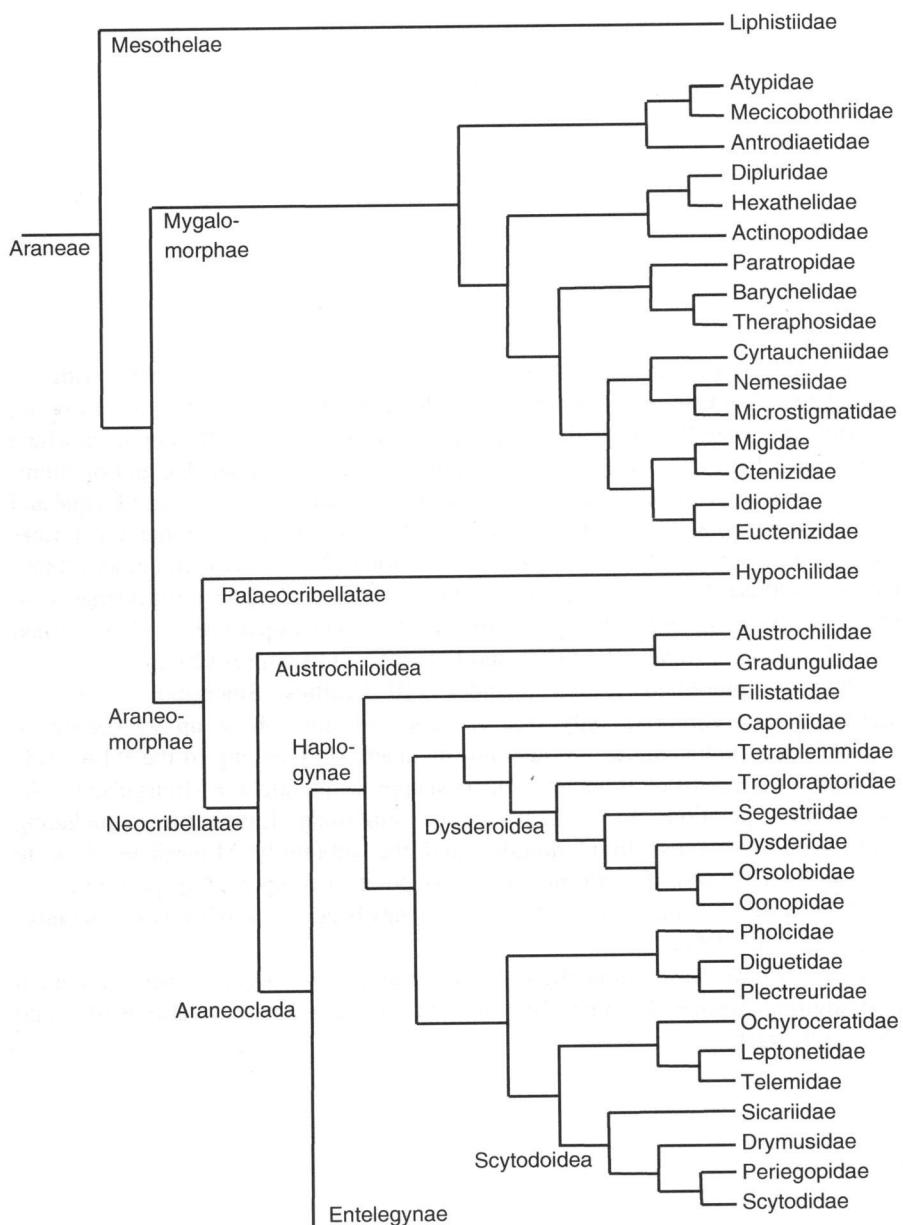


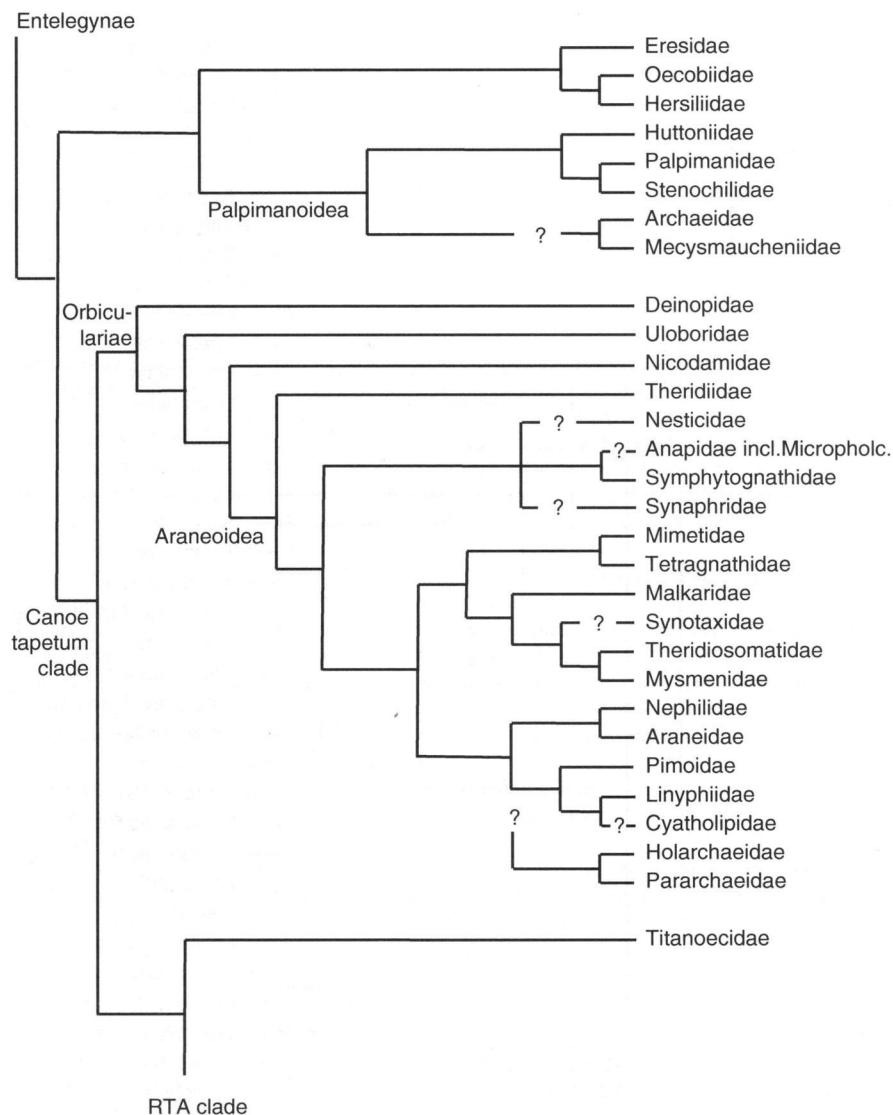
Appendix. Spider Phylogeny

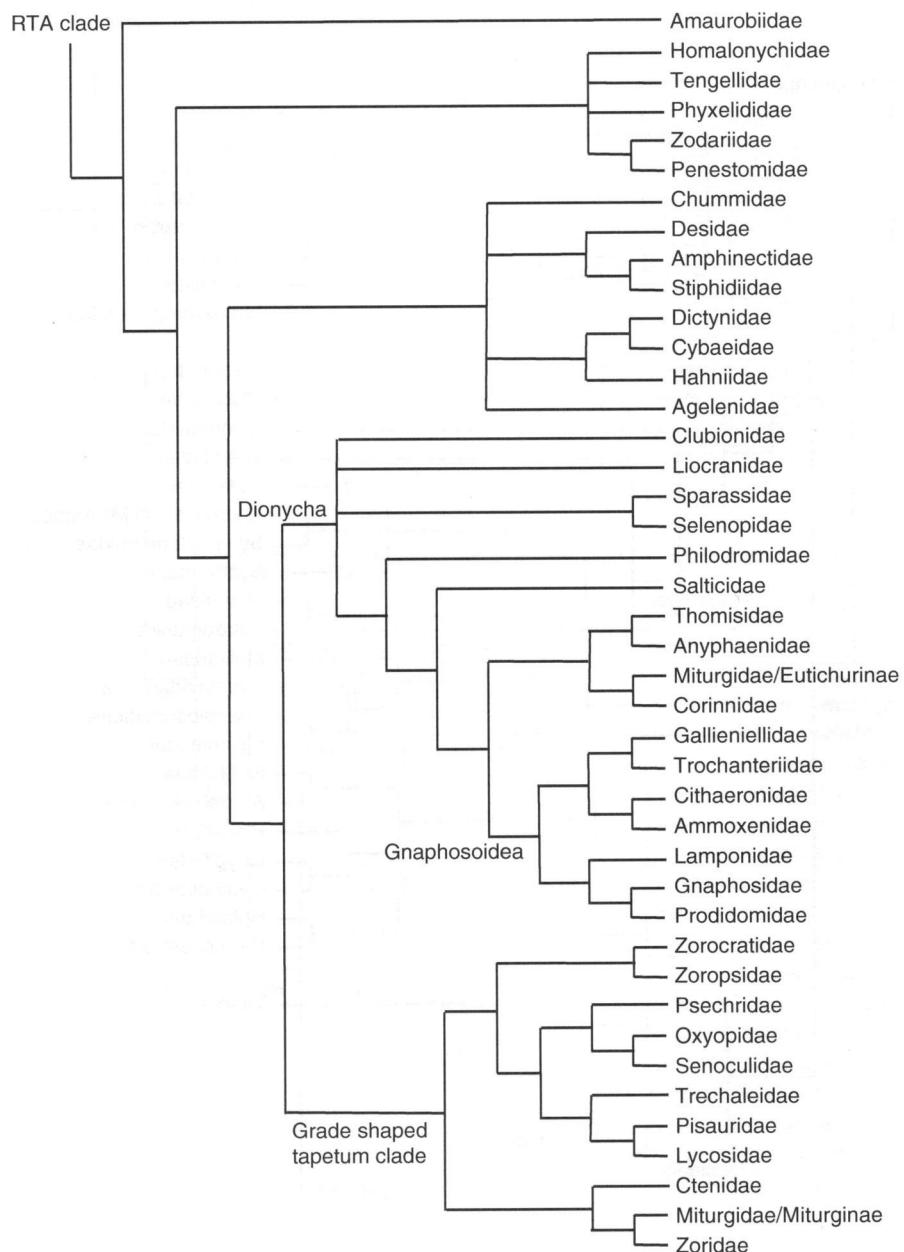
Since many aspects mentioned in this book are better understandable within a phylogenetic context, a phylogenetic cladogram of spiders is given here. However, currently no generally accepted system is available and therefore the approach which is presented here reflects the best compromise of current knowledge and opinions. This system bases on the cladograms provided by Coddington (2005) and Jocqué and Dippenaar-Schoeman (2006) and includes key results from important further publications such as Silva (2003), Hedin and Bond (2006), Benjamin et al. (2008), Rix et al. (2008), Alvarez-Padilla et al. (2009), Arnedo et al. (2009), Blackledge et al. (2009), Miller et al. (2009, 2010), Dimitrov et al. (2011), Lopardo et al. (2011), Bond et al. (2012), Griswold et al. (2012), and Labarque and Ramirez (2012).

The here presented system includes 110 families. Sinopimoidae are not included; they comprise only one species and may show up to belong to Linyphiidae. Cycloctenidae are also not included; they belong to the RTA clade but their further position is unclear. The best approach to include Miturgidae results in different positions for two parts: the subfamily Eutichurinae (including *Cheiracanthium*) close to Corinnidae and the subfamily Miturginae close to Zoridae (Silva 2003). If confirmed, this may point to an upcoming splitting of the family. Micropholcommatidae (Micropholc.) may become a subfamily of Anapidae (Lopardo et al. 2011).

