

SOME ASPECTS OF THE BIOLOGY OF
IKAN BAUNG, *Mystus nemurus* C. & V:
WITH REFERENCE TO CHENDEROH RESERVOIR

MOHAMMAD SALIM KHAN

MASTER OF SCIENCE (FISHERIES)
FACULTY OF FISHERIES AND MARINE SCIENCE
UNIVERSITI PERTANIAN MALAYSIA

1987

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IKAN BAUNG, MYSTUS NEMURUS C. & V.
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by

Mohammad Salim Khan

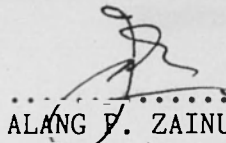
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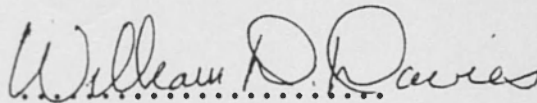
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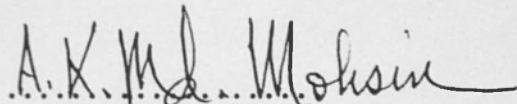
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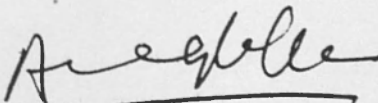
ALANG F. ZAINUDDIN, Ph.D.
Assoc. Professor/Dean of Graduate Studies
Universiti Pertanian Malaysia
(Chairman Board of Examiners)



WILLIAM D. DAVIES Ph.D.
Professor
Auburn University,
Alabama, USA
(External Examiner)



A.K.M. MOHSIN, Ph.D.
Associate Professor
Faculty of Fisheries and Marine Science
Universiti Pertanian Malaysia
(Internal Examiner)



ANG KOK JEE, Ph.D.
Associate Professor
Faculty of Fisheries and Marine Science
Universiti Pertanian Malaysia
(Internal Examiner)

This thesis was submitted to the Senate of Universiti
Pertanian Malaysia and was accepted as partial fulfillment of the
requirements for the degree of Master of Science.

4

.....
MOHD. AZMI BIN AMBAK (HAJI), Ph.D.
Associate Professor/Dean
Faculty of Fisheries and Marine Science
Universiti Pertanian Malaysia
(Supervisor)

ALANG P. ZAINUDDIN, Ph.D.
Associate Professor/
Dean of Graduate School

Date:

This thesis was submitted to the Senate of Universiti
Pertanian Malaysia and was accepted as partial fulfilment of the
requirements for the degree of Master of Science.

Date:

ALANG P. ZAINUDDIN, Ph.D.
Associate Professor/
Dean of Graduate School

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DEDICATION

**This work has been dedicated to
my parent, brothers and sisters.**

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LIST OF ABBREVIATIONS

| | |
|------------------|-------------------------|
| C.V. | Cuvier and Valenciennes |
| cm | Centimetre |
| conc | Concentration |
| Fig. | Figure |
| F.S.I. | Fat-Somatic Index |
| g. | Gram |
| G.S.I. | Gonado-Somatic Index |
| G.S.I. | Gastro-Somatic Index |
| mg. | Miligram |
| mg ⁻¹ | Miligram per litre |
| mm. | Milimeter |
| kg. | Kilogram |
| km. | Kilometer |
| R.G.I. | Relative Gut Index |
| μmhos/cm | Micromhos/centimeter |

ABSTRACT

An abstract of the thesis presented to the Senate of Universiti Pertanian Malaysia in partial fulfilment of the requirements for the Degree of Master of Science.

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Supervisor: Associate Professor Dr. Haji Mohammad Azmi bin Ambak

Co-supervisor: Associate Professor Dr. Ang Kok Jee

Faculty: Fisheries and Marine Science

Some aspects of the biology of Ikan Baung, Mystus nemurus C.&V. including taxonomy, food and feeding habits, reproduction, growth and its ecology were studied.

The fish is a bottom feeder and fed extensively on a wide range of food items that include teleosts, crustaceans, benthic invertebrates and detrital materials. The relative gut index has been found to vary from the lowest 0.783 to the highest 1.07 in a size range of 8.2 to 67.0 cm.

External fertilization and heterosexuality are exhibited. Sexual differentiation can be made depending on visual observation of secondary

sex characters. Five maturing stages have been identified. Size at first sexual maturity has been found within the length range of 32.5 to 35.5 cm in case of female and 35.5 to 38.5 cm in male.

Fecundity has been found to vary from 6,900 to 93,510 in specimens having a length range of 34.8 to 45 cm. The relationship between Fecundity, F, and Length, L can be expressed as

$$F = 0.0011L^{4.758}$$

The fish is a partial spawner and spawning period has been found long and indefinite. The ripe oocytes are therefore shed off within an interval of time. No major spawning season can be detected as is evidenced from the seasonal fluctuation of gonadosomatic index, ovadiameter measurements and different maturity stages. Fat contents in the abdominal mesenteries are associated mainly with maintenance and also for reproduction.

Growth parameters of the Von Bertalanffy equation were computed and is of the form

$$L_t = 87.0 (1 - \exp^{-0.579(t + 870)})$$

The calculated maximum size attainable is 87.00 cm. The length-weight relationship for male and female respectively are of the form:

$$\text{LogW} = 3.027 \text{ LogL} - 2.066$$

$$\text{LogW} = 3.201 \text{ Log L} - 2.307$$

Monthly variations of condition factor are very little.

Physico-chemical and biological regimes of Tasek Chenderoh were also studied to determine the species ecological requirements. Tasek Chenderoh is an oligotrophic, lowland, and shallow tropical reservoir. The water is slightly acidic, soft and has temporary thermocline and permanent chemocline of dissolved oxygen in open and deep water. Average pH, dissolved oxygen, temperature, conductivity, and total alkalinity were 6.35, 4.25 mg/l, 27.64°C, 47.72 $\mu\text{hos/cm}$, and 26.73 mg/l respectively. Nitrate-nitrogen and phosphate-phosphorus have been found limiting nutrient of primary production and the average of them were 0.085 and 0.015 mg/l respectively. Among plankton, there were 25 euplanktonic algae and 23 zooplankton heterotrophs. The mean density of phytoplankton and zooplankton were 33.25 cells/ml and 57 organisms/l respectively. Fish composition of Tasek Chenderoh consists of 50 heterogenous species of different families which can be arranged in terms of decreasing order: Cyprinidae(22), Anabantidae(6), Bagridae(3), Ophicephalidae(3), Siluridae(3), Claridae(2), Palaemonidae(2), Mastacembelidae(2), Cichlidae(2), Notopteridae(2), Eleotridae(1), Synbranchidae(1), & Gobidae(1).