



Edible Marine Bivalves & Gastropods in Malaysia

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FOREWORD

It is a great pleasure to see this book 'Edible bivalves and gastropods in Malaysia' published. Food security and safety is one of the crucial agenda that is given serious attention by the Ministry of Agriculture and Food Industry.

Malaysia is surrounded by oceans with a coastal area of 42,330 km², a coastline of 4,675 km and 549,500 km² sea area. This marine environment has unique ecosystems namely mangrove, mud flats, sea grasses, coral reef, lagoons and estuaries which provides productive environment for abundant aquatic species.

Apart from fish, there are variety of bivalves and gastropods species to be consumed as a source of protein. Currently, many restaurants introduce shellfish species in their menu which we never come across before.

The authors had compiled a list of edible bivalves and gastropods in Malaysia which is a valuable guidance for safe consumption. To date, this is the first book published in Malaysia on the topic. I hope this book provides important knowledge and reference especially for seafood lovers.

Dr. Azhar Hamzah

Senior Director

Institut Penyelidikan Perikanan

PREFACE

Gastropods and Bivalves are very popular among seafood fans in Malaysia. It is also a second important source of marine protein after fish. However, there is no formal record of the list of edible gastropods and bivalves in Malaysia. There are times when the species is known only to the locals and there are also circumstances in which the same species are given different names in different locations.

According to statistics released by the Department of Fisheries Malaysia, only a few species of gastropods and bivalves are recorded either in the category of capture (wild) or aquaculture. These include abalone, blood cockle, mussels, clams and oyster. This book provides a plethora of first-hand information on the diversity, biology and ecology of edible marine bivalve and gastropods found in Malaysia, profiles about 83 species, providing information on their habitat, distribution, morphology, etc. All in all, we have 40 species of bivalves from 19 family and 33 genus, and 43 species of gastropods from 23 family and 35 genus.

It may not fully covered all the edible species but this is the first step.

Intended primarily for the students and researchers in fisheries science, marine biology and zoology, our book also will be benefited to the public.

Authors

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Mr. Abdul Razak bin Abdul Rahman (photographer), and Mdm. Norhanim binti Ahmad (preparation of the specimens). Credits to Dr. Haslawati Baharuddin (photo of razor clams), Nor Azlina Abd. Rahman (*Melo melo*) and Menggatal Fisheries Station, Sabah (shells of *Isognomon isognomum*).

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Above all, to the Great Almighty, the author of knowledge and wisdom, for his countless love.

We thank you.

Authors

INTRODUCTION

Molluscs is the second-largest phylum of invertebrate animals after the Arthropoda, usually wholly or partly enclosed in a calcium carbonate shell discharged by a delicate mantle covering the body and typically has a "head" and a "foot" region.

Molluscs are one of the organisms that have an important role in ecological functions in various aquatic ecosystems. Molluscs which include Gastropods and Bivalves are one of the phyla of macrozoobenthic that can be used as bioindicators in coastal aquatic ecosystems. In addition to playing a role in the food chain cycle, there are also types of molluscs that have important economic value, such as various types of shellfish and various types of snails. Many gastropods and bivalves are a source of food for many cultures and therefore play an important role in the fishing industries of many countries.

Class Gastropods are generally better known as snails and slug. Gastropods are widely distributed and highly adaptable to diverse environment, such as being able to live on land, fresh water, sea, sandy and muddy substrates. It has the most diverse and largest number of species amongst the mollusc phylum because it manages to occupy a variety of habitats and ecosystems such as seagrass, coral, and mangrove. Gastropods have an economic and ecological role. Economically, Gastropods provide benefits for human life including as food sources of animal protein, handicraft industry materials, and jewellery. While ecologically it plays a role in the food chain that functions as herbivores, carnivores, detritivores and becomes prey for aquatic biota. Gastropods that live in water are generally found as detritivores, where it can convert detritus at low energy levels to higher energy levels.

Bivalvia includes all shellfish that have a pair of hinged shells (Bivalvia means two shells) and live in marine, brackish and freshwater habitats. It has no head, and the mollusc's body consists entirely of a wedge-shaped "foot". Into this group include various shellfish, mussels, clams, cockles, and oyster. However, the variation within the Bivalves is actually very wide. Bivalves are a group of invertebrate organisms that are found and live in intertidal areas. These animals have special adaptations that allow them to survive in areas that are subject to physical and chemical stress such as occurs in the intertidal area. These organisms also have adaptations to withstand currents and waves. However, bivalves do not have the ability to move quickly (motile), making them very easy to catch (harvest) organisms. Bivalves are very useful in human life since ancient times, their meat is eaten as a source of protein. They make up a major share of the marine invertebrate seafood industry.

Bivalvia should not be eaten if the water in which it inhabit is contaminated by chemicals or disease microorganisms. At times, microscopic organisms known as

dinoflagellates bloom rapidly in the waters near the coast. Toxic substances produced by dinoflagellates will accumulate in shellfish that use them as food. It does not have any effect on shellfish but this toxin can attack the nervous system of humans who eat the shellfish. There are times when it causes death to humans.

Many species of molluscs are eaten worldwide, either cooked or raw. Some mollusc species are commercially exploited and shipped as part of the international trade in shellfish; other species are harvested, sold and consumed locally. Some species are collected and eaten locally but are rarely bought and sold. There's a good reason why humans have been eating shellfish like clams and mussels for at least 165,000 years: these molluscs are nutritional powerhouses high in protein, minerals and healthy fats.

They have a nice, salty taste. They have a fishy taste but it is not gross nor is it overpowering. Their texture is difficult to describe, but they usually are chewy, and depending on how they are prepared, can come off as slightly rubbery.

But, there are also a negative side of it. Not all shellfish are edible. Cone snails, also known as cone shells, are a venomous group of molluscs that contain a hollow proboscis with a venom-soaked radula tooth (similar to a barbed harpoon), which is ejected and then discarded after use. Related to its habitat and diet, inevitably, it is likely to be infested by bad microbes. To avoid foodborne illness, it is necessary to fully cooked the shellfish without overcooking it.

The most common marine habitats in Malaysia



Shoal/sandy beach (Middle Bank, Penang)



Rocky beach (Pulau Besar, Johor)



Artificial structure (Penang bridge)



Seagrass (Middle Bank, Penang)



Coral reef (Pulau Redang, Terengganu)

