

Putative vectors of Central European lacertilian and chelonian unicellular blood parasites

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Within the last years some intraerythrocytic apicomplexian protozoa were detected in red blood cells of native lizards and allochthonous sliders hitherto unknown to occur in Central Europe. The hemogregarines *Karyolysus latus* parasitized Croatian *Algyroides nigropunctatus*, *Podarcis muralis*, and *P. melisellenensis*; and *K. lacertae* was first found in red blood cells of Lower Austrian *Zootoca vivipara*; and free-living, allochthonous sliders (*Trachemys scripta*) are infected with the nearctic Plasmodiid blood-parasite *Haemoproteus degiustii* (syn. *H. metchnikovi*) in Carinthia. All of these apicomplexian parasites need a vector for transmission and/or a second host besides the reptilian host to complete the life-cycle.

In the absence of the European pond turtle leech, which is the specific, monophagous vector of palearctic turtle hemogregarines, *H. degiustii* either causes parasitemiae for decades in the hitherto non-reproducing slider populations, or it uses *Chrysops relictus* or another *Chrysops* horse fly as native vector, in an analogous way to its transmission by *Chrysops callidus* in North America.

Although most Palearctic *Karyolysus* species complete their life-cycles in Ophionyssus mites in the laboratory, the effectiveness of the postulated life-cycle in the wild is dubious. Transmission of a blood parasite by the bite of an infectious tick appears to be much more efficient than the postulated ingestion of engorged mite nymphs; and ticks stuck to lizards are much more abundant in nature than molesting mite nymphs. Thus, one can hypothesize an association of *Karyolysus latus* with the Mediterranean rodent tick, *Haemaphysalis concinna*, as more than 90 % of the lizards infected with *Karyolysus* were found to be infested with Ixodid ticks.