

Systematic Study on Species Composition of Fish Species Collected from Myoma Market, Bago Township, Bago Region

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Abstract

The fish specimens were collected from Myoma Market in Bago Township, Bago Region. The study period lasted from January, 2020 to December, 2020. These collected species were recorded by digital camera. Identification of fishes was based on morphological characters, coloration, fin and scale counts, and measurements. A total of 36 species under 31 genera of 23 families belonging to 10 orders were collected. The species composition of recorded fish species was found to be the highest in the order Perciformes (31%), followed by Siluriformes (22%), Cypriniformes (19%), Synbranchiformes (8%), Anabantiformes (5%) and the remaining five orders; Osteoglossiformes, Clupeiformes, Beloniformes, Mugiliformes and Characiformes (each with 3%). The systematic position of the recorded fish species was given in tables. Graphic presentations were given based on the recorded data. The occurrence percentages of fish species were evaluated and discussed. The suggestions for future works are outlined.

Keywords: species, identification, systematic, specimens

Introduction

Fishes are the most ancient and diverse vertebrates and out of the 49,900 extant vertebrate species in the world, 21,723 are fish. Among these, 8411 are freshwater and 11,650 are marine species. Freshwater fish mostly live in the vast river systems and takes off the tropics (Mc Connell, 1987, Jayaram, 1999).

In Bago, the main production comes from fisheries. Fishing is conducted throughout the year and fish of commercial value are produced from that area and serve as a source of protein mainly consumed by the population of Bago environs. Bago environs are well noted for fish fauna and have been surveyed by previous workers' extensive taxonomic works on fishes. It is however, essential to survey the ecological aspects of some commercial fish species in Bago environs. In the different markets of Bago, the marketed fish were brought in by fishmongers. They had collected the fish from the fishermen. The fishing grounds of the fishermen were Bago Creek, Yangon, Thanat Pin, Waw and Pyin Pone.

The fish fauna of Bago environs has been surveyed by previous workers, particularly on the taxonomy and distribution of fishes. The aim and objectives of this study are:

- to investigate the fish species collected from Myoma Market in Bago Township
- to record the fish species composition by orders during the study period.

Materials and Methods

Study area and study sites

Bago Region lies between 17° 20' and 17° 34' North latitudes and 96° 29' and 96° 48' East longitudes. The study area is Myoma Market (N 17° 33' and E96° 48') (Fig. 2).

Study period

The present study was carried out from January, 2020 to December, 2020.

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Specimen collection

Fishes were collected from Myoma Market fortnightly in Bago. The collected specimens were preserved in 10% formalin. Information of local names and fishing grounds was followed according to the local people.

Identification and classification

The collected samples were identified according to their morphological characters, fin counts and measurements of total length and standard lengths. They were classified according to Day (1878), Nelson (2006), Rainboth (1996) and Tawlar and Jhingran (1991).

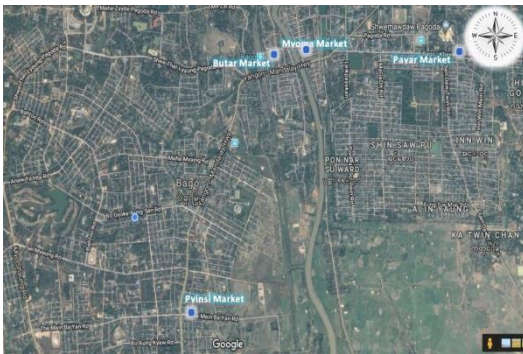


Fig 1. Satellite map of study sites in Bago
(Sources: Google map 2020)



Fig.2. Myoma Market

Results

The systematic position of recorded species

A total of 36 fish species from 31 genera, 23 families and 10 orders were recorded from Myoma Market (Table.1). The systematic position of recorded species from Myoma Market was based on Tawlar and Jhingran in 1991.