Scientific Classification

Kingdom : Animalia

Subkingdom : Eumetazoa

Superphylum : Lophotrochozoa

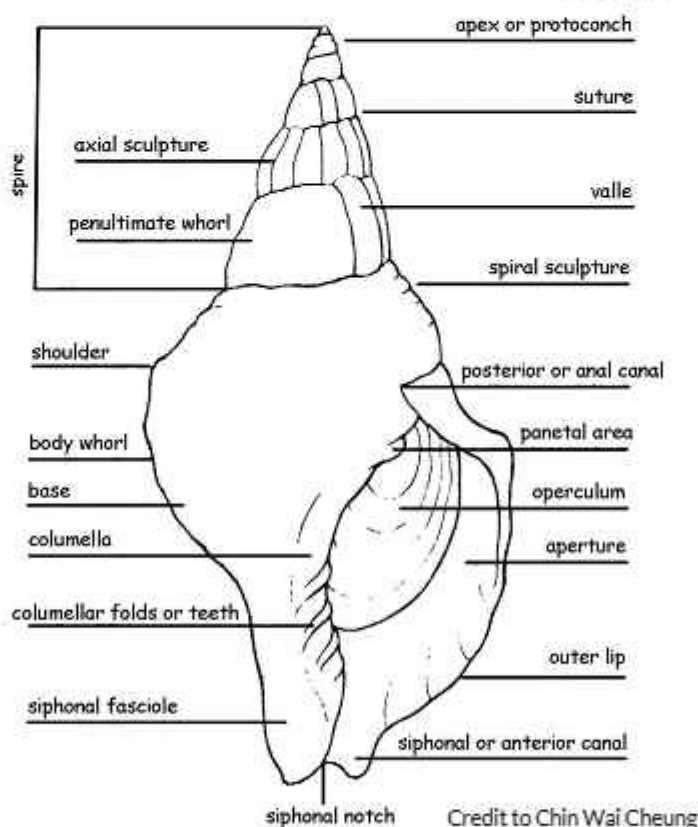
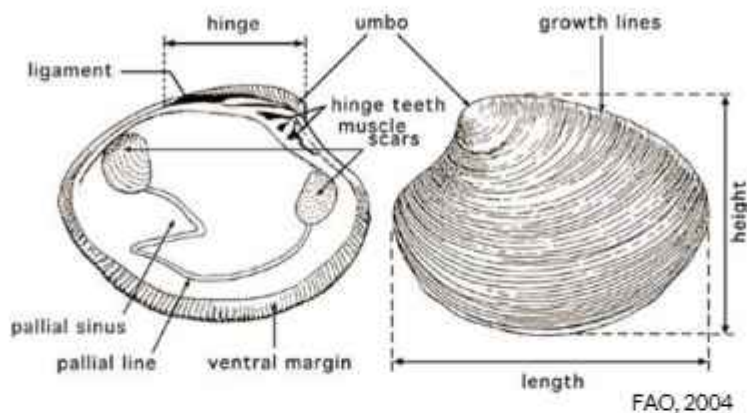
Phylum : Mollusca

Subphylum : Conchifera

Class : **Bivalvia, Linnaeus 1758**

Class : **Gastropoda, Cuvier 1795**

General features of the bivalve and gastropod shell



The background is a dense, repeating pattern of various seashells. The shells are rendered in a flat, illustrative style with a limited color palette of browns, tans, and off-whites. The shells vary in shape and size, including scallops, bivalves, gastropods, and nautilus-like shells. Some shells are shown in cross-section or open, revealing their interiors. The overall effect is a textured, organic background.

BIVALVIA

Arcidae

*Anadara**antiquata*

Scientific Name : *Anadara antiquata* (Linneaus, 1758)

Common Name : Hairy Cockle/Scapha Ark

Local Name : Kerang bulu / Kembayanan.

Size : 55 mm

Sample Location : Teluk Salut, Sepangar, Sabah

Characteristic : Shell inequivalve, solid, inequilateral, obliquely ovate and elongate in outline, with an extended posteroventral part. Periostracum slightly brownish with bristles (hairy). Oval-oblique with the umbones nearer the larger front end. Ribs numerous, squarish and mostly smooth.

Habitat : Sandy area, shallow waters

Distribution : Indo-Pacific





Hairy cockles

Credit to Mohd Saleh Md Taha

Arcidae

*Barbatia**foliata*

Scientific Name : *Barbatia foliata* (Forsskal, 1775)

Common Name : Hairy rib ark

Local Name : Kerang bulu / Kembayanan

Size : 40 mm

Sample Location : Kg. Pulau Sayak, Kedah.

Characteristic : Shell white, irregularly squarish and compressed laterally (hence thin). Umbones near each other. Periostracum weak and light-brown.

Habitat : Among intertidal rocks and crevices in shallow waters

Distribution : Indo-Pacific



Arcidae

*Tegillarca**granosa*

Scientific Name : *Tegillarca granosa* (Linneaus, 1758)

Common Name : Blood cockle, Granular Ark

Local Name : Kerang

Size : 30 mm

Sample Location : Kuala Juru, Penang

Characteristic : Shell equivalve, thick and solid, ovate, strongly inflated with distinct ribs bearing small, rounded beads. Umbones central and facing each other. No byssal gape. Interior white, exterior grey to brownish.

Habitat : Intertidal zone, burrowed down into sand or mud

Distribution : Indo-Pacific





Blood cockles

Cardiidae

*Hippopus**hippopus*

Scientific Name : *Hippopus hippopus* (Linnaeus, 1758)

Common Name : Horse Hoof Clam or Strawberry Clam

Local Name : Kima

Size : 99 mm

Sample Location : Pulau Mabul, Sabah

Characteristic : Large thick, robust valves with strawberry blotches in the shape of bands on the exterior, elongated triangular in shape. Umbones pointed backward. 13 - 14 moderately connex radial ribs.

Habitat : Shallow waters of fringing, barrier reefs, and seagrass beds.

Distribution : Indo-Pacific



Cardiidae

*Tridacna**crocea*

Scientific Name : *Tridacna crocea* (Lamarck, 1819)

Common Name : Crocus Giant Clam or Boring Giant Clam

Local Name : Kima

Size : 93 mm

Sample Location : Pulau Mabul, Offshore Sabah

Characteristic: Buried deep in living and dead coral. The two-part shell has shallow fluted sculpturing on the surface. The shell is also typically grayish-white, but is sometimes tinted with yellow, orange or pinkish-orange particularly on its inner surface. They're typically strongly inflated, being rather fat near the hinge.

Habitat : Shallow water near living reef

Distribution : Indo-Pacific



Cardiidae

*Tridacna**squamosa*

Scientific Name : *Tridacna squamosa* (Lamarck, 1819)

Common Name : Fluted Giant Clam or Scaly Clam

Local Name : Kima

Size : 160 mm

Sample Location : Pulau Mabul, Offshore Sabah

Characteristic : Thick elongate shell with conspicuous leaf-like fluted scales on its radial ridges. The valves can be orange, pink, yellow or white. It has wide byssal opening behind umbones through which byssus protrudes. 4 - 12 well rounded, raised radial ribs expand rapidly in width from the umbo to edge of each valve.

Habitat : Intertidal areas on corals

Distribution : Tropical Indo-Pacific





Giant clam at it natural habitat

Cyrenidae

*Geloina**expansa*

Scientific Name: *Geloina expansa* (Mousson, 1849)

Common Name: Broad Geloina, Mangrove clam

Local Name: Lokan

Size: 60 mm

Sample Location: Kedah

Characteristic: Thick and heavy, subspherical shell. Radial growth ridges on the exterior. Has a light-yellow periostracum.

Habitat: Brackish to almost fresh water areas of mangrove swamps.

Distribution: Indo-West Pacific



Donacidae

Donax

faba



Scientific Name : *Donax faba* (Gmelin, 1791)

Common Name : Pacific Bean Donax

Local Name : Remis

Size : 20 mm

Sample Location : Pantai Pulau Sayak, Kedah

Characteristics : Small size and wedged shaped, equivalve but inequilateral with the anterior side short and straight. Colours vary from brown to grey, often seen with brownish to purple radial rays.

Habitat : Intertidal, on sand and mud. Most common in wave-beaten areas. Confined on beaches with coarse, poorly-sorted sediments.

Distribution : Indo-West Pacific



Glaucnomidae

Glaucnome

virens



Scientific Name : *Glaucnome virens* (Linnaeus, 1767)

Common Name : Greenish glaucnomomya

Local Name : Biji Nangka

Size : 72 mm

Sample Location : Bt. Lanchang Market, Penang

Characteristic : Shells are slightly elongated and smooth outside, right valve has two jutting cardinal teeth with only one in the left valve.

