

THE URODELE METAMORPHOSIS: REGULATORY MECHANISMS AND EVOLUTION (O)

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The primitive urodele life cycle is represented by the aquatic larval and terrestrial adult stages with metamorphosis as an intermediate stage between them. The urodele evolution is accompanied by the progressive divergence between larval and adult morphology due to the progressive accumulation of larval and adult specializations. Also, many adult structures which in primitive salamanders start to develop at larval stage, in advanced urodeles postpone their development until metamorphosis. As a result, in the urodele evolution metamorphosis becomes more complicated since the every metamorphic system undergoes more complicated remodelling and more developmental events become accumulated within a narrow period of time (metamorphosis). In parallel, the urodele evolution is accompanied by the increasing significance of thyroid hormones as metamorphosis-regulating factors. Role of TH is minimal in the ontogeny of primitive salamanders (hynobiids) and maximal in advanced ones (plethodontids). Developmental events which in primitive salamanders are under the non-hormonal control (most likely, epigenetic), become shifted under the endocrine control in the advanced ones. This change in the regulatory mechanisms allows to eliminate some intermediate larval structures early necessary as participants of epigenetic interactions (e.g., as inductors) and to shorten both the whole developmental process and metamorphic transition. Moreover, it allows decoupling the larval and adult developmental programs in some metamorphic systems.

Key words: urodeles, metamorphosis, evolution, thyroid hormones

CONCLUSIONS AFTER TEN YEARS OF REPTILE MONITORING IN THE NETHERLANDS (O)

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The Dutch reptile-monitoring program started in 1994 in order to detect changes in populations of the seven reptile species present in The Netherlands. Six species are threatened and occur on the National Red List. The monitoring program is set up as a tool in the evaluation of the national nature policy. Reptiles are counted by volunteers using a standardized transect-sampling method. Recruitment of volunteers has proven to be successful with a total of 306 sampled transects in 2002.

Trends are calculated using a loglinear regression method. Possible artifacts are avoided by assessing weight factors for each transect. The experience of participants has proven to bias the results. This is accounted for by evaluating the experience level of each participant. After five years of monitoring first conclusions could be drawn for five species: *Lacerta agilis*, *Lacerta vivipara*, *Podarcis muralis*, *Natrix natrix* and *Vipera berus*. After nine years of monitoring significant trends are calculated for all seven species including *Coronella austriaca* and *Anguis fragilis*. Thus the main target of the Dutch reptile monitoring program, to minimize standard errors so reliable trends can be calculated, is reached by now. Results and trends will be shown of all species.

Key words: conservation, monitoring, reptiles, Netherlands, loglinear regression