

The dissertation focuses on the habitat selection of the Two-spotted Dragonfly *Epitheca bimaculata* CHARPENTIER 1825 (Corduliidae). Important aspects of the chapter dealing with the faunistical-ecological and phenological data base are: comparison of the study sites in the “Central Valley of the River Saar” (esp. bayous, ponds) and the biosphere reserve „Schorfheide-Chorin“ (small lakes), increase in the amount of newly detected occurrences in both study regions owing to an optimised and intensified search strategy, characteristics as a typical spring species (start of emergence in the first half of May) with a short emergence period and a flight period until the end of June/beginning of July, and relations between emergence and flight period and weather characteristics.

The females select submersed habitat elements near the water surface in the open water of the breeding sites (floating leaf of plants such as *Nuphar lutea*, large areas with submersed plants, e.g. *Myriophyllum* spp., *Ceratophyllum* spp. and *Elodea canadensis*, reeds standig in the water, or woody debris) for the deposition of the egg strings containing more than 1,000 eggs. The analysis of the oviposition sites shows marked differences between the stem habitats. In several cases a repeated neighbouring, thus double concentrated oviposition took place and frequently it was observed on the edges of submersed vegetation just below the water surface. These parts of the water bodies used as oviposition sites are also primary triggers of habitat selection for mature males, because in most cases these males ready for reproduction use the same habitat elements for orientation within the territories, which are sometimes continuously occupied for several hours. Perching behaviour and thus habitat selection of the males can be influenced by strong wind, shadow by groves at the shoreline, or the presence of other dragonflies which occupy perching sites in a similar way and are dominant over *Epitheca*. The lack of an exact congruence of perching and oviposition sites is discussed as well as the potential correlation between differences in niche specialisation between younger and older larvae. Also, the frequently observed orientation of territorial males towards the edges of submersed vegetation is discussed.

The behaviour in larval stages 1-3 is, above all, characterized by the selection of submersed, vertical habitat elements located near the water surface. Some weeks older larval stages switch to a predominantly or at least partially benthic and night-active life style.

Special interest was paid to the documentation and analysis of emergence sites, and on habitat selection of the F-0-larvae, as indicated by the sites where the exuviae were found. For this purpose, quantitative, spatially precise documentation data taken over many years at the biggest population in the “Saarland”, the analysis of accumulations of exuviae (amount and extent), correlations between the finding sites of the exuviae and various habitat elements (positive correlation with *Nuphar lutea*) and the depth of the water bodies (negative to the maximal depth), and changes over the course of the six intensive study years are used. In addition to the comparison with other stem habitats, emergence substrates, distance from the shoreline and height of the emergence sites are treated. The duration of the larval period of usually two or three years was deduced from the analysis of potential sibling pools, the characteristics of pools of exuviae found within very short distance of each other, and the often both highly stenotope and synchronized behaviour of the emergent F-0-larvae are taken into account as well.

In a comprehensive, synecological synopsis, different hypotheses about the ecological requirements of the species are developed and discussed. In this context, the population ecological view of the known occurrences in reference to the mobility and dispersal ability is taken into consideration. Aspects of stenotopy and synchronisation are evaluated and compared with other species. The observed behaviour and the habitat selection are related to the visually identifiable habitat factors. The role of potentially effective ultimate factors in the water body is discussed. The availability of vertical habitat element near the surface and the ecological conditions in the fish dominated biocoenosis are found to be the most important factors. The negative biotopes and the observed effects of changes or systematic manipulations of the habitat configuration at some occurrences are included into these considerations. The special role of fish and the ecological adaptation of the *Epitheca* larvae to the fish-dominated biotope, the ecological comparison and the syntopy with *Leucorrhinia caudalis* and *Cordulia aenea* are discussed in the context of the synecological demands of the species. Subsequently, a new classification, exceeding the common classification of the occurrences in stem-, secondary- and male-habitats, is proposed, and the different metapopulation levels and a promising search strategy are discussed. In a separate chapter about aspects of nature conservation, the current classification in the Red List of Germany (“endangered”), the proposal to include the species in a nation-wide monitoring programme, the high diversity of dragonflies at the *Epitheca* waters, the function as an indicator species, the coexistence with other species, threat factors and components of the management of the species and a protection concept are treated.