Habitat : Shallow waters, mudflats. It is embedded. Also found in nipa palm swamps.

Distribution : Indo-West Pacific



Isognomonidae

*Isognomon**ephippium*

Scientific Name : *Isognomon ehippium* (Linnaeus, 1758)

Common Name : Saddle tree oyster

Local Name : Sempeng/ siput bibit

Size : 75 mm

Sample Location : Kuala Setiu, Terengganu

Characteristic : Shell variable, irregularly rounded in outline, with height about equal to length. Has comb-like teeth in the hinge with small brown ligaments between them, the interior of the shell appears pearly.

Habitat : Occurs intertidally in mangrove areas and lagoons, often found attached to rocks and tree roots

Distribution : Indo-West Pacific



Isognomonidae***Isognomon******isognomum***

Scientific Name : *Isognomon isognomum* (Linnaeus, 1758)

Common Name : Wader Tree Oyster

Local Name : Siput bibit

Size : 160mm

Sample Location : Menggatal Fisheries Station, Sabah

Characteristic : Somewhat hammer-shaped, long anterior wing, broad hinge with ligamental pits. Exterior brownish, usually covered with growth lines. Lustrous interior.

Habitat : Intertidal and shallow subtidal waters up to 20 m, attached to hard substrates

Distribution : Indo-Pacific



Mactridae

*Lutraria**rhynchaena*

Scientific Name : *Lutraria rhynchaena* (Jonas, 1844)

Common Name : Scoop trough shell / snout otter clam

Local Name : not available

Size : 100 mm

Sample Location : Kg. Air Seafood Restaurant, Kota Kinabalu, Sabah

Characteristics : Valves are thin, equivalve, transverse or oblong, gaping at both ends and dark brown in colour. Distinctive abductor scar and pallial line.

Habitat : Muddy sand flats below low tide level; shallow water.

Distribution : Eastern Indian Ocean



Margaritidae

*Pinctada**chemnitzii*

Scientific Name : *Pinctada chemnitzii* (Philippi, 1849)

Common Name : Tiled Pearl Oyster

Local Name : Sapanda / Tiram Mutiara

Size : 80 mm

Sample Location : Pasar Tamu, Kudat, Sabah

Characteristic: strong inner shell layer composed of nacre, also known as "mother of pearl".

Habitat : Intertidal on rock

Distribution : Tropical Indo-Pacific



Margaritidae

*Pinctada**margaritifera*

Scientific Name : *Pinctada margaritifera* (Linnaeus, 1758)

Common Name : Black- Lip Pearl Oyster

Local Name : Sapanda / Tiram Mutiara

Size : 80 mm

Sample Location : Pasar Tamu, Kudat, Sabah

Characteristic : Externally the shell is dark grayish brown or green with ribs of scaly periostracum. Interior a beautiful pearly luster with a black edge. A distinctive feature of the species is that the hinge has no teeth.

Habitat : lagoon, bay and sheltered reef

Distribution : Indo-Pacific to Red Sea



Margaritidae***Pinctada******maxima***

Scientific Name : *Pinctada maxima* (Jameson, 1901)

Common Name : Silverlip Pearl Oyster

Local Name : Sapanda / Tiram Mutiara

Size : 110 mm

Sample Location : Pasar Tamu, Kudat, Sabah

Characteristic : Shell rather thick and large. Hinge completely devoid of teeth. The exterior shell colour uniformly fawn, sometimes with radial stripes of darker spots in umbonal region; then, ground colour in that region green, dark brown, or purple. Internal nacreous area highly lustrous, silvery with a variably extended golden border. Non-nacreous margin clear, of plain horny colour.

Habitat : found on reefs

Distribution : Indo-West Pacific



Mytilidae

*Arcuatula**senhousia*

Scientific Name : *Arcuatula senhousia* (Benson, 1842)

Common Name : Horse Mussel or Asian Date Mussel

Local Name : Siput Kabong / Siput Rantai

Size : 26 mm

Sample Location : Sg. Limbang, Sarawak

Characteristics : Shell small-sized, thin and fragile, somewhat translucent, roughly trigonal ovate in outline, with a moderately long and rather high in shape. Outer surface of valves smooth's, with numerous concentric growth lines and a few small radial grooves in front of the umbones. Shell exterior is glossy, yellowish green to olive-brown, typically patterned with about 15 narrow, tenuous, reddish brown stripes.

Habitat : Intertidal waters, muddy to sand bottom, also found occuring in clusters entangled in their own byssus with the mud.

Distribution : Indo-West Pacific, Northern Atlantic and Mediterranean



Mytilidae***Modiolus******philippinarum***

Scientific Name : *Modiolus philippinarum* (Hanley, 1843)

Common Name : Phillipine Mussel

Local Name : Siput Kabong / Siput Angkut-Angkut

Size : 50 mm

Sample Location : Teluk Merudu, Sabah

Characteristics : Shells are thin but solid, swollen, elongate-ovate and roughly trapeziform. Yellowish brown in colour with a purplish tinge in the interior and have a weak, smooth hinge line without teeth or crenulations. Anterior adductor scar present.

Habitat : On muddy and gravely mudflats

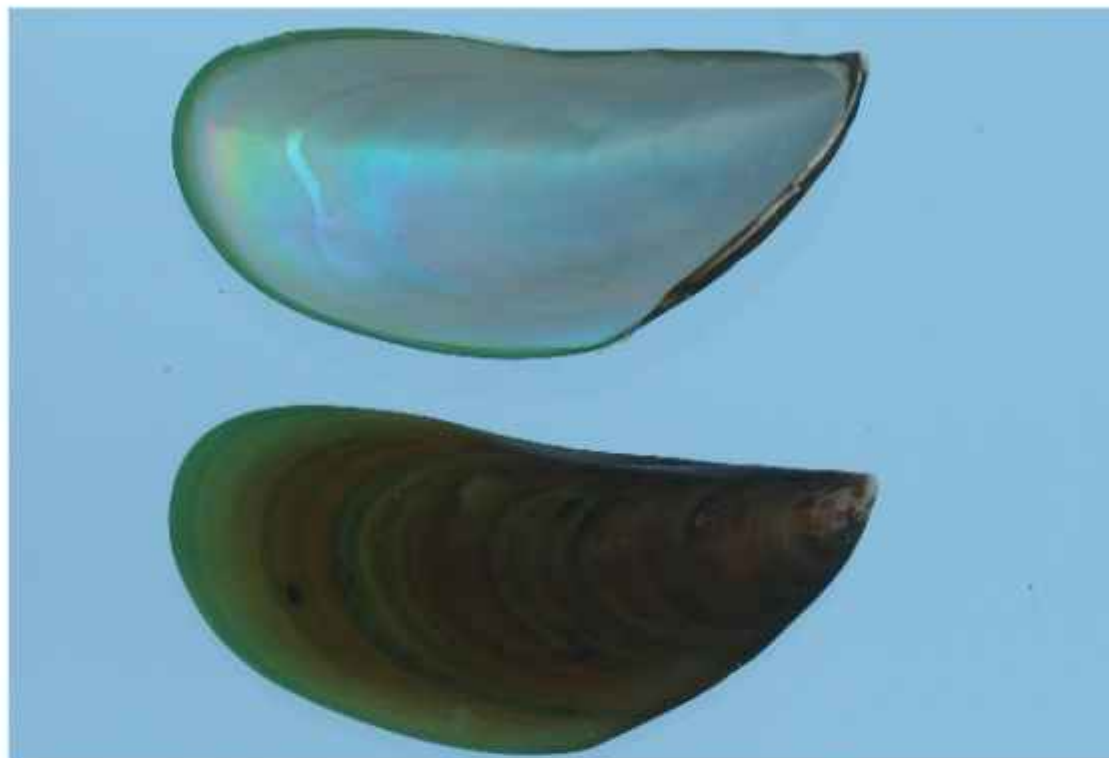
Distribution : Indo-Pacific



Mytilidae

Perna

viridis



Scientific Name : *Perna viridis* (Linnaeus, 1758)

