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Eel Ichthyofauna of Assam in Folklore Therapeutic Practices

Shamim Rahman^{1*}, Jitendra Kumar Choudhury², Amalesh Dutta³ and Mohan Chandra Kalita¹

1 Department of Biotechnology, Gauhati University

2 Department of Zoology, North Gauhati College

3 Department of Zoology, Gauhati University

*Corresponding Author: Shamim Rahman¹

Abstract

Over the past, plants and animals have been playing role in traditional therapeutic practices of the tribal and non tribal indigenous people of Assam. Ethnozoological study on eel fishes of Assam revealed the special significance of two eel species *Anguilla bengalensis* (Indian mottled eel) and *Monopterusuchia* (Swamp eel) among indigenous people and the use of the fishes in various traditional medical practices. Besides oral consumption of fish, various body parts, either in mixture with other plant or animal material or alone are used traditionally in treatments of anaemia, burn injury, piles, weakness etc. In this current study, conventional taxonomy of these two species is reviewed with documentation of their therapeutic utilization.

Key words: Eel, therapeutic practice, Assam.

Introduction

Use of fish in therapeutic purposes is an age old practice in the world. Fish is good source of animal proteins, fats, minerals and vitamins. It is an establish fact that regular intake of polyunsaturated fatty acids through fish consumption reduces heart diseases¹. Many compounds used in regular medicine have been extracted from fish. Being a good source of vitamins D, consumption of fish can improve bone related disorders. Similarly in regard of cardiac disorder treatment, fish oil has been proved to be very effective as this is rich source of poly unsaturated fatty acids (PUFAs). Assam is a part of biodiversity hotspot with plethora of species diversity and endemism. Plants and animals are in regular use of the indigenous people of this land. Assam harbours enormous diversity of fish species in rivers, streams and numerous wetlands. Like other biological entities, fishes also occupy an important place in traditional therapeutic practices in the state. Species like *Glossogobius giuris*, *Amblypharyngodon mola*, *Clarius magur*, *Heteropneustes fossilis*, *Rasbora daniconius*, *Channa spp.*, *Puntius spp.*, *Monopterusuchia*, have been reported of having importance in traditional therapeutic practices of Assam by different tribes and non tribes indigenous people^{2,3}.

Eels are consumed in many parts of the world for general body rejuvenation and well being⁴. *Synbranchus marmoratus*, commonly known as marbled swamp eel, has its role in traditional Brazilian medicine in treatment of asthma, bronchitis, hernia etc.⁵. Consumption of fresh blood of *Monopterusuchia* is reported from Nagaland in anaemic and asthmatic treatment⁶. Fish mucous of live *Anguilla bengalensis* in combination with rice or wheat flour is used in arthritis treatment⁷.

Like other Anguilliformes in other parts of the globe, *Anguilla bengalensis* is a highly priced food fish in Assam and neighbouring states. *Monopterusuchia*, which is synbranchiformes, is used in various cuisines of this region. Both the species are widely used in traditional folklore medicines of Assam, but rare documentation is observed in case of *Anguilla bengalensis*. Although nutritional benefits of these fish species have been established, traditional therapeutic customs using these fish are yet to be validated with scientific probe.

Methods and Methodology

All eel ichthyofauna, including spiny eels such as *Macrogathus aral*, *Macrogathus pancalus*, *Mastacembelus armatus* and spineless eels such as *Monopterusuchia*, *Anguilla bengalensis* were explored for information on their use in folklore medicines. Among these, two spineless eel species *Monopterusuchia* and *Anguilla bengalensis* were found having traditional use in therapeutic treatments. People were interviewed through questionnaire in Assam and parts of Assam-Meghalaya border zones. Specimens were collected at commercial fishing grounds and morphometric counts were conducted for confirmation of species. Measurements were taken using measuring scale and vernier calliper. Results were cross checked with established diagnostic keys^{8,9,10}.

Results

Taxonomic review

Species: *Monopterusuchia* Hamilton, 1822 (Common name: Swamp eel; Vernacular name: Cuchia/Kuchia)

Systematic position:

Phylum: Chordata

Class: Actinopterygii

Order: Synbranchiformes

Family: Synbranchidae

Genus: *Monopterus*

Species: *cuchia*

Diagnostic keys: Eel shaped body, eyes small, palatine teeth uniserial, dorsal and anal fin ridges rudimentary, reddish brown in body colour with black spots.

Average morphometric measurements are shown in figure 1

Use in folklore therapeutics

In general, the fish is consumed in weakness and anaemia. Dried head of this fish is mixed with other plant materials and prescribed by specialised person, known as 'bej', in treatment of loss of voice, paralysis, stomach disorders. Besides, in combination, this fish is used in treatment of asthma and piles.

Species: *Anguilla bengalensis* Gray, 1831 (Common Name: Indian mottled eel. Vernacular name: Nadal Bami)

Systematic position:

Phylum: Chordata

Class: Actinopterygii

Order: Anguilliformes

Family: Anguillidae

Genus: *Anguilla*

Species: *bengalensis*

Diagnostic keys: Elongated body, dorsal anal fin confluent around tail, thick lips, olive-brown body colour with dark brown spots.

