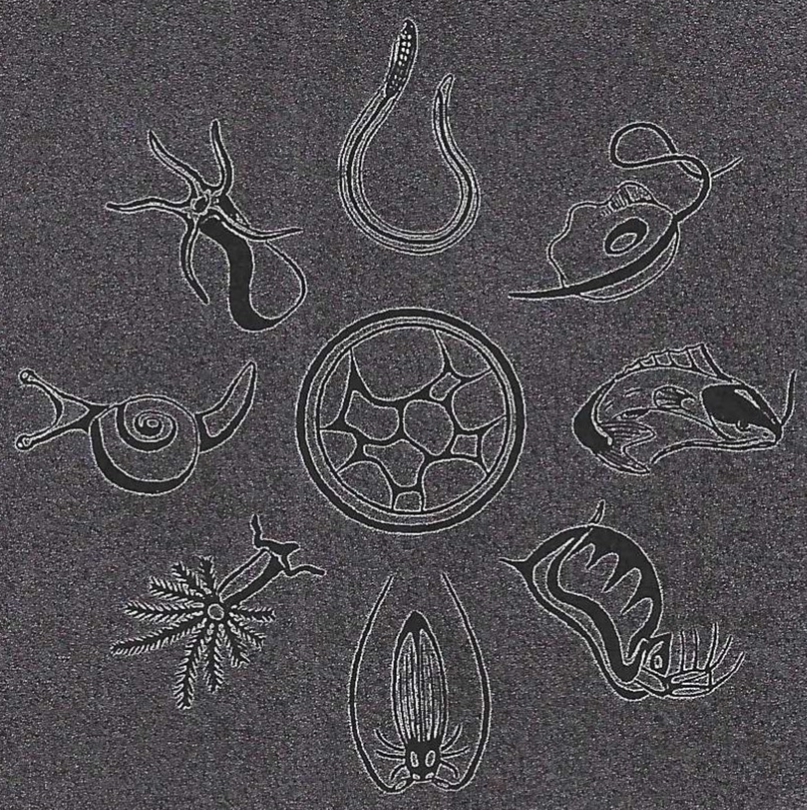
5th Benelux Congress of Zoology

Phylogeny and Biodiversity



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ABSTRACT BOOK

al and methods, observations (or description of taxa) or results, discussion and conclusion, eventual

Morphological and behavioural diversity in the Carapini (Carapidae, Pisces) : phylogenetic analysis

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The fishes of the *Carapus* and *Encheliophis* genera (Carapidae, Ophildiformes) have the ability to enter and stay in Holothuroids. The comparative study of their cephalic morphology with their stomach contents has shown a carnivorous diet. However some fishes have a large mouth opening, robust jaws and a developed musculature which could be in relation with a diet compound of tough preys (fishes, crustaceans). Theses fishes could have a commensal way of life and they could use their host principally as a shelter. Other fishes, considered as parasites, have on the other hand a limited mouth opening, a less developed denture and a diet compound of soft prey (holothurian tissues). In the current phylogenetic arrangement, the fishes of the *Carapus* genus are commensal when those of the *Encheliophis* genus regroup parasitic and commensal species. We realised a phylogenetic study based on 61 characters (morphology, diet, ethology). She has shown that three species of the *Encheliophis* genus (*E. Boraborensis*, *E. homei* and *E. dubius*) should be replaced in the *Carapus* genus. In this way, the latter could regroup the commensal species whereas the *Encheliophis* genus could have specialise in a parasitic way of life and their cephalic structures should have adapt to this new ecological niche.

The use of Red Data Books in nature conservation: the case study of Dolichopodidae (Diptera) of Flanders

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Very recently, the misuse of Red Data Books (RDB) and RDB as such have been severely critized as if it directs nature conservation towards single species protection rather than the conservation of entire communities or biodiversity as a whole. RDB as a concept, however, stands firm as it is the only way to achieve reliable estimates of the rarity and vulnerability of biota. In fact, the assignment of individual species to RDB categories is only the final visible result of elaborate data collecting and processing. A proper documentation on the ecology of the rarest and most vulnerable species is another important aspect.

In the frame of an IN-project, during 1997-1998 a RDB of Dolichopodidae (Diptera) of Flanders was compiled on the basis of all distribution and ecological records on this dipteran family collected in Belgium since 1850. Of the 295 species ever discovered in Belgium, about 88% (n=260) has been recorded from Flanders. Since 1981, 22 species have become extinct while another 40 are considered vulnerable to critically endangered. Almost 68% of saltmarsh dolichopodid faunas can be called threatened which makes this habitat the most vulnerable in Flanders. Other valuable habitats are reedmarshes and marshlands in general, riparian habitats and to a lesser extend, coastal dunes and humid woodlands and heathlands.

Especially in site quality assessment, RDB prove to be an indispensable data source. By using an index that both incorporates species richness, diversity, rarity and vulnerability, entire dolichopodid and other invertebrate communities are easily compared in respect of their conservation value.

Chemoreceptive predator recognition in three Lacertid species

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Lacertids are higly chemoreceptive lizards. They use chemoreception for a wide rande of behaviours, including predator recognition. We studied the chemoreceptive predator recognition in three species, *Podarcis sicula*, *Podarcis tiliguerta* and *Lacerta bedriagae*. Two of these species, namely *P. sicula* and *P. tiliguerta*, are syntopic with *Coluber viridiflavus*; *L. bedriagae* is allotopic with this snake. *C. viridiflavus* is a predator of lizards. We also used chemicals of a non saurophagous snake, *Natrix maura* as a control scent. First, we tested the ability of the lizards to identify the scent of *C. viridiflavus* as that of a predator. Our results show that all three species of lizards identify this scent (higher tongue-flick rate) as being dangerous. They also show that while *P. sicula* and *P. tiliguerta* can distinguish between the scent of *C. viridiflavus* and of *N. maura*, *L. bedriagae* apparently does not have this ability. In a second part we also investigated the effect of the scent of *C. viridiflavus* on the lizards' microhabitatchoice and foraging behaviour. The results of these tests show that the species have different preferences concerning microhabitats, that this preferences change when confronted with the scent of *C. viridiflavus* and that they actively avoid substrates labeled with this scent. In the presence of snake chemicals, lizards curtailed the duration of several components of their foraging behaviour.

Biodiversity resources in Belgium: the database BIODIV

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Belgium, like many other countries, has ratified the Convention on Biological Diversity (Rio de Janeiro, 1992). As part of its obligations it is making an inventory of the expertise in biological diversity present in Belgium. The database BIODIV is an interactive website on the Internet (http://www.br.fgov.be/BIODIV).

BIODIV contains an extensive list of biodiversity research items done by Belgian researchers or in Belgium. It also offers an overview of biological collections and databases conserved or kept in Belgium. Events related to biodiversity, such as symposia, congresses, important press releases,... in Belgium and its surroundings are announced. A bibliography of Belgian standard literature on biodiversity is offered.

BIODIV contains information on biodiversity research and conservation, ranging from the genome to infraspecific diversity, species diversity, populations, biocoenoses and the biome level.

It is also a guide to Belgian biological university labs, research institutions, zoos, botanic gardens, museums, nature education centres, associations, journals, independent experts,... and their eventual websites.

To select research items and collections three different search keys are accessible - taxonomy, geography and miscellaneous - separately or in combination. Databases present on the Internet can be consulted on-line from BIODIV.

Belgian users have standard forms at their disposal on the web to add or modify any information on themselves or on their biodiversity related activities. At this point the database contains information on some 120 institutions and 500 subdivisions, 700 people and 1000 research lines.