Common Name : Green Mussel

Local Name : Siput Sudu / Kupang

Size : 70 mm

Sample Location : Sg. Sebatu, Melaka

Characteristics : Shell thin and smooth, single tooth in the right valve near the umbo. Outer surface nearly smooth apart from concentric growth marks and faint radial lines. Young clams often all bright green, older clams usually brownish edged in green. The animal attaches to hard surfaces with byssus threads, usually in clusters of many individuals

Habitat : Shallow waters, commonly found byssally attached to various hard objects or substrates in protected bays and estuaries

Distribution : Indo-Pacific and Western Central Atlantic





Cultured green mussel

Ostreidae

Dendostrea

folium



Scientific Name : *Dendostrea folium* (Linnaeus, 1758)

Common Name : Foliate Oyster or Leaf oyster

Local Name : Tiram

Size : 45 mm

Sample Location : Kg. Kelibang, Langkawi, Kedah

Characteristic : Right valve lilac to dark purple externally, left valve white with thin purple stripes. Rib tops rounded and bearing obsolete hyote spines at some growth increments. Interior of the shell lustrous white with iridescent bluish green patches particularly along ridges formed by the ribs. Adductor muscle scar either reniform or crescentic and the same colour as the interior of the shell.

Habitat : On rocks or sea whip stems. Common in mangrove areas.

Distribution : Indo-West Pacific



Ostreidae

Magallana

belcheri



Scientific Name : *Magallana belcheri* (G. B. Sowerby II, 1871)

Common Name : Mangrove Oyster

Local Name : Tiram

Size : 90 mm

Sample Location : Bt. Lintang, Kedah

Characteristics : Shell oblong; margin narrow anteriorly and broad posteriorly; thick lower valve; thin, flat, opercular upper valve; white and glossy inner valves; heart-shaped and pearly white muscle scar.

Habitat : In low tide zone of estuaries and mangroves.

Distribution : Indo-Pacific



Ostreidae

Magallana

bilineata



Scientific Name : *Magallana bilineata* (Röding, 1798) (Orig. name: *Crassostrea iredalei*)

Common Name : Cupped Oyster or Slipper Oyster

Local Name : Tiram

Size : 80 mm

Sample Location : Sg. Merchang, Terengganu

Characteristics : Shells are inequivalve: upper valve is small, thin, flat and scaly at the margins whereas the lower valve is slightly concave, the hinge is toothless and the inside margin is smooth. The interior of the shell is chalky white with a purplish adductor muscle scar on both valves.

Habitat : Estuaries and inlets attached to solid material such as rocks or pilings.

Distribution : Indo-Pacific





Shucked oysters

Ostreidae

Saccostrea

cucullata



Scientific Name : *Saccostrea cucullata* (Born, 1778)

Common Name : Rock Oyster / Hooded Oyster / Curly Oyster.

Local Name : Tiram Batu

Size : 40 mm

Sample Location : Kuala Setiu, Terengganu

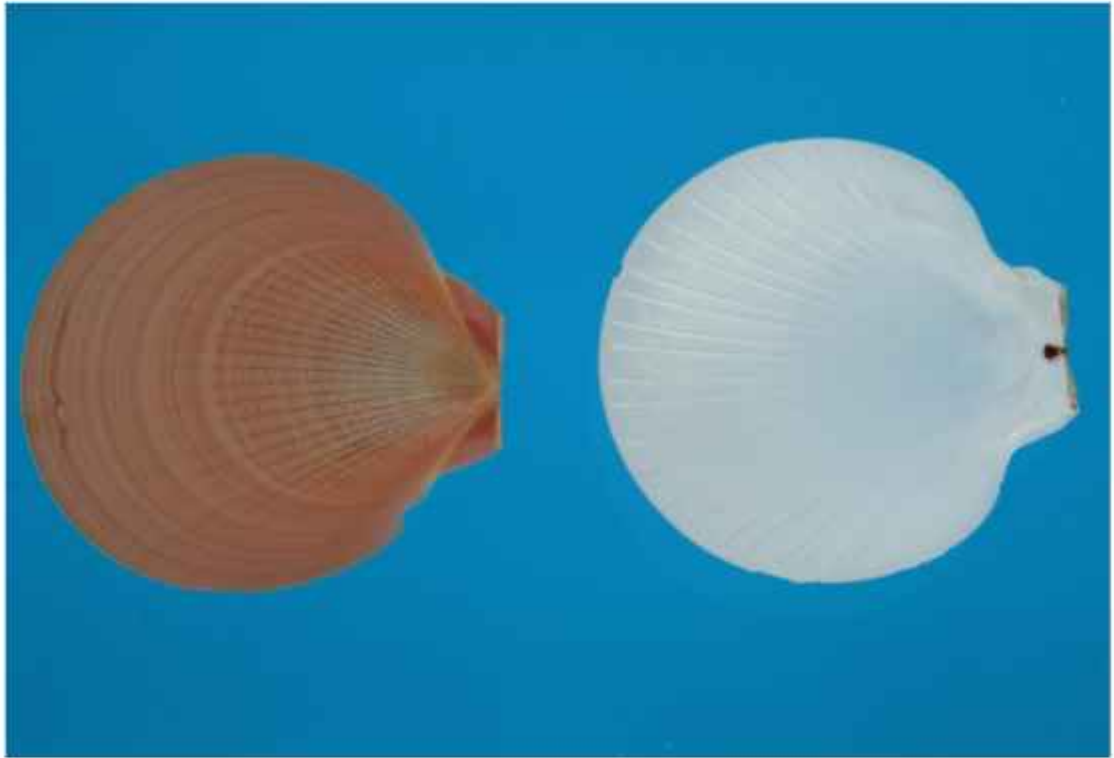
Characteristic : Shells are chalky, inequivalve, inequilateral; upper valve thin and flat while the lower valve is deep or cupped shape. Shape oyster-like, very variable, depending on the substratum and biotope with outline irregular, almost circular to oval. Sculpture smooth or with strong radial ribs or even with spines.

Habitat : Shallow water, attached to subtidal rocks and mangrove tree roots in estuarine areas.

Distribution : Indo-Pacific and Eastern Atlantic.



Pectinidae

*Amusium**pleuronectes*

Scientific Name : *Amusium pleuronectes* (Linnaeus, 1758)

Common Name : Asian moon scallop

Local Name : Kekapis

Size : 75 mm

Sample Location : Sarawak

Characteristic : Shell thin, saucer shaped valves, delicate smooth shells are very compressed and have almost equal ears. There are about 22-34 radial ribs on the inside of each valve. Right valve is white and the left dull pink with purplish radial lines and reddish brown concentric lines.