Average morphometric measurements are shown in figure 2

Use in folklore therapeutics

The fish is normally consumed for general body well-beings. The mucous of this fish is used as skin ointment in dermatological treatments. This fish is also reported in particular treatments in which special practitioner consumes the mucous of the fish and uses his saliva in burn injury treatments.

Discussion

Fish is an integral part of socio-economic fabric of this region. This is the cheap but prime source of animal protein. Like many other plants and animals, fish occupies a special space in folklore therapeutics since long past through human faiths and believes. Ichthyotherapeutic documentation is not up to the mark from this region. Proper documentation may pave the way for scientific validation of the customs. Eels are always special in human psyche because of their charismatic shape and size. In many civilizations, eels are in use of folklore medicines. Besides *Monopterusuchia*, *Anguilla bengalensis* has also been come out as an important fish fauna which has significant role in traditional therapeutic practices but with rare documentation.

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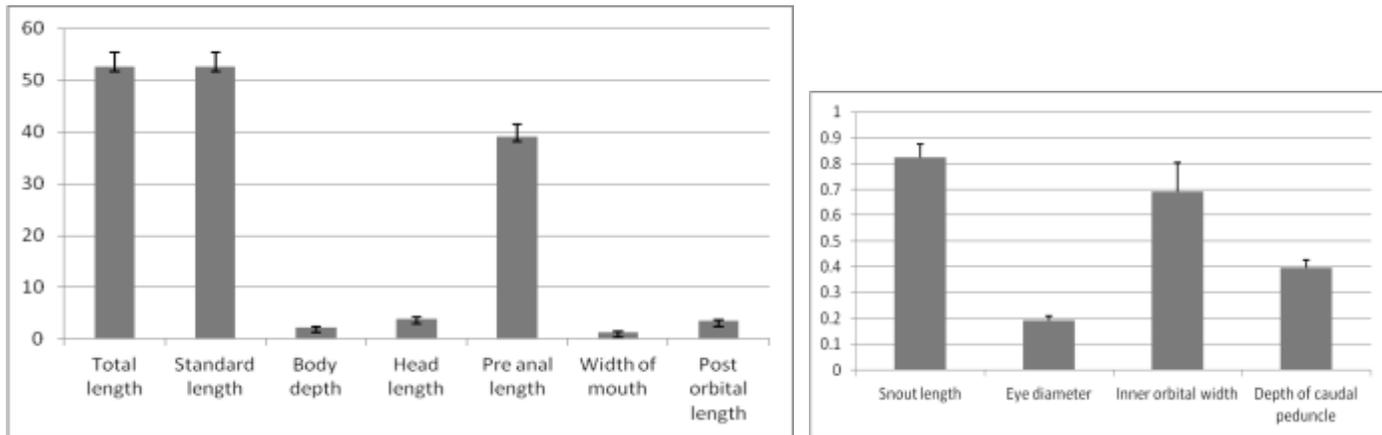


Fig1: Bar diagram representing average morphometric measurements of *Monopterusuchia* in cm (Y-axis)

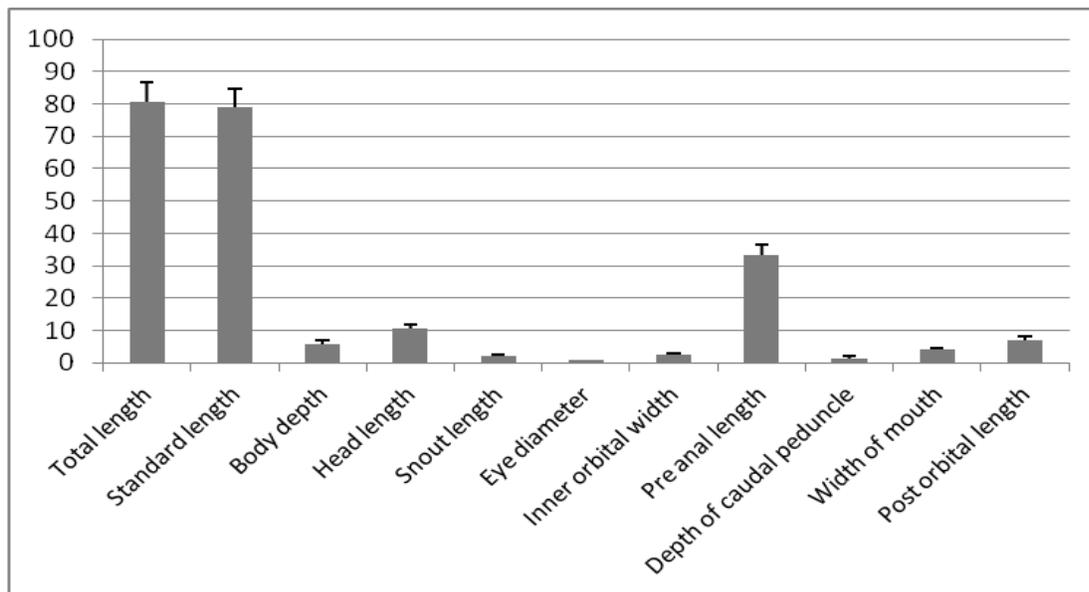


Fig2: Bar diagram representing average morphometric measurements of *Anguilla bengalensis* in cm (Y-axis)