

This Ph.D. thesis is focused on hormonal control of sexual dimorphism in lizards and is composed of four contributions. Sex steroid hormones are important for development and regulation of sexual dimorphism in reptiles, but particular traits are controlled by different endogenous mechanisms. Male sexual behaviour of the gecko *E. macularius* is controlled by testosterone and can be successfully induced in females, only the onset and cessation of the behaviour take longer than in males. The onset and cessation of particular traits are not immediate for both sexes, and this time component has to be taken into account in future experiments using hormonal manipulations. In other species of the gecko, *P. picta*, testosterone and dihydrotestosterone stimulates the expression of male sexual behaviour in females as well. Male offensive aggression occurs only in testosterone-treated females, probably due to its conversion to biologically active estradiol in the brain, testosterone thus stimulates offensive behaviour probably only indirectly. Both androgens also stimulate the growth of the male copulatory organs, hemipenes, in females, but in different way than the size of penis in male mammals. Sexual behaviour of both gecko species is associated with sex recognition, which is allowed by androgen-triggered cues in males, whereas female attractiveness pheromone controlled by ovarian hormones is not required for identification of an individual female as a sexually attractive female. Sexual size dimorphism in geckos is caused by growth feminization by ovarian hormones in females, whereas male gonadal androgens and female reproductive costs are not involved - males thus are rather neutral sex in the respect of growth control by gonadal hormones. This Ph.D. thesis, focused on two model gecko species, provides new insights into the current knowledge of endogenous mechanisms controlling particular components of sexual dimorphism in squamate reptiles and vertebrates as a whole.