Habitat : Shallow waters with sand and muddy bottoms

Distribution : Indo-West Pacific



Pharidae

*Cultellus**attenuatus*

Scientific Name : *Cultellus attenuatus* (Dunker, 1862)

Common Name : Razor Clam

Local Name : Siput Pahat, Siput Selok

Size : 60 mm.

Sample Location : Sarawak

Characteristic: shell state is equivalent to elongated shape, anterior posterior border rounded, ventral horizontal, and gaping at both ends. The inner surface of the shell is white.

Habitat : Shallow sea with bottom sandy mud or silt.

Distribution : Indo-Pacific



Pharidae

*Sinonovacula**constricta*

Scientific Name: *Sinonovacula constricta* (Lamarck, 1818)

Common Name: Razor clam

Local Name: Siput Pahat

Size: 85 mm

Sample Location: Batu Lanchang Market, Penang.

Characteristic : Elongate, narrow, rather fragile shell with bluntly rounded gaping ends and broad valves with the narrow hinge. Smooth with concentric striations. Small beaks near center. Yellowish periostracum.

Habitat: Burrows in the intertidal flats, estuarine and mangrove areas.

Distribution : Indo-West Pacific



Pholadidae

*Pholas**orientalis*

Scientific Name : *Pholas orientalis* (Gmelin, 1791)

Common Name : Oriental Angel Wing

Local Name : Siput Mentarang

Size : 100 mm

Sample Location : Kuala Perlis, Perlis

Species Description : Two thin elongated fragile shells hinged on a flexible ligament which located in the sagittal plane. Exterior is white with radial rows of tiny beads on the anterior half. Under the umbo, there is a pair shelly projections.

Habitat : Burrows in peat and clay in intertidal areas and offshore.

Distribution : Indo-West Pacific



Pinnidae

*Atrina**vexillum*

Scientific Name : *Atrina vexillum* (Born, 1778)

Common Name : Indo Pacific Pen Shell / Flag Pen Shell

Local Name : Peha Ayam

Size : 300 mm

Sample Location : Bt. Lanchang Market, Penang ; Kg. Pulau Sayak.

Characteristic : Large strong shell, triangular in shape with two of its sides well rounded. Valves are most inflated towards the centre, the surface being nearly smooth or radially ribbed and ribs may be scaly. Inside lining is iridescent and there is a large muscle scar in the broad rear half of each valve. Colour reddish brown to black.

Habitat : Subtidal, sandy bottom.

Distribution : Tropical Indo-Pacific



Pinnidae

Pinna

bicolor



Scientific Name : *Pinna bicolor* (Gmelin, 1758)

Common Name : Bicolor Pen Shell

Local Name : Siput Kemudi

Size : 300 mm

Sample Location : Sabah.

Species Description : Thin shelled, fragile and broadly to attenuate triangular in shape, posterior margin truncate or convex-rounded; valves translucent and light horn to dark purple brown in colour with 8-17 barely visible radiating ribs, spines only in the posterior region, and fine concentric growth striae; nacreous area iridescent.

Habitat : Subtidal, sandy bottom.

Distribution : Indo-West Pacific



Pteriidae

*Pteria**penguin*

Scientific Name : *Pteria penguin* (Röding, 1798)

Common Name : Peguin Wing Oyster

Local Name : Siput Cabang

Size : >180 mm

Sample Location : Semporna, Sabah

Characteristic : Shell solid, reaching a very large size, obliquely ovate in outline, with posterior ear drawn out into a narrow extension or wing. Exterior brownish black. Interior bright pearly luster.

Habitat : Found attached to any substrate by mean of byssus. In lagoon, coral reef, rivers etc.

Distribution : Indo-West Pacific



Solenidae

Solen

ceylonensis



Scientific Name : *Solen ceylonensis* (Leach, 1814)

Common Name : Razor Clam

Local Name : Ambal, Siput Buluh

Size : 110 mm

Sample Location : Pantai Morib, Selangor, Sarawak Waters.

Characteristic : Transversely elongated, sub-cylindrical, equivalve, gaping at both ends, umboes terminal close to anterior end.

Habitat : Found buried deep in the sandy mud flats in a perpendicular position.

Distribution : Indo-West Pacific





Razor Clam

Credit to Dr. Haslawati Baharudin

Spondylidae

Spondylus

versicolor



Scientific Name : *Spondylus versicolor* (Schreibers, 1793)

Common Name : Golden Thorny Oyster

Local Name : Unknown

Size : 93 cm

Sample Location : Ocean Seafood Restaurant, KK, Sabah ; Lahad Datu

Characteristic : A variety of body colour with many long spines / thorny.

Habitat : Shallow waters cemented to hard substrate near coral reefs.

Distribution : Indo-West Pacific



Tellinidae

*Tellina**sp.*

Scientific Name: *Tellina* sp.

Common Name: Sunrise Tellin

Local Name: Lala

Size: 50 mm

Sample Location: Kg. Air Seafood Restaurant Kota Kinabalu, Sabah

Characteristic: Shells are thin, delicate, sub-equivalve, rounded anteriorly, compressed and brownish in colour with purplish radial rays, interior appear purplish, pallial sinus is large and the cardinal teeth is small

Habitat : Intertidal sandy flats, shallow water



Veneridae

Callista

sp.



Scientific Name : *Callista* sp.

Common Name : Venus Clam

Local Name : Siput Gayam

Size : 46 cm

Sample Location : Bt. Lancang, Penang; Pulau Sayak, Kedah

Characteristics : The two-part shells are thick. Some have ridges or various patterns. Has porcelain-like inner shell layer, a complex tooth structure in the hinge, well-developed escutcheon and, and a well-developed pallial sinus.

Habitat : Sandy mud; shallow sand flats



Veneridae

*Chamelea**sp.*

Scientific Name : *Chamelea sp.*

Common Name : Chicken Venus

Local Name : Kepah

Size : 50 mm

Sample Location : Kg. Pulau Sayak, Kedah

Characteristics : Thick shell with radial growth ridges.

Habitat : Shallow water sandy mud bottom



Veneridae

*Gafrarium**tumidum*

Scientific Name : *Gafrarium tumidum* (Röding, 1798)

Common Name : Ribbed Venus Clam or Tumid Venus

Local Name : Kerakas

Size : 35 mm

Sample Location : Pasir Sitompok Station, Kuala Penyu, Sabah

Characteristics : Shell circular with a straight portion on one side. There are numerous radial, irregular-sized, rounded and low beaded ribs. Colour is very light brown externally, while interior has purple blotches on the posterior end and on the posterior lateral tooth

Habitat : Shallow sandy area

Distribution : Indo-Pacific and Mediterranean Sea



Veneridae

Meretrix

meretrix



Scientific Name : *Meretrix meretrix* (Lineaus, 1758)

Common Name : Meretrix Venus or Asiatic Hard Clam

Local Name : Kepah

Size : 50 mm

Sample Location: Beaufort, Sabah; Bt. Lanchang Market, Penang.

Characteristics : Shell is strong and glossy, ovate with the umbones usually near the middle but sometimes pointing slightly towards the anterior end. Colour variable from light to dark brown usually with a suffusion and 1 or 2 rays of reddish brown. Interior is ivory or light purplish.

Habitat : intertidal areas in sand and mud

Distribution : Indo-West Pacific



Veneridae

*Meretrix**sp.*

Scientific Name : *Meretrix* sp.

