



Prague, 4/9/2020

Recommendation for the diploma (MSc) thesis of Bc. Tomáš Charvát

I read with great interest the diploma thesis of Bc. Tomáš Charvát, entitled “Evolution of sex chromosomes and karyotypes in boas and pythons”. The main aim of the thesis was to explore the sex determination system of boas and pythons by cytogenetic methods. The author examined during his thesis eight species of henophidian and one species of caenophidian snakes. In addition to the main scope of the project, the author examined snake species beyond the phylogenetic spectrum of boas and pythons. The methodology was performed correctly and according to our original experimental design. Notably, the illustrations (e.g. karyograms, stains, *in situ* hybridization) are of excellent quality. Despite that sex chromosomes were not identified in any of the studied henophidian snakes, the author provides alternative explanations of his results and presents an extensive karyotype description of these snake species, which in a great extent were not previously studied. The results and the discussion sections are well written and nicely explain the obtained results and the future directions of the research in this field.

Notably, I would like to comment that Bc. Tomáš Charvát:

1. demonstrated a notable ability to work in the laboratory autonomous and under minimum supervision.
2. learn and mastered in a small time period several demanding molecular and cytogenetic methods.
3. showed critical and evolutionary thinking and ability to interpret his results in a greater context.
4. prepared a notably well written text of his diploma thesis, both concerning the quality of the scientific context and the English language.
5. collected interesting scientific data on the cytogenetic analysis of the studied species, which will be used for the preparation of a scientific manuscript, with Bc. Tomáš Charvát as first author. The manuscript will be submitted in the journal *Genes* (IF = 3.331) in the following months.

Summarizing, I believe that Bc. Tomáš Charvát worked intensively and methodologically during his MSc study, he expanded his knowledge on cytogenetics and evolutionary biology, he obtained interesting scientific results and submitted a well written thesis. In this context, Bc. Tomáš Charvát fulfilled all requirements for a successful diploma thesis, and I am delighted to recommend the acceptance of his thesis, awarded with an excellent mark (1).

Sincerely,

Michail Rovatsos