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References

- Alvarez-Padilla F, Dimitrov D, Giribet G, Hormiga G (2009) Phylogenetic relationship of the spider family Tetragnathidae (Araneae, Araneoidea) based on morphological and DNA sequence data. *Cladistics* 25:109–146
- Arnedo MA, Hormiga G, Scharff N (2009) Higher-level phylogenies of linyphiid spiders (Araneae, Linyphiidae) based on morphological and molecular evidence. *Cladistics* 25:231–262
- Benjamin SP, Dimitrov D, Gillespie RG, Hormiga G (2008) Family ties: molecular phylogeny of crab spiders (Araneae: Thomisidae). *Cladistics* 24:708–722
- Blackledge TA, Scharff N, Coddington JA, Szűts T, Wenzel JW, Hayashi CY, Agnarsson I (2009) Reconstructing web evolution and spider diversification in the molecular era. *Proc Natl Acad Sci USA* 106:5229–5234
- Bond JE, Hendrixson BE, Hamilton CA, Hedin M (2012) A reconsideration of the classification of the spider infraorder Mygalomorphae (Arachnida: Araneae) based on three nuclear genes and morphology. *PLoS One* 7:e38753
- Coddington JA (2005) Phylogeny and classification of spiders. In: Ubick D, Paquin P, Cushing PE, Roth V (eds) *Spiders of North America: an identification manual*. American Arachnological Society, Worcester
- Dimitrov D, Lopardo L, Giribet G, Arnedo MA, Alvarez-Padilla F, Hormiga G (2011) Tangled in a sparse spider web: single origin of orb weavers and their spinning work unravelled by denser taxonomic sampling. *Proc R Soc B* 279:1341–1350. doi:10.1098/rspb.2011.2011
- Griswold CE, Audisio T, Ledford JM (2012) An extraordinary new family of spiders from caves in the Pacific Northwest (Araneae, Trogloraptoridae, new family). *ZooKeys* 215:77–102
- Hedin M, Bond JE (2006) Molecular phylogenetics of the spider infraorder Mygalomorphae using nuclear rRNA genes (18S and 28S): conflict and agreement with the current system of classification. *Mol Phylogen Evol* 41:454–471
- Jocqué R, Dippenaar-Schoeman AS (2006) Spider families of the world. Royal Museum for Central Africa, Tervuren
- Labarque FM, Ramirez MJ (2012) The placement of the spider genus *Periegops* and the phylogeny of Scytodoidea (Araneae: Araneomorphae). *Zootaxa* 3312:1–44
- Lopardo L, Giribet G, Hormiga G (2011) Morphology of the rescue: molecular data and the signal of morphological characters in combined phylogenetic analyses—a case study from the mysmenid spiders (Araneae, Mysmenidae), with comments on the evolution of web architecture. *Cladistics* 27:278–330
- Miller JA, Griswold CE, Yin CM (2009) The symphytognathoid spiders of the Gaoligongshan, Yunnan, China (Araneae, Araneoidea): systematics and diversity of micro-weavers. *ZooKeys* 11:9–195
- Miller JA, Carmichael A, Ramirez MJ, Spagna JC, Haddad CR, Rezac M, Johannesen J, Kral J, Wang X-P, Griswold CE (2010) Phylogeny of entelegyne spiders: affinities of the family Penestomidae (NEW RANK), generic phylogeny of Eresidae, and asymmetric rates of change in spinning organ evolution (Araneae, Araneoidea, Entelegynae). *Mol Phylogen Evol* 55:786–804
- Rix MG, Harvey MS, Roberst D (2008) Molecular phylogenetics of the spider family Micropholcommatidae (Arachnida: Araneae) using nuclear tRNA genes (18S and 28S). *Mol Phylogen Evol* 46:1031–1048
- Silva D (2003) Higher-level relationships of the spider family Ctenidae (Araneae: Ctenoidea). *Bull Am Mus Nat Hist* 274:1–86