

FOOD AND FEEDING HABITS OF THE CROAKERS,  
*Otolithes ruber* (SCHNEIDER), *Pennahia macrophthalmus*  
(BLEEKER) AND *Johnius belangerii* (CUVIER),  
(PISCES : SCIAENIDAE)

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1993

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By  
**KOMATHI KOLANDAI**

A Project Report submitted in partial fulfillment of the  
requirement for the Degree of Bachelor of Fisheries Science.

**FACULTY OF FISHERIES AND MARINE SCIENCE  
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**SERDANG, SELANGOR  
1993**

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*This book is dedicated to  
my mother, brother and sister*



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## ACKNOWLEDGEMENT

I would like to express my greatest appreciations to my supervisor Prof. Madya A.K.M. Mohsin for his advice, guidance, patience, encouragement and assistance during the course of this study. I am also thankful to my co supervisor Dr. Haji Mohd. Zaki bin Mohd. Said for critically going through this report and offering valuable suggestions. I also wish to extend my gratitude to the staff of the Department of Fish Biology and Aquaculture, Faculty of Fisheries and Marine Science, Agricultural University of Malaysia, for their help in the laboratory works and in purchasing of samples, especially En. Mansoruddin Mohd. Alias, En. Esa Mohd. Daim, En. Muhammad Nasir Abdul Salam, Cik Fauziah Ahmad, Cik Nazifah Shaik Ismail and all the staff of Faculty of Fisheries and Marine Science who have helped in one way or another. Lastly, it gives me great pleasure in pronouncing my gratitude to En. Aziz Arshad and En. Ridzwan Abdul Rahman for their assistance in identification of some samples, Dr. Anuar Abdul Rahim (Agricultural Faculty), Mr. Nithianandan Das and my colleague En. Norhisham Ismail for their help in the statistical analysis of this project, Dr. Abdul Manan Mat Jais for his generous opinion and not forgetting to my brother Mr. Sanar Kumaran and my colleague Miss. Oh Ju Fong who helped in their own way in preparation of this report.

## ABSTRAK

Analisis kualitatif dan kuantitatif yang telah dijalankan ke atas kandungan perut tiga spesies sciaenid, *Otolithes ruber* (137 spesimen), *Pennahia macrophthalmus* (163 spesimen) dan *Johnius belangerii* (158 spesimen) yang diperolehi dari Sekinchan, Selangor dalam tempoh kajian selama lima bulan, menunjukkan bahawa ketiga-tiga spesies ini bersifat karnivor dengan udang sebagai makanan primer dan ikan sebagai makanan sekundernya. Analisis kuantitatif adalah berasaskan kepenuhan perut, Indeks Kepenuhan, Kaedah Numerik, Kaedah Frekuensi Kewujudan, Kaedah Gravimetrik dan Indeks Kepentingan Relatif. Kajian statistik ANOVA menunjukkan perbezaan yang bererti ( $p < 0.05$ ) di antara diet saiz-saiz ikan yang berlainan dan di antara bulan-bulan persampelan. Walaupun udang lebih digemari oleh setiap kelas saiz, *O. ruber* dan *P. macrophthalmus* menunjukkan penambahan dalam kepentingan relatif ikan dengan penambahan saiz dan spesimen-spesimen terbesar kedua-dua spesies ini mempunyai intensiti pemakanan yang paling tinggi. Intensiti pemakanan *J. belangerii* juga bertambah dengan penambahan saiz dan spesies ini menunjukkan kepelbagaian dalam jenis makanan dengan memakan dwicengkerang dan ketam di samping makanan utamanya. Kehadiran organisma benthik dan pasir dalam kandungan perut ikan ini mengesahkan tabiat mencari makanan di dasar pada ikan ini. Spesimen-spesimen terkecil ketiga-tiga spesies ini memakan mangsa yang bersaiz kecil. Penambahan dalam intensiti pemakanan, kepelbagaian jenis makanan dan penambahan kepentingan relatif ikan dalam spesimen-spesimen yang lebih besar menggambarkan kemajuan dalam keupayaan pergerakan dan pemakanan. Perbezaan dalam pemakanan di antara bulan mencadangkan kemungkinan terdapatnya variasi bermusim dalam jumlah jenis-

jenis makanan yang terdapat di persekitaran. Perbandingan diet ketiga-tiga ikan sciaenid ini menunjukkan persamaan dalam jenis makanan yang mencadangkan terdapatnya persaingan di antara ikan-ikan ini.

## ABSTRACT

Qualitative and quantitative analysis carried out on the stomach contents of the three sciaenids, *Otolithes ruber* (137 specimens), *Pennahia macrophthalmus* (163 specimens) and *Johnius belangerii* (158 specimens) obtained from Sekinchan, Selangor during a five month survey revealed that they were carnivorous subsisting primarily on shrimps and secondarily on fishes. Quantitative analysis was based on stomach fullness, Fullness Index, Numeric method, Frequency of Occurrence Method and the Relative Importance Index. Analysis of variance showed significant differences ( $p < 0.05$ ) in diet between different length classes and also between different months. Although shrimps were the more preferred food of all length classes of *O. ruber* and *P. macrophthalmus*, the relative importance of fishes increased with increase in length and the largest individuals of these two species had the highest feeding intensities. The feeding intensity of *J. belangerii* also increased with size and it showed diversity in food consumed by consuming bivalves and crabs in considerable numbers. The presence of sand and benthic organisms in the stomach contents further confirms the habit of browsing at the sea bottom for food, in this species. The smaller individuals of all three species consumed smaller sized prey. Increased feeding intensities, diversity in food consumed and the increased relative importance of fishes consumed in the larger sciaenids in this study suggests an advancement in movement and feeding abilities. Differences in feeding between months suggests possibilities of seasonal variations in the abundance of different food items available in the environment. Comparison of diets shows that the three sciaenids consumed similar food items, suggesting possibilities of competition among these sciaenids.