

THE JOURNAL OF THE AMERICAN CHEMICAL SOCIETY
PUBLISHED WEEKLY
Vol. 75, No. 1, January 1953

1953


AMERICAN CHEMICAL SOCIETY
505 LEXINGTON AVENUE, NEW YORK 17, N. Y.

1953

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LP 15 FST 4 2005



1100036856
Mate choice intrasexual competition and sexual fidelity of
hippocampus kuda / Loh Le Cheik.



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MATE CHOICE, INTRASEXUAL COMPETITION AND SEXUAL FIDELITY OF
Hippocampus kuda

By

Loh Le Cheik

Research Report submitted in partial fulfillment of
the requirements for the degree of
Bachelor of Applied Science (Biodiversity Conservation and Management)

Department of Biological Sciences
Faculty of Science and Technology
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA
2005

This project should be cited as:

Loh, L.C. 2005. Mate choice, intrasexual competition and sexual fidelity of *Hippocampus kuda*. Undergraduate thesis, Bachelor of Applied Science in Biodiversity Conservation and Management, Faculty of Science and Technology, Kolej Universiti Sains dan Teknologi Malaysia, Terengganu. 119p.

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DEPARTMENT OF BIOLOGY SCIENCE
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APPROVAL AND CERTIFICATION FORM
RESEARCH PROJECT I AND II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

Mate Choice, Intrasexual Competition and Sexual Fidelity of *Hippocampus kuda*
oleh Loh Le Cheik, No Matric. UK6230 telah diperiksa dan semua pembetulan
yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains
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ACKNOWLEDGEMENTS

First and foremost, I would like to thank Associate Professor Liew Hock Chark, my supervisor for being generous in sharing his knowledge and also exposing me to what this research is all about. His guidance and patience has made my research possible and successful.

Secondly, I would like to thank Mr. Amirrudin Ahmad, my second supervisor for his advice and invaluable opinions for my project. My appreciation also goes to seniors, Choo Chee Kuang and Ah Yong for their supportive and assistance in doing my study.

My deep gratitude goes to my family, my parents and brothers for their unconditional love and support. Thanks also to my housemates: Loh Jiun Yan and Chen Pelf Nyok who tolerated me emotionally during my hard days in completing this project. I am also grateful to Hooi Ling, Oi Meng, Yeong Chiean, Chin Koon, Robert, Lilian, Siew Peng, Chai Pin, Nyuk Ling and Su Shiung for discussing and solving the problems I encountered.

Last but not least, in order not to leave anyone out, thank you to all who were involved directly or indirectly during the completion of my project.

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LIST OF ABBERRVIATIONS

Abbreviation	Meaning
ANOVA	Analysis of Variance
SNK	Student-Newman-keuls
S.e.	Standard error
FCOMP	Female-female competition
MCOMP	Male-male competition
TCM	Traditional Chinese Medicine
IUCN	International Union for the Conservation of Nature
♂	Male
♀	Female
←	Move out
←---	Move in

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ABSTRACT

A study of the yellow seahorse, *Hippocampus kuda* (Syngnathidae) were conducted on aspects relating to mate choice, intrasexual competition and sexual fidelity. In the mate choice experiment, the brightening frequency of a seahorse in front of the opposite sex was observed. *H. kuda* were noticed to spend more time (two-way ANOVA with replication, $p < 0.05$) and more frequent brightening (Friedmen's test, $p < 0.05$) in front of larger members of the opposite sex. This shows that partner selectivity is towards the larger sex. The intrasexual competition is a continuation of the mate choice experiment. Male and female seahorses exhibited almost the same courtship behaviour but differ in competition behaviour. Only "wrestling", "intruding", "flattening" and "snapping" were not seen in the courtship behaviour by a pair, hence the competitive behaviour (Wilcoxon signed-rank test, $p < 0.05$). In addition, males compete more actively for mates (Kruskal-Wallis test, $p < 0.05$). In the sexual fidelity experiment, a new male was introduced to the female soon after the original male was pregnant. *H. kuda* were found to be unfaithful to their partners even though their partners were around. The findings in this study may not be representative due to the scarcity of samples. Thus it is recommended that researches on the biology of seahorses be conducted to successfully breed large numbers of seahorses for conservation purpose.

PEMILIHAN PASANGAN, PERSAINGAN INTRASEKSUAL DAN KESETIAAN SEKS *HIPPOCAMPUS KUDA*

ABSTRAK

Satu kajian ke atas kuda laut kuning, *Hippocampus kuda* (Syngnathidae) telah dijalankan berdasarkan aspek-aspek berkaitan dengan pemilihan pasangan, persaingan intraseksual dan kesetiaan seks. Dalam eksperimen pemilihan pasangan, sinaran sering berlaku pada kuda laut semasa dihadapan jantina yang berlainan telah diperhatikan. *H. kuda* didapati dengan menghabiskan banyak masa (ANOVA dua hala dengan replikasi, $p < 0.05$) dan sering bersinar (Fridmen's test, $p < 0.05$) dihadapan anggota yang besar pada jantan yang berlainan. Ini menunjukkan bahawa pemilihan pasangan adalah terhadap jantina yang besar. Kuda laut jantan dan betina mendedahkan kelakuan yang lebih kurang sama semasa memikat tetapi berlainan dalam kelakuan bersaing. Hanya "bergelut", "berganggu", "bercondong" dan "berderap" tidak dapat diperhatikan samasa kelakuan memikat satu sama lain, dengan demikian itu adalah kelakuan bersaing (Wilcoxon signed-rank test, $p < 0.05$). Tambahan pula, jantan bersaing dengan lebih aktif untuk mengawan (Kruskal-Wallis test, $p < 0.05$) dalam eksperimen kesetiaan seks, satu jantan baru telah diperkenalkan kepada betina sebaik sahaja jantan asal itu telah mengandung. *H. kuda* didapati tidak setia kepada pasangannya walaupun ia masih berada diseliling. Keputusan dalam kajian ini mungkin tidak representif kerana kekurangan sampel. Dengan demikian, ini mencadangkan bahawa penyelidikan mengenai biologi kuda laut boleh dijalankan dengan berjaya supaya dapat melahirkan jumlah kuda laut yang banyak untuk tujuan pemuliharaan.