

Review of the PhD thesis

Adéla Petrželková:

Conspecific Brood Parasitism: a case study on the Common Pochard and the Barn Swallow.

The PhD thesis soon-to-be defended by Adéla Petrželková is focused on very favourable topic of Behavioural and Avian Ecology. It focuses on Conspecific Brood parasitism, using two bird species as models precocial Common Pochard and altricial Barn Swallow.

Adéla Petrželková very successfully took the opportunity to collaborate with numerous Czech and foreign colleagues.

The dissertation opens with general introduction, where the issues are presented on 12 pages (except references). This section is written concisely and clearly. It is particularly focused on phenomenon of Brood parasitism, which can represent alternative reproductive strategy for about 1 % bird species. The basic hypotheses of reason for Conspecific Brood Parasitism (hereafter CBP) are explained. Moreover, methods overview for recognition or identification of causes of CBP including traditional methods as well as modern molecular methods such as protein fingerprinting is presented. In the following text, the main results and outputs of papers and manuscript included in the thesis are discussed. These outputs are properly related to current knowledge in the study topics.

Four following chapters consist of three papers published in journals listed on Web of Science (i.e. Acta Ornithologica, Behaviour Ecology and Sociobiology, Journal of Avian Biology) and one manuscript (which probably was not submitted in the moment of finishing the PhD Thesis). Adéla Petrželková is the first author of all three papers as well as of the un-submitted manuscript. Moreover, as Appendix, two papers documenting professional skills and publication efforts of Adéla Petrželková are enclosed.

Nevertheless, I find several points which need to be explained in the following discussion.

(1) The defended PhD study included precocial species Common Pochard and altricial species Barn Swallow. Why did you select those species? Why are included one precocial and one altricial species? Why not two precocial diving duck species or two altricial passerine (Swallow/Martin) species? Are there any outputs of presented PhD study which can explain different pattern in CBP among precocial and altricial species?

Although, the introduction is written concisely and clearly, I find several sections which have to be explained more precisely.

(2) On page 10, the third criterion of conspecific brood, i.e. finding of new egg before clutch initiation is mentioned. In my opinion, the laying of one new egg per day is normal sequence for egg laying. Therefore in each non-parasited duck clutch we can find one new egg every day before clutch initiation but not after clutch completion.

(3) Two values of CBP rate (i.e. 91 % and 72 %) in abstracts (in both Czech and English version) have to be explained.

(4) Finally, I find several points in Chapter 4 which can be discussed. The comments to this Chapter reflect also the fact that it is only part of PhD thesis, which was not published up to now. First, I am very glad that data which were sampled between 2004 and 2006 were recently analysed. I would like to ask you about current status of this manuscript.

I consider the analysis allowing to distinguish between three reproductive strategies of Common Pochard (i.e. Nesting female, Parasite and Nesting parasite) females very nice. Nevertheless, I do not follow your speculation about importance of predation pressure caused by American Mink. Do you have any supporting information? What is the rate of predation? Is there assumed predation of clutches or females? Could you explain different effects of predation on females or clutches? Are there any data supporting differences in predation rate among study years 2004, 2005 and 2006? Surprisingly, there are not included any references supporting Mink occurrence or predation rate in the study area

(5) Could you mention any other factors explaining the differences in population structure (i.e. Nesting female, Parasite and Nesting parasite) of Common Pochard in study area in Třeboň Biosphere reserve? I would like to underline that some of these factors were monitored.

(6) There are many sections of this PhD study, where effect of Conspecific Brood Parasitism on fitness of individual females of Common Pochard is discussed. Surprisingly, no analyses of individual fitness on various reproductive strategies of Common Pochard in the study area (i.e. Nesting female vs Nesting parasite) are included. Do you have any results related to individual reproductive success of these two groups of duck females? (I know that these data are available from the study area and from study years).

(7) Moreover, the conclusion of Chapter 2 (Petrželková et al. 2017, Journal of Avian Biology) is that variation in egg morphology does not provide a reliable clue for distinguishing parasite nests from non-parasited nest in Common Pochard. My question is if variation in egg morphology can be used for identification of inter-specific nest parasitism? Do you have any analysis of this phenomenon?

(8) Finally, I would like to ask you: How frequent is inter-specific nest parasitism in clutches of Common Pochard. Which other duck species is the main other parasiting species? Which other duck species is the main host species for Common Pochard eggs?

Finally, I am pleased to conclude that the PhD thesis offered by Adéla Petrželková meets all the factual and formal attributes related to this type of scientific work and I can recommend it to the last official step toward its successful defence and conferring the relevant academic degree.

Praha, 16th June , 2017

Petr Musil