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ELECTROPHORETIC STUDY OF MUSCLE AND EYE-LENS PROTEINS OF THREE SPECIES OF NEMIPTERIDS

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ABSTRACT

Muscle and eye-lens proteins of three fishes belonging to family Nemipteridae - *N.japonicus, N.mesoprion* and *N.delagoae* were determined by polyacrylamide gel electrophoresis. Densitometer scanning revealed species specific pattern for eye-lens proteins. Muscle protein pattern was however, uniform for all the three species.

INTRODUCTION

Identification of marine fishes using eye-lens, muscle and serum proteins has received much attention (Cushing, 1952; Moore, 1945; Sindermann, 1964; Deligny, 1969; Tsuyuki and Roberts, 1965). In population studies on fishes by means of bio-chemical methods, the collection of tissue samples has an advantage over the collection of blood samples because fishes need not be kept alive and can be stored on board the vessel under refrigeration for the tissues to be studied later when brought to the laboratory.

It is now well established that the genetic information contained in the DNA is translated through a series of reactions into the structure of proteins. Since DNA molecules are species specific the protein built under this is also species specific. The analysis of protein is therefore, useful for the understanding of taxonomic relationship of any species. Thus bio-chemical genetics is nothing but applications of separations and structural studies of proteins to taxonomic problems.

Generally protein from the muscle, eye-lens and haemoglobins are studied. In the present investigation muscle and eye-lens and haemoglobins are studied. In the present investigations muscle and eye-lens protein of three fishes belonging to family Nemipteridae is undertaken.

MATERIAL AND METHODS

Samples were collected from the landing centres in as fresh condition as possible. They were packed in ice and brought to laboratory. After removing the gut they were stored in deep freezer. Protein extract for the muscle was prepared by taking out 200 mg of muscle from the dorso-lateral region. This was mechanically crushed and diluted ten times in isotonic solution. It was subjected to centrifugation at 4,000 rpm for 30 minutes. For the preparation of eye-lens proteins the lens nucleus was washed in distilled water and then mechanically crushed and centrifuged at 5,000 rpm for 30 minutes. Method of Davis & Ornstein (1961) was followed for polyacrylamide gel

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