- Phylum - Chordata
- Class - Actinopterygii

Table .1 Species composition of recorded fishes of the markets during January, 2020 to December,2020

No	Order	Family	Species	Common Name	Local Name
1	Osteoglossiformes	Notopteridae	<i>Notopterus. notopterus</i> (Pallas, 1769)	Grey featherback	Nga-pheal /Nga- lar
2	Clupeiformes	Clupeidae	<i>Tenualosa. ilisha</i> (Hamilton, 1822)	Hilsa shad	Nga-tha-lauk
3	Cypriniformes		<i>Cirrhinus. mrigala</i> (Hamilton, 1822)	Mrigal carp	Nga-gyin-phyu
4		Cyprinidae	<i>Labeo. rohita</i> (Hamilton, 1822)	Rohu	Nga-gyin-ni
5			<i>Osteobrama. belangeri</i> (Valenciennes, 1844)	Manipur osteobrama	Nga-phan-ma
6			<i>Puntius. chola</i> (Hamilton, 1822)	Swamp barb	Nga-khone-ma
7			<i>Barbodes. gonionotus</i> (Bleeker, 1850)	Silver barb	Nga-khone-ma-gyi
8			<i>Amblypharyngodon. atkinsonii</i> (Blyth, 1860)	Mola carpet	Nga-bel-phyu
9		Cobitidae	<i>Lepidocephalus. berdmorei</i> (Blyth, 1861)	Burmese loach	Nga-tha-lae-doh
10	Siluriformes	Pangasiidae	<i>Pangasius. pangasius</i> (Hamilton, 1822)	Yellow tail catfish	Nga dan
11		Clariidae	<i>Clarias. batrachus</i> (Linnaeus, 1758)	Walking catfish	Nga-zin-yine
12		Heteropneustidae	<i>Heteropneustes. fossilis</i> (Bloch, 1794)	Stinging catfish	Nga-gyee
13		Bagridae	<i>Mystus. bleekeri</i> (Day, 1877)	Gangetic mystus	Nga-khu
14			<i>Mystus. cavasius</i> (Hamilton, 1822)	Day's mystus	Nga-yaecho
15			<i>Mystus. menoda</i> (Hamilton, 1822)	Menoda catfish	Nga-eike
16		Siluridae	<i>Ompok. bimaculatus</i> (Bloch, 1794)	Butter catfish	Nga-nu-than
17			<i>Wallago. attu</i> Bloch and Schneider, 1801	Boal / Freshwater shark	Nga-bat
18	Beloniformes	Belonidae	<i>Xenentodon. cancila</i> (Hamilton, 1822)	Freshwater garfish	Nga-phaung-yoe

Table.1 (Continued)

