



Identification of Mollusca Types Around Bungus Beach Padang

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Abstract

Mollusca animals have soft body, not segmented, most of the shell is made of calcium carbonate. Taxonomic identification is carried out to find out the types of Mollusca animals as well as for collections. This research aims to determine the types of Mollusca animals around Bungus Beach Padang. This type of research is descriptive of the roaming method. The cruising method is carried out by tracing the beach as far as the tides are ± 1 km long and 8 meters wide. Molluscs were taken directly three times and tested the water with physical and chemical factor parameters. The results obtained from the identification of Mollusca species found in the form of shells consisting of two classes, namely the Bivalvia class and the Gastropod class. The total number of individuals is 202 individuals. The most commonly found molluscs are the class Bivalvia with 17 species. The most abundant species and always found in each repetition was *Soletellina diphos* with 29 individuals, at least *Meretrix lyrata*, and *Barbatia fusca* with 1 individual. Class Gastropods found as many as 14 species. The species most commonly found was *Cypraea vitellus* with 15 individuals, the least found were *Cypraea leviathan*, *Murex trapa*, *Bufonaria rana*, *Turbo setosus*, *Pomacea* sp., *Phenacolepas* sp. amounted to 1 individual. Identification of the types of Mollusca animals can be identified based on the morphology of their shells and can also match the Mollusca images that have been obtained with the identification book. From the results of this study, it can be concluded that the identification of the types of Mollusca animals can be known based on the morphology of their shells and can also match the Mollusca images that have been obtained with identification books. The results of the research are recommended for further researchers to find the types of Mollusca animals as a whole, especially on the beach.

Keywords: identification, mollusca beach, type

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Introduction

Identification is an effort to recognize and describe carefully and appropriate to a species by giving it a scientific name. The first stage of Identification is grouping bodies that vary in depth nature into easily recognized groups to determine the important features of these groups and to give scientific names to them the group to allow naming to be based internationally agreed taxonomic provisions. which will be identified in this study are molluscs, namely molluscs which are soft animals with a body of bilateral symmetry, closed by the mantle which produces a shell with ventral legs. Molluscs have a fairly high ability to adapt to various habitats and can be used as an environmental bioindicator besides that also has an important economic value in society. Molluscs are organisms that have an important role in ecological functions, with Class including Gastropods and Bivalvia (Sowa et al., 2019). Terrestrial gastropods are soft-bodied animals with shells or do not have a shell or small shell (Sulikowska-Drozd et al., 2022). Land snails can be found in protected areas such as on the forest floor, litter, under rocks or rotten and weathered tree trunks, among between moss plants or plant roots to twigs and leaves at a height of more than three meters. Land snails have an important role as litter decomposers or detritus eaters or decayed material.

Gastropods are also part of the food chain system that exists in nature (Gümüş et al., 2022). Cyclophorus is a more diverse and terrestrial gastropod have a variety of habitats. Cyclophorus has a habitat on the forest floor, trees as well as arboreal species that live in canopied areas. Cyclophorus is species rich taxon with discoid shell turbinates which are circular the latter is often interrupted. Species and subspecies Cyclophorus found in Indonesia include *Cyclophorus rafflesii*, *Cyclophorus perdix perdix*, *Cyclophorus kibleri*, *Cyclophorus perdix*, *Cyclophorus rafflesii eximius*, *Cyclophorus perdix tuba*, *Cyclophorus perdix aquila*, *Cyclophorus perdix borneensis*, *Cyclophorus egregius*, *Cyclophorus schepmani*, *Cyclophorus nigricans*, *Cyclophorus courbeti*, *Cyclophorus hebereri*, *Cyclophorus bankanus*, *Cyclophorus taeniatus*, *Cyclophorus tuba plicifera*, *Cyclophorus rafflesii*, *Cyclophorus stevenabbasorum*, *Cyclophorus theobaldianus*, and *Cyclophorus kinabaluensis*. In Indonesia, Cyclophorus Gastropods can found in Java, Kalimantan and Sumatra. Gastropod distribution these Cyclophoridae can be found in South and East Asia, the Indo-Australian Islands, the Philippines to the Pacific Islands and Australia. Taxonomic characters are all the attributes of an organism or a group of organisms that can distinguish it from organisms from different groups. The function of the taxonomy character is as an indicator differentiating and kinship indicators. The taxonomy consists of several characters form, among others, morphological characters, physiological characters, ethological characters, ecological and geographic characters (Freudiger et al., 2021).

The State of Indonesia includes a country in the region Coral Triangle (coral triangles). Therefore, Indonesia has a degree of diversity and high marine life both flora and fauna. Examples of abundant fauna are Mollusc Animals. Animal Molluscs have a soft body no segments, and has a shell of which it is mostly made of calcium carbonate (Sulikowska-Drozd et al., 2022). Taxonomic identification is done to Know the types of Mollusca animals as well as for collection. Based on the background above, the purpose of this research is to determine the types of Mollusca animals around Bungus Beach Padang.

Methodology

This type of research is descriptive, the method used is the method of cruising (Cruise Method) by means of exploring the area around Sako Beach ± 1 km long and ± 8 meters wide. Data collection and Mollusca samples were made with three observations only ups and downs. Types Obtained mollusks documented in photographs and record their morphology, measure aquatic environmental factors with physical and chemical factors such as water temperature, Water

pH, air humidity, Oxygen dissolved or Dissolved Oxygen (DO), and others. Types of animals the mollusks found were identified and then collected at the Biology Laboratory Proklamator Campus III of Bung Hatta University. Animal types the mollusks found were identified refer to *the FAO book The Living Marine Resources of the Western Central Pacific* Volume 1. Factor test chemicals were analyzed in the Chemistry Laboratory Proklamator Campus III of Bung Hatta University. In addition, this research also conducted an interview with local people to get information about research on Sako Beach.