Common Name : Venus Clam

Local Name : Danus / Kunau

Size : 65 mm

Sample Location : Tanah Merah, Kudat, Sabah

Characteristics : Shell is equivalve, trigonal shell, hard and thick. Shell exterior is smooth and colour varies with radial band

Habitat : Coastal waters; shallow sandy area



Veneridae

*Paphia**crassisulca*

Scientific Name : *Paphia crassisulca* (Lamarck ,1818)

Common Name : Sulcose Venus

Local Name : Siput Retak Seribu

Size : 40 mm

Sample Location : Pulau Sayak, Kedah

Characteristic : Shell oval, glossy and solid brownish tan in colour. Numerous concentric, smooth and narrow ridges are found on the shell with 4 dark radial rays extending outwards from the umbo.

Habitat : Shallow waters, sandy mud.

Distribution : Indo-Pacific



Veneridae

*Paratapes**textilis*

Scientific Name : *Paratapes textilis* (Gmelin, 1791)

Common Name : Textile Venus

Local Name : Siput Retak Seribu

Size : 35 mm

Sample Location : Sebatu, Melaka

Characteristic : Appears similar to the undulating venus, but the colour is lighter and the netting pattern is much more wider.

Habitat : Shallow waters ; sandy mud flats

Distribution : Indo-West Pacific and Mediterranean Sea



Veneridae

*Paratapes**undulatus*

Scientific Name : *Paratapes undulatus* (Born, 1778)

Common Name : Undulating Venus

Local Name : Siput Retak Seribu

Size : 40 mm

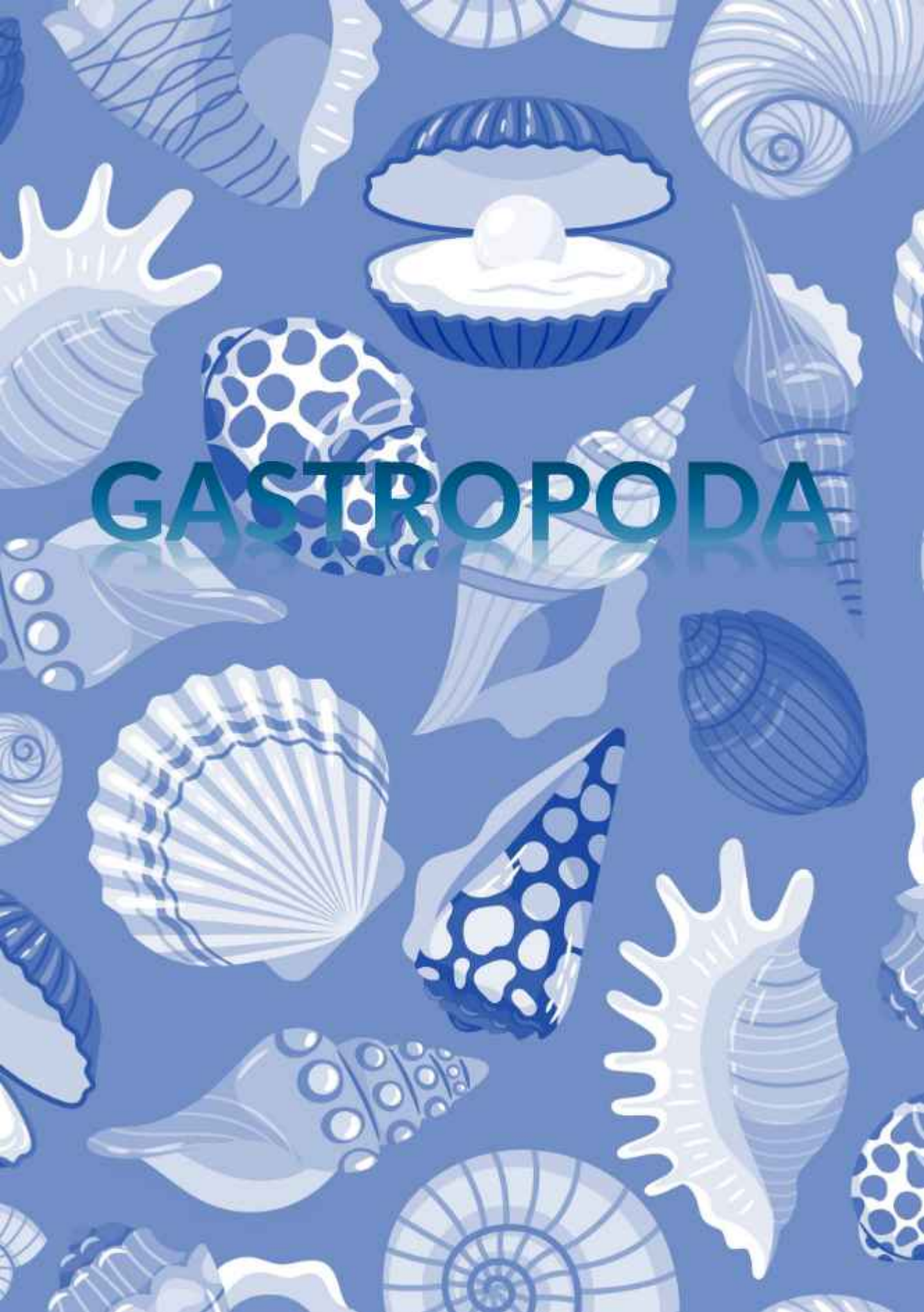
Sample Location : Batu Lancang, Penang

Characteristic : Shell is compressed laterally, elongate, smooth and glossy with a dense netting of brown lines. Interior is whitish.

Habitat : Shallow water, sandy mud substratum.

Distribution : Indo-West Pacific



The background is a dense, repeating pattern of various seashells. The shells are rendered in different shades of blue, from light sky blue to deep navy blue, and some are white with blue patterns. The patterns on the shells include stripes, spirals, polka dots, and wavy lines. The shells are of various sizes and orientations, creating a textured, underwater feel.

GASTROPODA

Babyloniidae

Babylonia

areolata



Scientific Name : *Babylonia areolata* (Link, 1807)

Common Name : Areola Babylon

Local Name : Siput Manis

Size : 50 mm

Sample Location : Ocean Seafood Restaurant, Kota Kinabalu, Sabah

Species Description : Has thick, glossy plump shells with dark brown blotches, large oval operculum with outer lip and sharp edge.

Habitat : Shallow waters on muddy bottom.

Distribution : Indo-West Pacific and Southwest Atlantic



Bursidae

*Tutufa**rubeta*

Scientific Name : *Tutufa rubeta* (Linnaeus, 1758)

Common Name : Reddish Frog Shell

Local Name : Unknown

Size : 81 mm

Sample Location : Pulau Mabul, Sabah

Characteristic : Fairly large, robust and elongate shell with a round, flaring aperture of glossy reddish orange bearing many slot of white teeth.

Habitat : Intertidal reef, offshore.

Distribution : Indo-Pacific



Cassidae

Cassis

cornuta



Scientific Name : *Cassis cornuta* (Linnaeus, 1758)

Common Name : Horned Helmet

Local Name : Kepala Kambing; Tapak Gajah

Size : 145 mm

Sample Location : Pulau Mabul, Sabah

Characteristic : Very solid, heavy, rotund shell with large, horn-like knobs and a wide, flat base. Massive glossy orange underside. White teeth prominent on both apertural lips. Last whorl with blunt spines at the shoulder and 2 minor rows below that. Many small knobs present in young specimens.

Habitat : Sandy bottom up to 6 - 20 meter.

