

## SHORT COMMUNICATION

## How many Arachnida and Myriapoda are there world-wide and in Amazonia?

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### Abstract

Numbers of described families, genera, and species (as well as estimations of existing species) are given for all taxa which represent the Arachnida and Myriapoda world-wide and in Amazonia.

**Keywords:** species numbers, species estimates, mega-diverse taxa, hyper-diverse taxa, biodiversity, Amazon.

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Almost 20 years ago, a 'synopsis and classification of living organisms' (Parker, 1982) on this planet was attempted, in which an estimate was made of the number of species known to occur world-wide for each taxon. Subsequently, several catalogues have been produced for various taxa within the Arachnida and Myriapoda (Harvey, 1990; Fet, 1999; Hoffman, 1999; Platnick, 1989, 1993; Reddell & Cokendolpher, 1995). Data on the arachnid and myriapod families, genera and species which presently exist world-wide and in the 'bioregion' Amazonia (Dinerstein et al., 1995) can now be presented for the very first time (Table 1). Taxa numbers are based on thorough literature studies, which have been updated by leading taxonomists.

In Arachnida, about 92,500 presently described species are included in more than 8,869 genera, and 566 families. In Myriapoda, about 15,100 species, 2,167 genera, and 158 families are known. Since 1982, the increase in world-wide described species was 22% in Arachnida (about 1,200 species/year) and 13% in Myriapoda (about 110 species/year). In some less diverse taxa, species numbers have doubled (Amblypygi, Geophilomorpha) or even tripled (Schizomida). In hyper- (or mega-) diverse taxa, the increase was between 5% (Araneae) and 33% (Acari). However, taxonomical revisions have also resulted in a decrease in recognized taxa as well, mostly due to synonymy (Table 1: Scolopendromorpha; Schi-

leyko & Pavlinov, 1997; Schileyko, unpubl.). Opiliones and Acari still need taxonomic work and revision. Data on how many species might exist world-wide vary considerably, due to different approaches of estimation (see Hammond, 1992; Platnick, 1999).

About 2% of the worlds described species in Arachnida and 3% of Myriapoda live in the bioregion Amazonia. However, Ricinulei represent 28%, Schizomida and Scolopendromorpha 9%, and Pauro-poda more than 7% of species known world-wide in their respective taxa. At least 8% of the species estimated to exist world-wide in Myriapoda are assumed to live in Amazonia. Almost one-fourth of the families presently known in the Arachnida and one-fifth in the Myriapoda are represented in Amazonia. These data represent a valuable base for future decisions on the conservation or sustainable use of Amazonian ecosystems (Jaenicke & Flynn, 1992; Kremen et al., 1993; BSP, 1995; Dinerstein et al., 1995). Similar data should now be elaborated for insects, in particular the hyper-diverse Coleoptera, Hymenoptera, Lepidoptera and Hemiptera (Parker, 1982). Neotropical beetles are estimated to possess high biodiversities in restricted areas, particularly in tree canopies (Erwin, 1983, 1988), and a total of 99 ant species which occurred in the crown of a single tree in Central Amazonia (Adis et al., 1998) suggest that such insect groups are hugely diverse.

TABLE 1. Families, genera, and species of taxa representing the Arachnida and Myriapoda in the world and in Amazonia (until 1999) as well as estimations of existing species (fossil taxa not included).

		Families	Genera	Species described	Species estimated
<b>ARACHNIDA</b>	World:	> 566	> 8,869	> 92,529 [72,158]	
	Amazonia:	> 136	> 480	> 1,592	
Araneae	World:	106	( 3,200	( 37,000 [35,000]	{76,000-170,000}
	Amazonia:	> 65	> 300	> 1,000	{4,000-8,000}
Palpigradi	World:	2 [1]	6 [5]	80 [60]	{100}
	Amazonia:	1	1	1	
Uropygi (Thelyphonida)	World:	2 [1]	16	101 [85]	
	Amazonia:	2	2	3	{10}
Amblypygi	World:	5 [3]	20	126 [70]	
	Amazonia:	1	2	11	
Schizomida:	World:	2	31	195 (219) [80]	
	Amazonia:	1	3	10	
Solifugae	World:	12	153	1,065 [900]	{1,115}
	Amazonia:	1	1	1 (2)	
Pseudoscorpiones	World:	24 [23]	430	3,100 [2,000]	{3,500-5,000}
	Amazonia:	12	31	75	{> 150}
Ricinulei	World:	1	3 [2]	53 [33]	{85}
	Amazonia:	1	1	15	{25}
Opiliones	World:	44	> 1,554	> 4,559 [4,500-5,000]	
	Amazonia:	13	75	160	
– Cyphophthalmi	World:	6	28 [15]	109 [30]	
	Amazonia:	3	4	4	
– Palpatores	World:	15 [12]	> 250	1,000-2,000	
	Amazonia:	1	5	20	
– Laniatores	World:	23 [15]	1,276	3,460	
	Amazonia:	9	66	136	
Scorpiones	World:	18-20 [8]	156 [115]	1,250-1,500 [1,200]	{6,000-7,500}
	Amazonia:	4	12-14	68-111	{200}
Acari	World:	350-422	3,300-4,000	45,000 [30,000]	{0.5-1 million}
	Amazonia:	35	50	150-300	{20,000-250,000}
<b>MYRIAPODA</b>	World:	158 (159)	2,167	> 15,096	{59,400-92,500}
	Amazonia:	28 (29)	> 94	> 423	{5,600-7,600}
Chilopoda	World:	20 (21)	325	> 3,196	{6,850-6,950}
	Amazonia:	8 (9)	26	> 115	{400}
– Scutigermorpha	World:	1 [2]	16 [16]	> 80	{100-150}
	Amazonia:	1	1	2	{5}
– Lithobiomorpha	World:	2 [2]	95 [97]	1,500 [1,468]	{2,000}
	Amazonia:	1	1	2	{5}
– Craterostigmomorpha	World:	1	1	1 [1]	{? 5}
	Amazonia:	0	0	0	{0}
– Scolopendromorpha	World:	3 [2]	33 (32) [43]	515-616 [500]	{700-800}
	Amazonia:	2	11	52	{90}
– Geophilomorpha	World:	13 (14) [12]	180 [174]	1,100 [> 566]	{4,000}
	Amazonia:	4 (5)	13	60	{300}
Diplopoda	World:	131	1,800	11,000 [10,000]	{50,000-80,000}
	Amazonia:	16	55-60	250	{5,000-7,000}
Paupoda	World:	5 [2]	29 [5]	700 [500]	{2,000-5,000}
	Amazonia:	2	8	52	{> 200}
Symphyla	World:	2	13 [14]	200 [160]	{? 500}
	Amazonia:	2	4	5	{10-20}

( ) = including forthcoming descriptions and revisions [ ] = former numbers in Parker (1982)

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