No	Order	Family	Species	Common Name	Local Name
19	Synbranchiiformes	Mastacembelidae	<i>Macrognathus aral</i> (Bloch and Schneider, 1801)	One-stripe spiny eel	Nga-mway-doh-byauung-chaw
20			<i>M.acrognathus zebrinus</i> (Blyth, 1858)	Zebra spiny eel	Nga-mway-doh-kyansit
21			<i>Monopterus javanicus</i> Lacepede, 1800	Swamp eel	Nga-shint
22	Perciformes	Channidae	<i>Channa striata</i> (Bloch, 1793)	Striped snakehead	Nga-yant
23			<i>Channa punctatus</i> (Bloch, 1793)	Spotted snakehead	Nga-panaw
24		Pristolepididae	<i>Pristolepis fasciata</i> (Bleeker, 1851)	Malayan leaf-fish	Nga-pee-ma
25		Anabantidae	<i>Anabas testudineus</i> (Bloch, 1792)	Climbing perch	Nga-pyay-ma
26		Latidae	<i>Lates calcarifer</i> (Bloch, 1790)	Barramundi / Asian sea bass	Ka-ka-dit
27		Gobiidae	<i>Apocryptes bato</i> (Hamilton, 1822)	Mudskipper	Nga-pyan
28			<i>Glossogobius giuris</i> (Hamilton, 1822)	Tank goby	Ka-tha-boe
29		Polynemidae	<i>Polynemus paradiseus</i> Linnaeus, 1758	Paradise threadfin	Nga-pon-nar
30		Sciaenidae	<i>Otolithoides pama</i> (Hamilton, 1822)	Pama croaker	Nga-poke-tin
31		Nemipteridae	<i>Nemipterus japonicus</i> (Bloch, 1791)	Japanese threadfin bream	Shwe-nga
32		Sillaginidae	<i>Sallago domina</i> Cuvier, 1829	Gangetic sillago	Nga-palwe
33	Mugiliformes	Mugilidae	<i>Mugil corsula</i> Hamilton, 1822	Goldspot mullet	Ka-belu / Nga-zin-lone
34	Anabantiformes	Osphronemidae	<i>Trichogaster pectoralis</i> (Regan, 1910)	Snakeskin gourami	Mwe-mu-yay / Sa-la-beya
35			<i>Trichogaster labiosa</i> (Day, 1877)	Thick-lipped gourami	Nga-pyin-tha-let
36	Characiformes	Serrasalminidae	<i>Piaractus brachipomus</i> (Cuvier, 1818)	Red-bellied pacu	Nga-moke

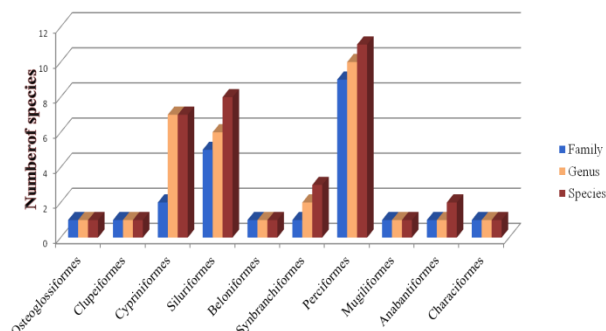
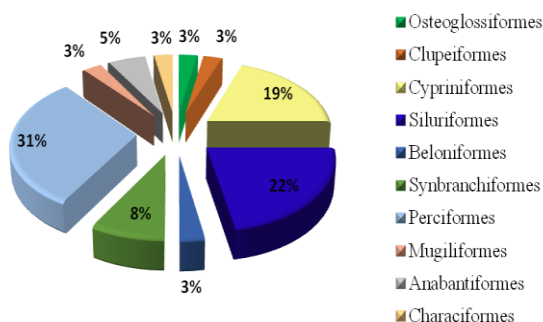


Fig. 3 Percentages of species composition by orders during the study period

Fig. 4 Species composition of the recorded fish species in Myoma Market



(A). *Notopterus notopterus*



(B). *Tenulosa ilisha*



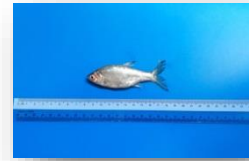
(C). *Cirrhinus mrigala*



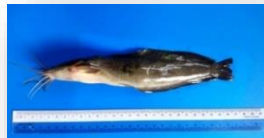
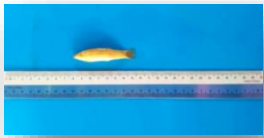
(D). *Labeo rohita*

Plate.1 Recorded fish species in Myoma Market

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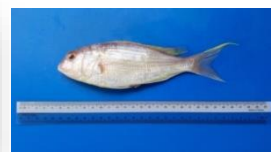
(E). *Osteobrama belangeri* (F). *Puntius chola* (G). *Barbodes gonionotus* (H). *Amblypharyngodon atkinsonii*



(I). *Lepidocephalus berdmorei* (J). *Pangasius pangasius* (K). *Clarias batrachus* (L). *Heteropneustes fossilis*



