

fractionation do not show particular deviations except some petty differences in the weight ratio of the protein components.

Rather significant differences have been established in the venom of *V. berus* between the forms of the snakes from Brest, Pskov and Kharkov provinces. The first two samples of the venom were relatively similar in content, although not identical, whereas the samples from Kharkov province were significantly different.

Key words: venoms, proteins, viperid snakes, *Vipera ursinii*, *Vipera berus*

SEXUAL INTERACTIONS IN TRIADIC ENCOUNTERS INVOLVING PAEDOMORPHIC AND METAMORPHIC ALPINE NEWTS *Triturus alpestris* (P)

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Sexual selection theories suppose that morphologically-contrasting alternative morphs may exhibit different mating tactics. Facultative paedomorphosis in newts is a suitable process to explore this question because it implies the coexistence of two morphs differing by the presence of gills and epigamic traits. The aim of this study was to find out whether paedomorphs (i.e. adult retaining larval traits) and metamorphs use similar behavioural patterns to attract mates in the presence of a rival and whether there are differences in sexual activity and success between alternative morphs. Sexual interactions in triadic encounters were staged and analyzed in a standardized experimental design. The two kinds of males did not differ in terms of sexual activity, spermatophore deposition or female responsiveness. Both rival paedomorphic and metamorphic males exhibited sexual interference, but in most encounters, intruders just disturbed the courting pair. Sperm transfer success was lower in triadic encounters than in dyadic encounters. These results illustrate that inter-morph breeding also occurs in the presence of competitors, but that the success rate of the newts is considerably decreased in such competitive situations. Moreover, newts do not use alternative reproductive tactics depending of their status (i.e. paedomorph or metamorph).

Key words: facultative paedomorphosis, alternative mating tactics, sexual selection, mate choice, *Triturus alpestris*

FEEDING HABITS IN A DIMORPHIC METAPOPOPULATION OF THE TIGER SALAMANDER *Ambystoma tigrinum nebulosum* (O)

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Facultative paedomorphosis in salamanders refers to the presence of two ontogenetic pathways in natural populations – paedomorphosis, in which individuals retain gills at the adult stage, and metamorphosis, in which larvae metamorphose. The Mexican Cut Nature Preserve (Colorado, USA) is composed of numerous ponds which are inhabited by paedomorphic and metamorphic tiger salamanders. While paedomorphs usually stay in the same aquatic habitat all their life, metamorphs may leave water and colonize other ponds. The aim of this study was to determine the feeding habits of the two morphs from this metapopulation. To this end, adults were caught by dip-netting, stomach-flushed, measured and marked. Paedomorphs were only found in permanent waters. Metamorphs were present in all habitats, but particularly in the temporary ponds. Diet differed between ponds – reflecting their invertebrate composition – with a preponderance of either microcrustaceans, fairy shrimp or insect larvae. In ponds inhabited by the two morphs, paedomorphs consumed more prey items. Because dry mass and energy

content varied between invertebrates, feeding on some of them, such as fairy shrimp in the temporary ponds where they are abundant, gave high energy intake to the predators. Because such resources are only available to the dispersive morph, metamorphs are at the advantage in being able to avoid competition with paedomorphs in permanent ponds and in using transient resources from the productive temporary waters.

Key words: facultative paedomorphosis, metapopulation, optimal foraging, *Ambystoma tigrinum*

***Leptodactylus ocellatus*: ONE OR MORE SPECIES? (O)**

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Leptodactylus ocellatus Linnaeus, 1758, has an extensive distribution in South America. This taxon inhabits a variety of habitats throughout its range east of the Andes and from northern South America to Argentina, with the potential possibility of local differentiation and speciation. *Leptodactylus chaquensis*, the sibling species of *L. ocellatus*, has a more restricted distribution occupying northern Argentina, eastern Bolivia, Paraguay, northern Uruguay, and Mato Grosso do Sul in Brazil. These two species are valid taxa but there are only slight external morphological differences to separate them.

Fieldwork indicates that morphologically similar populations of *L. ocellatus* differ in types of parental care, suggesting that the taxon represents more than one species. In order to reevaluate how many lineages may be present, we assessed the genetic diversity of *L. ocellatus* using 12s mitochondrial ribosomal DNA sequences. Samples were obtained from populations in Argentina, Uruguay, and throughout its range in Brazil (50 samples). We obtained approximately 400 base pairs for each individual sample, the sequences were aligned using Clustal X (about 367 bp unambiguously aligned) and analyzed using PAUP. Sequence data was also collected for *L. chaquensis*. The sequence data indicate that there is variable and considerable genetic differentiation among these samples and that at least two more taxa are currently placed under the name *L. ocellatus*.

Key words: *Leptodactylus ocellatus*, systematics, genetic diversity

MALE - MALE AGONISTIC INTERACTIONS IN CHILEAN LIZARDS *Liolaemus lemniscatus* (TROPIDURIDAE) (P)

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We studied the agonistic behaviours of *Liolaemus lemniscatus* during male-male contests and investigated the effects on the contests' outcome of asymmetries in residence condition, body size, and the intensity of agonistic displays. We staged encounters by introducing a male (intruder) in the terrarium of another male (resident). A week later, we staged new encounters with the same lizards reversing the resident-intruder condition and reassigning them to different pairs. We filmed all the encounters for detailed analyses of head-bobbing patterns. During the encounters, we recorded the number of head-bobs, tongue-flicks, and bites. The contests were interrupted after 15 min and we determined the winner of the interaction from the behaviour of both contestants during the last 5 min of the encounter. Losers usually exhibited avoidance or submissive behaviours (running away, flattened body, immobility). Resident status was not a good predictor of the outcome of a contest, as close to 50% of the encounters were won by intruders. There was a strong correlation between the number of tongue-flicks and the