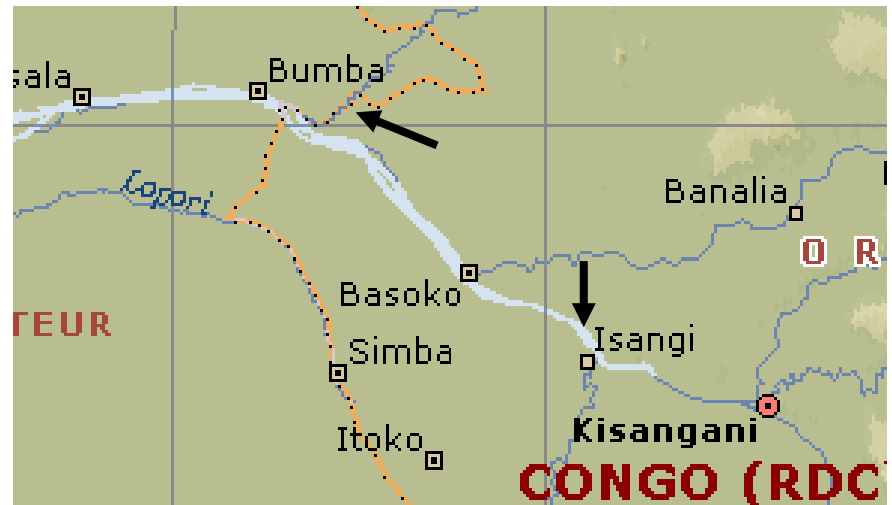
- Tropical rain forest: high diversity but threatened
- Very little is known about Canopy spiders, slightly more about soil dwelling spiders
- The objective of this work is the study of their biodiversity and ecology

Introduction 3

- In this paper:
 - First results on canopy spiders from Congo River Basin
(comparable samples from miombo woodland in Katanga are available)
 - Results on shrub and soil dwelling spiders caught during expedition 2010

Material 1

- Material was collected along Congo River; 2009 (June) and 2010 expedition (May and June)
- The main sites sampled are given on these maps



Material 2

- Here we present the results for two sites: Yaekela and Kona
- In total, 1774 spiders were caught : 914 in the shrub layer, and 860 in the canopy
- Specimens from other sites not yet identified

Method 1

- Fogging method (Stork, 1997):
strictly repeated >
samples perfectly
comparable



Method 2

- Headlamp, beating, hand sorting and sieving were operated for shrub layer and soil dwelling spiders



Results 1

Table 1. Shrub layer and soil spiders

- Lesson: Ctenidae (21,01%) and Salticidae (18,60%) are dominant in these layers
- Ctenidae: large spiders with reflecting eyes > density estimation feasible

	Family	Total	Freq
1	Araneidae	12	1,31
2	Corinnidae	14	1,53
3	Ctenidae	192	21,01
4	Deinopidae	7	0,77
5	Gnaphosidae	3	0,33
6	Idiopidae	1	0,11
7	Linyphiidae	2	0,22
8	Lycosidae	91	9,96
9	Microstigmatidae	4	0,44
10	Mimetidae	5	0,55
11	Miturgidae	14	1,53
12	Oonopidae	14	1,53
13	Oxyopidae	11	1,20
14	Palpimanidae	32	3,50
15	Pisauridae	21	2,30
16	Salticidae	170	18,60
17	Scytodidae	32	3,50
18	Selenopidae	1	0,11
19	Sparassidae	29	3,17
20	Tetragnathidae	19	2,08
21	Thomisidae	44	4,81
22	Zodariidae	59	6,46
23	undeterm.	137	14,99
		914	100,00

12	Palpimanidae						4		1	5	0,6
13	Philodromidae			1	0					1	0,1
14	Pholcidae		1	1	3	8	2	1	3	19	2,2
15	Salticidae	11	1	2	0	3	2	3	3	25	2,9
16	Scytodidae	4		3	3	2	4	1	1	18	2,1
17	Uloboridae						1			1	0,1
18	Tetragnathidae	9	1	12	1	15	15	10	7	70	8,1
19	Theridiidae	78	42	48	11	30	84	37	41	371	43,1
20	Theridiosomatidae	10		12	4	7	14		3	50	5,8
21	Thomisidae	3	5	12	2	4	17	5	8	56	6,5
22	Zodariidae	10	1				1			12	1,4
	Adults	161	63	111	34	107	190	96	98	860	100,0

Theridiidae and Oonopidae are the most dominant, Gnaphosidae and Hersiliidae are rare

Discussion and conclusion

- The canopy fauna is much more diverse than that of the lower layers (up to three times)
- Canopy spiders are smaller in size
- As for soil spiders and many other animal groups (Brosset 1985; Dudu 1991; Upoki 2001; Juakaly 2007), the fauna is dominated by one family, often represented by only one or two species
- Analysis is still in a preliminary phase
- It would be interesting to collect spiders along the lower Congo River as initially planned >> evaluation of endimicity in different subfaunas

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