(M). *Mystus cavasius* (N). *Mystus bleekeri* (O). *Mystus menoda* (P). *Ompok bimaculatus*



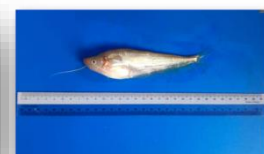
(Q). *Wallago attu* (R). *Xenentodon cancila* (S). *Macrognathus aral* (T). *Macrognathus zebrinus*



(U). *Monopterus iavanicus* (V). *Channa striata* (W). *Channa punctata* (X). *Pristolepis fasciata*



(Y). *Anabas testudineus* (Z). *Lates calcarifer* (AA). *Apocryptes bato* (AB). *Glossogobius giuris*



(AC). *Polynemus paradiseus* (AD). *Otolithoides pama* (AE). *Nemipterus japonas* (AF). *Sillago domina*

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(AG) *Mugil corsula*(AH) *Trichogaster pectoralis*(AI) *Trichogaster labiosa*(AJ) *Piractus brachypomus*

Discussion

In the present study, Myoma Market in Bago Township was designated as the study site (N 17° 34' and E 96° 48') for the study area. During this study period, the recorded 10 orders belonged to Osteoglossiformes, Clupeiformes, Beloniformes, Mugiliformes, Characiformes (each with 1 species), Cypriniformes (7 species), Siluriformes (8 species), Synbranchiformes (3 species), Perciformes (11 species), Anabantiformes (2 species). Species composition in recorded orders in Myoma Market; Osteoglossiformes, Clupeiformes, Beloniformes, Mugiliformes and Characiformes were represented by one species, one genus and one family. Anabantiformes were confined to two species including one genus and one family. Synbranchiformes were represented by three species, two genera and only one family. Cypriniformes were with seven species, seven genera and two families. Siluriformes were represented by eight species, six genera and five families. Perciformes were with 11 species, ten genera and nine families.

Regarding to the occurrence of species in Myoma Market, the order Perciformes was the most abundant of species (31 species). The result concurred with Nelson (1984) addressed that the Perciformes is the largest order among all fishes (Nelson, 1984). The number of the order of Perciformes is of considerable economic value, especially in the coastal fisheries. According to the literature stated that the Perciformes is the largest order of fishes comprising about 150 families and some 7800 species. About one-third of all fish species are Perciformes. About three-fourths of all Perciformes are marine shore fishes while about 14% normally occur only in freshwater (Talwar and Jhingran, 1991).

The recorded fishes at the markets of Bago were brought from the fishing grounds such as Pyin pone, Waw, Thanatpin, Bago creek and Yangon. Further investigation on the seasonal occurrence and economic importance of fish species and their future sustainable resource management strategies could be promoted.

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References

- Day, F.**, 1878. The fishes of India: Being a Natural History of the fishes Known to Inhabit the Seas and Freshwaters on India, Burma and Ceylon. William Dowson and Sons, London, Pages:778.
- Jayaram, K.C.**, 1999. *The freshwater fishes of the India region*. Narendra Publishing House. Delhi.
- McConnell, L.R.H.**, 1987. *Ecological studies in tropical fish communities* Cambridge Uni. Press, Cambridge.
- Nay Yee Myo Tint Tun**, 2014. Ichthyological studies on the Sittaung River Environs, Bago Region; *MSc Thesis*, Department of Zoology, University of Bago.
- Nelson** (2006). *Fishes of the World: Fourth Edition*. John Wiley and Sons, Inc., Hoboken, New Jersey.
- Rainboth, W.J.**, 1996. *Fishes of the Cambodian Mekong*. FAO species identification field guide for fisheries purposes. Food and Agriculture Organization of the United Nations, Rome.

Talwar, P.K., and Jhingran, A.G., 1991. *Inland fishes of India and adjacent countries*, Vol. I and II. Oxford and IBH Publishing Co, Pvt. Ltd. New Delhi. 541 pp.