VALCHÁŘOVÁ Tereza

The effect of parasitism on boldness and sheltering behaviour in albino and pigmented European catfish (*Silurus glanis*)

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albinism, glochidia, boldness, sheltering

It is well known that parasites can change the behaviour of their hosts, but little attention has been given to the relationship between parasite effects on host behaviour and colouration. The correlation between disrupted melanin production and alterations in various physiological and behavioural traits, e.g., aggression, shoaling behaviour, stress responsiveness and sensitivity to brood parasitism, has been reported in albino fish. We hypothesized that parasitism would affect the behaviour of albino and pigmented conspecifics differently. In laboratory conditions, we parasitised pigmented and albino European catfish *Silurus glanis* with glochidia of two Uninoidea species, namely, the native species *Anadonta anatina* and the nonnative species *Sinanadonta woodiana* and investigated the effect of parasitisation on the boldness and sheltering behaviour of the hosts. We observed a distinct effect of parasitisation with these two bivalve species on catfish behaviour. The behaviour of albino individuals differed from that of pigmented conspecifics both before and after parasitisation. Parasitisation with glochidia did not affect sheltering behaviour, but it significantly altered boldness. Pigmented individuals were bolder after parasitisation, whereas albino individuals did not exhibit changes in behaviour after parasitisation. Furthermore, the tested two species of glochidia did not differentially influence fish behaviour. The results demonstrate that albino individuals responded differently to parasitism than pigmented individuals.

VAN WICHELEN Jeroen

Every cloud has its silver lining, is there a bright future ahead for European weatherfish in Belgium?

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weatherfish, Species Protection Plan, captive breeding, eDNA monitoring, habitat restoration

Its eel-like appearance, hidden lifestyle and extreme adaptations for a life in the swamps makes European weatherfish (*Misgurnus fossilis* L. 1758) an atypical but enigmatic fish species. Although its weather-forecasting aptitude belongs to the cultural heritage, the species acquaintance is fading away in line with its occurrence in much of its natural range. In Flanders (northern part of Belgium), the species has suffered strongly from a changing water landscape, especially since the 1950s. Mainly in function of regulation, many rivers have been straightened and deepened, resulting in accelerated drainage and disconnection of their floodplains. Intensified agriculture in line with the loss of ancient practices (e.g. old irrigation or fish farming habits) and a warming climate, causing preliminar desiccation of its spawning grounds, further contributed to its current critically endangered status.
In 2021, a Species Protection Plan was launched to save this species from extinction. The main tasks include a regional wide survey, including eDNA techniques, in search for any unknown relic population,

habitat restoration, adjusted species oriented management and genetic strengthening of the relic populations by restoring ecological corridors and adding juveniles from a captive breeding campaign, financially supported by the European Life-program (LIFE-B4B project). Measures are also taken to prevent the further spread of the IAS northern weatherfish (*Misgurnus bipartitus* Sauvage & Dabry de Thiersant 1874), currently causing extra pressure on one of the last remaining European weatherfish strongholds in Belgium through competitive exclusion and hybridisation risk.
Although the survival of European weatherfish in Belgium is still uncertain, the necessarily change in current water policy with attention for more ecologically driven discharge dynamics (Eflows), rewetting and restoring lateral connectivity provides the right momentum. As such, European weatherfish may benefit strongly from - and can even be regarded as a real symbol or flagship species for - sustainable water management in lowland western Europe.

VRTÍLEK Milan

Effects of parental senescence in an annual killifish

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parental effects; senescence; inheritance

Age-related deterioration of parents can be passed onto the next generation as they produce biologically 'older' offspring. Such offspring is inferior in competition with offspring of young parents. Here, we test the effect of parental senescence in turquoise killifish (*Nothobranchius furzeri*, Cyprinodontiformes), an extremely short-lived “annual” fish. Annual killifish egg banks hatch after extended dormancy when seasonal rains arrive. In the ongoing project, we want to determine whether the viability of killifish offspring declines with parental age due to senescence. Trading off the quantity against quality of offspring would allow annual killifish to hedge their bets in the unpredictable environment of ephemeral pools. Alternatively, turquoise killifish could sacrifice late-life fecundity in favour of offspring quality. We therefore monitored age-related decline in captive killifish parents and focused on life-history traits such as egg number, fertilization rate and egg size. First results show that older parents of turquoise killifish lay fewer eggs compared to young parents, their embryos have lower incubation survival and slower early-life growth. Our preliminary results thus suggest that turquoise killifish has not escaped the inter-generational impact of senescence. Further research will help us to better understand mechanisms of this transmission.

VUKIC Jasna

Convergent evolution in body shape in goby lineages

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ecomorph, convergence, teleosts, molecular phylogeny, geometric morphometry

Animal groups have undergone significant morphological changes and have adapted to various types of environments during their radiations. In 1972, E. E. Williams introduced the concept of "ecomorph", referring to a group of species with similar morphology and behaviour inhabiting the same habitat,