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Taxonomic review of the spider genus *Thanatus* (Philodromidae, Araneae) of Hungary.

The spider genus *Thanatus* is one of the most complicated groups of the family Philodromidae. All of them are epigeic animals. The following six species of the genus can be found in Hungary: *T. arenarius* Thorell, 1872, *T. atratus* Simon, 1875, *T. formicinus* (Clerck, 1757), *T. pictus* L. Koch, 1881, *T. sabulosus* (Menge, 1875), *T. striatus* C. L. Koch, 1845. The occurrence of two further species (*T. coloradensis* Keyserling, 1880, *T. vulgaris* Simon, 1870) is not proved, but they might occur in Hungary, so they are also included in the present study. Description, illustrations and distributional maps for each species are provided. The examination is based on the collections of the Natural History Museum of Hungary, Budapest, as well several museums and arachnologists from Hungary and Europe, and our own collections. *Th. atratus* was one of the subspecies of *T. vulgaris* until 1983, when it was raised to the level of independent species. After the examination of all specimens available to us, it seems that probably only *T. atratus* occurs in Hungary. *Apolophanes babaly* Logunov, 1996, is a junior synonym.

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The linyphiid spiders of the Himalaya: composition, chorology, faunogenesis (Aranei, Linyphiidae).

At present, about 130 species of linyphiid spiders have been registered in the Himalaya. Nepal is certainly the area best explored in this respect (78 species), followed by Karakorum (30 species) and Kashmir (8 species). A check-list of the Himalayan linyphiids is presented, with species distributions between subregions and altitudinal belts. Species from the "*Leptyphantus*" complex and from the genus *Oedothorax* Bertkau appear dominant, amounting to 40% of the regional fauna. Taxonomic and chorological analyses are proposed as well as zoogeographical relations and presumed origins of the Himalayan linyphiid fauna.

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Geographical differentiation of karyotypes in the *Nelima genufusca* group (Opiliones) and analyses of chromosomal hybrid zones in *Nelima nigricoxa*.

The *Nelima genufusca* group (Phalangiidae: Leiobuninae) is a closely-related group of harvestmen widely distributed in Japan and consists of two described [*N. nigricoxa* Sato & Suzuki and *N. genufusca* (Karsch)] and one (or more) undescribed species. The group shows extensive geographical diversity in chromosome number with ranges: $2n=16-22$ in *N. nigricoxa* and $2n=18-22$ in *N. genufusca*. In each species chromosomal hybrid zones were found. Of these, we analyzed two hybrid zones ($2n=20/18a$ and $18a/16$) of *N. nigricoxa* in detail. The zones are located in the area around Mt. Daisen and Mt. Hiruzen, Tottori, western Japan. The width of the $20/18a$ zone is approximately 0.5-3km and that of $18a/16$ zone ca. 3km. In both zones, frequency of heterozygous karyotypes was significantly lower than the expected from the Hardy-Weinberg equilibrium. No degeneration of spermatogenesis in heterozygous males ($2n=19$) was observed in the $20/18a$ hybrid zone surveyed. Analysis of meiosis in the heterozygotes showed low (about 2-3%) malsegregation rate. Mean dispersal distance estimated by preliminary survey with a mark-recapture technique was 29m (SD=20.3). Using simple diffusion model we calculated that minimal age for 0.5 km zone is a little more than 200 years and that for 3km zone is about 7,700 years. The estimations roughly agree with the volcanic history of the area. A phylogeny within the *genufusca* group depicted by using sequence data of ca. 1kbp DNA fragments of a mitochondrial gene (COI: cytochrome oxidase I) demonstrated those chromosome races have arisen without a profound genetic differentiation.

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A comparative study of spider and insect metabolic rates.

Anderson (1970, 1994, 1996), and others have examined the metabolic rate of spiders and proposed that spiders have an adaptation for lowering resting metabolic rate during starvation. Markevich's (1987) results indicated that these lowered rates are a result of starvation rather than an innate adaptive mechanism for surviving periods of low prey availability. Wise (1993) suggested that the question may be best answered by comparing the resting metabolic rate of spiders with other predaceous arthropods. Therefore, we have compared the resting metabolic rate of fed and starved spiders and insects with similar predatory habits. Specifically salticid, sparassid and thomisid spiders were compared to phymatid (Hemiptera) and cicindellid (Coleoptera) insects. All of these arthropods are found in similar habitats and hunt insect prey with similar strategies. Each arthropod was placed into a 250 ml Schott bottle and oxygen consumption/CO₂ production was measured using a Columbus Instruments OxyMax respirometer. Our results showed that the spiders: 1) lived longer without food than the insects, 2) had a significantly lower average metabolism over the entire five day experimental period, and 3) did not vary their metabolic rate over the five day time period. These results suggest that the spiders do have a unique metabolic adaptation which allows them to survive periods of low prey availability.