Distribution : Indo-Pacific



Charoniidae

Charonia

tritonis



Scientific Name : *Charonia tritonis* (Linnaeus, 1758)

Common Name : Triton Trumpet or Giant Triton

Local Name : Unknown

Size : 100 mm

Sample Location : Semporna, Sabah

Characteristic : A distinctive shell with a pointed spire and a large body whorl. Exterior creamy with darker brown dashes and chevrons. Aperture large, orange, and with banded lip.

Habitat : Shallow coral reef areas.

Distribution : Indo-Pacific



Cypraeidae

Cypraea

tigris

Scientific Name : *Cypraea tigris* (Linnaeus, 1758)

Common Name : Tiger Cowrie

Local Name : Saguk, Gerus-gerus

Size : 83 mm

Sample Location : Pulau Mabul, Sabah

Characteristic : Globose & glossy shells. Base is whitish in colour with narrow aperture & toothed lips. Scattered irregular brown spots on the bluish grey top surface.

Habitat : Shallow waters around coral reef area and intertidal.

Distribution : Indo-Pacific



Fasciolaridae

*Latirus**polygonus*

Scientific Name : *Latirus polygonus* (Gmelin, 1791)

Common Name : Barclay's Latirus

Local Name : Unknown

Size : 60 mm

Sample Location : Sabah

Characteristics : High spired shell, up to 7 cm, with angular nodules on spiral ridges; lip with fine teeth and ridges. Colour cream to pale with darker markings, or dark brown. Interior white.

Habitat : Eulittoral and deeper rocky areas

Distribution : Indo-West Pacific



Fascioliidae

*Pleuroploca**trapezium*

Scientific Name : *Pleuroploca trapezium* (Linnaeus, 1758)

Common Name : Trapezium Horse Conch

Local Name : none

Size : 150 mm

Sample Location : Pasar Tani, Kota Belud

Characteristics : Shell large and solid with strong, blunt knobs on the shoulder. Colour light brown with numerous dark spiral lines, outer lib sharp. Aperture interior whitish with fine brown spiral lines.

Habitat : Shallow water, seagrass bed.

Distribution : Indo-Pacific



Ficidae

*Ficus**gracilis*

Scientific Name : *Ficus gracilis* (G. B. Sowerby I, 1825)

Common Name : Graceful Fig Shell

Local Name : Unknown

Size : 135 mm

Sample Location : Pasar Tamu, Kudat, Sabah

Characteristic : Shell is very light, thin, fragile and intricately patterned with numerous, short, wavy, axial streaks or crowded light brown strips. The aperture runs the entire length of the shell.

Habitat : Offshore up to 100m; live under sand

Distribution : Indo-West Pacific



Haliotidae

*Haliotis**asinina*

Scientific Name : *Haliotis asinina* (Linnaeus, 1758)

Common Name : Donkey Ear Abalone

Local Name : Siput Mentiah

Size : 80 mm

Sample Location : Semporna, Sabah

Characteristic : It has a soft body surrounded by a mantle, an anterior head and a large muscular foot. The shell has a distinctly elongated contour, in clear resemblance to a donkey ear and presents 5 to 7 ovate open holes on the left side of the body whorl. The color may variate between green olive or brown externally and the interior surface of the shell is strongly iridescent, with shades of pink and green.

Habitat : Shallow water reef.

Distribution : Indo-West Pacific





Abalones

Muricidae

*Chicoreus**brunneus*

Scientific Name : *Chicoreus brunneus* (Link, 1807)

Common Name : Burnt Murex or Adusta Murex

Local Name : Labuan Haji

Size : 75 mm

Sample Location : Pulau Mabul, Sabah

Characteristic : Colour brownish black, aperture white. One large node between the varices, which bear short, black fronds.

Habitat : Sand/rock substrate near coral reefs, shallow water.

Distribution : Indo-Pacific



Muricidae

*Chicoreus**capucinus*

Scientific Name : *Chicoreus capucinus* (Lamarck, 1822)

Common Name : Mangrove Murex

Local Name : Tekoyong

Size : 40 - 50 mm

Sample Location : Kg. Peringan, Kuala Penyu, Sabah

Characteristic : Shell thick with sculptured ridges down the length. Dull to dark brown or blackish in colour. Found clinging to the bases of mangrove trees. The fronds on the varices are very reduced. Shell opening circular with 'teeth' on the inner edge. Aperture are dull grey to purplish in colour.

Habitat : Intertidal mangrove swamp.

Distribution : Western Central Pacific



Muricidae

*Chicoreus**ramosus*

Scientific Name : *Chicoreus ramosus* (Linnaeus, 1758)

Common Name : Ramose Murex

Local Name : Unknown

Size : 127 mm

Sample Location : Offshore Lahad Datu, Sabah

Characteristic : Large, solid, very rugged and heavy shell. the aperture being white within but usually with a narrow rose columella. The varices have strong short 'frilly' or leafy spine, and one of its most striking ornamentations are the conspicuous, leaf-like, recurved hollow digitations.

Habitat : Shallow reefs, offshore.

Distribution : Indo-West Pacific



Muricidae

*Murex**pecten*

Scientific Name : *Murex pecten* (Lightfoot, 1786)

Common Name : Venus comb

Local Name : Siput Duri

Size : 92 - 100 mm

Sample Location :

Characteristic : Solid, yellowish shell, up to 15 cm, with a long siphonal canal and numerous long, slightly curved spines

Habitat : Shallow soft substrata

Distribution : Indo-Pacific



Muricidae

*Murex**trapa*

Scientific Name : *Murex trapa* (Röding, 1798)

Common Name : Rarespined Murex

Local Name : Siput Duri

Size : 92 - 100 mm

Sample Location : Bt. Lancang Market, Penang

Characteristic : Shells are fusiforms or club-shaped, with height and acute spire and prominent spiral ridges. Dirty brownish grey in colour. Long delicate curving spines on the varices and 3-4 short spines on half of the siphonal canal closest to the shell.

Habitat : Demersal, sandy bottom

Distribution : Indo-West Pacific



Muricidae

Murex

sp.



Scientific Name : *Murex ternispina* (Lamarck, 1822)

Common Name : Black Spined Murex

Local Name : Siput Duri

Size : 55 mm

Sample Location : Bayan Lepas, Penang

Characteristic :

Habitat : Rocky or sandy bottoms in near shore waters





Murex sp. caught in the fisherman's net

Nacellidae

Cellana

testudinaria



Scientific Name : *Cellana testudinaria* (Linnaeus, 1758)

Common Name : Turtle limpet

Local Name : Unknown

Size : 50 mm

Sample Location : Pasar Tani, Kota Belud, Sabah

Characteristic : Patellate form shell. Oval and flat, exterior smooth, variable brown and black patches, interior shiny with broad radial brownish stripes.

Habitat : Intertidal rocks, feed on algae at night.

Distribution : Indo-West Pacific



Naticidae

*Paratectonatica**tigrina*

Scientific Name : *Paratectonatica tigrina* (Röding, 1798)

Common Name : Tiger Moon Snail

Local Name : Siput Bintang

Size : 25 mm

Sample Location : Kg. Sebatu, Melaka.

Characteristic : Small to moderate sized shells, globular in shape, smooth and glossy. Whitish shell with several rows of variously sized brown spots. Periostracum thin, brownish and translucent. Operculum shelly with many fine ribs.

Habitat : Offshore, sandy bottom.