Results

The research location is Sako Beach, Nagari Labuhan Tarok, West Bungus Village, Bungus Teluk Kabung District, Padang City. Sako Beach is one of the tourist attractions in the city of Padang. Sako Beach can be reached within $\pm$ 45 minutes from downtown Padang. Sako Beach is next to Bungus Harbor. Based on the results of the study, the types of Mollusca animals found were in the form of shells consisting of the Gastropod class and the Bivalvia class. The types and number of molluscs found in the form of shells were 31 species with a total of 202 individuals from three observations. The results showed that the most numerous species were from the Bivalvia class with 17 species, while from the Gastropod class there were 14 species. The most common type found was *Soletellina diphos* with 29 people. The few species found were *Tonna dolium*, *Crassostrea iredalei*, *Architectonica perspectiva*, *Cypraea leviathan*, *Murex trapa*, *Trochus maculatus*, *Turbo setosus*, *Meretrix lyrata*, *Barbatia fusca*, *Bufonaria rana*, *Pomacea sp.*, *Phenacolepas sp.* each of which amounted to 1 individual. In detail, the types of Mollusca animal assistance can be seen in Table 1.

Table 1. Results of Identification of Mollusca Animals Around Bungus Padang Beach

Genus	Observation			Number of Individuals
	I	II	III	
<i>Tonna dolium</i>	-	2	-	2
<i>Ellobium aurisjudae</i>	-	1	1	2
<i>Crassostrea iredalei</i>	2	-	-	2
<i>Soletellina diphos</i>	3	10	16	29
<i>Scapharca pilula</i>	-	3	7	10
<i>Sanguinolaria tellinoides</i>	1	2	1	4
<i>Cypraea annulus</i>	3	4	1	8
<i>Nerita albicilla</i>	1	1	-	2
<i>Cypraea vitellus</i>	7	4	4	15
<i>Architectonica perspectiva</i>	-	-	5	5
<i>Cypraea leviathan</i>	-	-	1	1
<i>Murex trapa</i>	-	-	1	1
<i>Trochus maculatus</i>	-	-	3	3
<i>Polinices mammilla</i>	-	3	3	6
<i>Turbo setosus</i>	-	-	1	1
<i>Ruditapes variegatus</i>	2	-	17	19
<i>Anodontia edentula</i>	-	1	2	3
<i>Pharella javanica</i>	1	1	-	2
<i>Scapharca indica</i>	2	4	22	26
<i>Trachycardium subrugosum</i>	1	7	10	18

<i>Meretrix lyrata</i>	-	1	-	1
<i>Barbatia fusca</i>	1	-	-	1
<i>Macra sp.</i>	1	3	5	9
<i>Bufonaria rana</i>	-	1	-	1
<i>Pomacea sp.</i>	-	-	1	1
<i>Phenacolepas sp.</i>	-	1	-	1
<i>Donax trunculus</i>	1	4	2	7
<i>Meretrix lusoria</i>	6	-	2	8
<i>Fimbria fimbriata</i>	-	-	2	2
<i>Meropesta pellucida</i>	-	5	2	7
<i>Circe scripta</i>	2	-	3	5
<i>Number of individuals</i>	34	58	112	202

Discussion

Based on the results of the study, it was found that Mollusca animals were found only in the form of shells from the Bivalvia class and the Gastropod class, totaling 31 species consisting of 17 species from the Bivalvia class and 14 species from the Gastropod class. The most common bivalves were *Soletellina diphos* with 29 individuals, and the least found were *Meretrix lyrata* and *Barbatia fusca* which also totaled 1 individual. The most common mollusc shells found were in the third observation, namely on 28 January 2023 as many as 112 individuals, in the second observation on 26 January 2023 as many as 58 individuals, and the least was found in the first observation on the 24th as many as 34 individuals. This research found only Mollusca shells due to lack of habitat or substrate, community activities that could disturb the habitat or substrate of these Mollusc animals. The statement above is reinforced by the results of interviews with local residents, namely Mr. Afrizal and Mrs. Lili who said that the coral or rocks at Sako Beach are located far out to sea. The beach location is also adjacent to the Bungus Samudra port where there is a possibility of an oil spill which could cause Mollusca resources to decrease. The beach used as a tourist attraction can also disrupt the Mollusca ecology. This is in accordance with the statement that tourism activities can affect aquatic organisms on a beach (Arif & Kurniawan, 2018).

Physics measurements such as air humidity are obtained with an average of 76 g/m³ and water temperature with an average of 31. The average value of the water temperature can be categorized as good for the life of marine organisms. Measurement of water with chemical factors found that the average pH was 7. The results of the pH test were categorized as ideal for aquatic organisms. This was also reinforced by (Mustafa et al., 2022) that generally aquatic organisms can survive with a pH range of 7-8.6. If the pH value is too high or too low, it will affect the resistance of aquatic organisms living in the waters (Tumwesigye et al., 2022). DO with an average of 6.89 ppm which can be categorized well, CO₂ levels with an average of 6.75 ppm, Nitrate with an average of 0.85 ppm, and Phosphate with an average of 0.15 ppm.

Conclusion

From the results of this study, it can be concluded that the identification of the types of Mollusca animals can be known based on the morphology of their shells and can adjust the Mollusca images that have been obtained with identification books. The results of the research are recommended for further researchers to find the types of Mollusca animals as a whole, especially on the beach.

Conflict of Interest

No conflict of interest

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