Distribution : Indo-West Pacific



Nautilidae

*Nautilus**pompilus*

Scientific Name : *Nautilus pompilius* (Linnaeus, 1758)

Common Name : Chambered Nautilus or Pearly Nautilus

Local Name : Unknown

Size : 104 mm

Sample Location : Pulau Mabul, Sabah

Characteristic : A light weight, smooth thin shell which spiral exogastrically. The shell is partitioned and the chambers are connected to each other by a hollow tube. It's bilaterally symmetrical with a large aperture white creamy colour with zebra like reddish brown stripes radiating from the umbilical region.

Habitat : Continental shelf and slope. Prefers hard bottoms particularly coral reefs

Distribution : Indo-Pacific



Ovulidae

Ovula

ovum



Scientific Name : *Ovula ovum* (Linnaeus, 1758)

Common Name : Common Egg Cowrie

Local Name : Kahentong

Size : 83 mm

Sample Location : Pulau Mabul, Sabah

Characteristic : Thick, white solid, globular egg-shape of shell, shining and smooth exteriorly. Interior is reddish-brown. Long and narrow aperture with thickened outer lip that is irregularly dentate. Operculum is velvet black with a pattern of tiny dots.

Habitat : Shallow water reef.

Distribution : Indo-Pacific



Potamididae

Cerithidea

obtusa



Scientific Name : *Cerithidea obtusa* (Lamarck, 1822)

Common Name : Horn shell or Mud Creeper

Local Name : Siput Sedut

Size : 45 mm

Sample Location : Sg. Benut, Pontian, Johor

Characteristic : Whorls slightly convex (six in number), sculpture of neat ribs caused by crossing axial and spiral cords which results in fine beading, outer lip thick, flaring brown or cream. Operculum circular and dark.

Habitat : Mangrove tree trunks & mud flats

Distribution : Indo-West Pacific





Mud creepers, attach to mangrove tree

Credit to Mohd Saleh Md Taha

Potamididae

*Telescopium**telescopium*

Scientific Name : *Telescopium telescopium* (Linnaeus, 1758)

Common Name : Telescope snail or Telescope mud creeper

Local Name : Rodong atau Berongan

Size : 105 mm

Sample Location : Tanah Merah, Kudat, Sabah.

Characteristics : Tall and straight sided heavy conical shell which is dark brown in colour. Flat based, obliquely quadrangular aperture and columella ends in a twisted dark brown knot, another spiral fold occurs at the base of the whorls. Operculum round and relatively small.

Habitat : mudflats near mangroves, soft mangrove mud

Distribution : Indo-West Pacific



Potamididae

*Terebralia**palustris*

Scientific Name : *Terebralia palustris* (Linnaeus, 1767)

Common Name : Giant mangrove whelk

Local Name : Siput Belitong

Size : 70 mm

Sample Location : Tanah Merah, Kudat, Sabah

Characteristic : Shell very heavy, body eroded externally and dark brown in colour, rarely weakly with yellowish bands with a few spiral cut lines. Columella tan with 2 weak folds, seen better in subadults. Operculum roundish, multispiral, corneous

Habitat : Coastal mudflats.

Distribution : Indo-West Pacific



Potamididae

Terebralia

sulcata



Scientific Name : *Terebralia sulcata* (Born, 1778)

Common Name : Horn shells

Local Name : Siput Belitong

Size : 35 - 40 mm

Sample Location : Menggatal Station, Kota Kinabalu, Sabah.

Characteristic : Has a thick, slate coloured elongated shell with prominent ribs, spiral grooves and expanded thicken lip. Columella and inside of lip callous, shiny and grey brown.

Habitat : Intertidal estuary mudflats occurring from mean tide level upwards and abundant among mangrove.

Distribution : Indo-West Pacific



Rostellariidae

*Tibia**fuscus*

Scientific Name : *Tibia fuscus* (Linnaeus, 1758)

Common Name : Shinbone Tibia or Spindle Tibia

Local Name : Sulau

Size : 160 mm.

Sample Location : Off Semporna, Sabah

Characteristics : A slender shell with a narrow, elongate, high spine and long, straight, needle like siphonal canal. Also called spindle tibia. Early whorls ornamented with vertical ribs and fine spinal ridges.

Habitat : Moderately deep water.

Distribution : Indo-West Pacific



Strombidae

*Conomurex**luhuanus*

Scientific Name : *Conomurex luhuanus* (Linnaeus, 1758)

Common Name : Strawberry Conch or Tiger Conch

Local Name : Unknown

Size : 60 mm.

Sample Location : Singgahmata, Semporna, Sabah

Characteristics : Short spire with a long bright red aperture, squarish similar to cone shell but has a well-developed stromboid notch, columella black or dark-brown.

Habitat : Sandy bottoms of coral reefs, intertidal and shallow subtidal.

Distribution : Indo-Pacific



Strombidae

*Euprotomus**bulla*

Scientific Name : *Euprotomus bulla* (Röding, 1798)

Common Name : Bubble Conch

Local Name : Dolen

Size : 54 mm.

Sample Location : Pulau Mabul, Sabah

Characteristics : Thick glossy shell with a few spinose nodes along shoulder. Elongated aperture with a distinguished spine on top. Well-developed stromboid notch of the outer lip, brownish or reddish inner lip on the aperture.

Habitat : Sandy bottom near reefs.

Distribution : Indo-Pacific



Strombidae

Harpago

chiragra



Scientific Name : *Harpago chiragra* (Linnaeus, 1758)

Common Name : Chiragra Spider Conch

Local Name : Rangak, Kahangah

Size : 104 sm.

Sample Location : Pulau Si Amil/Dendawan, Sabah

Characteristics : Very thick, robust and heavy shell, with a distinct anterior notch. Its most prominent characteristic are the six long and curved marginal spines, expanded from the flaring, thick outer lip and canals. The columella and aperture are lirate. The aperture coloured from white to rose.

Habitat : Offshore on sandy bottom.

Distribution : Indo-Pacific



Strombidae

*Laevistrombus**canarium*

Scientific Name : *Laevistrombus canarium* (Linnaeus, 1758)

Common Name : Dog conch

Local Name : Sikat-sikat, Kinamas

Size : 45 mm

Sample Location : Seafood Restaurant, Kota Kinabalu, Sabah; Pulau Mabul, Sabah.

Characteristics : Heavy shell with a pear shaped body, long and narrow aperture with a flared outer lip. Stromboid notch at the outer lip. Colour all yellow brown or heavily marked with dense zigzag brown lines. Aperture is white.

Habitat : Shallow water, muddy sand bottom

Distribution : Indo-Pacific



Strombidae

*Lambis**crocata*

Scientific Name : *Lambis crocata* (Link, 1807)

Common Name : Orange Spider Conch

Local Name : Rangak

Size : 106 mm

Sample Location : Pulau Mabul, Sabah

Characteristics : Large and thick shell. Aperture smooth, glossy and light orange in colour. Markedly by curved siphonal canal spine

Habitat : Living in shallow reefs and dead boulders of coral

Distribution : Indo-West Pacific



Strombidae

*Lambis**lambis*

Scientific Name : *Lambis lambis* (Linnaeus, 1758)

Common Name : Common Spider Conch

Local Name : Rangak Betul

Size : 140 mm

Sample Location : Pasar Kudat, Kudat, Sabah

Characteristics : A large solid shell with a spire almost as long as its body whorl. Shell colour creamy white, mottled with streaks of brown. Shell opening pearly and pinkish with orange or yellow tints. The lip flared with six spines mostly curling upwards. Aperture smooth and cream in colour with apex pointed.

Habitat : Reef flats and on coral-rubble bottoms or in mangrove areas,

Distribution : Indo-Pacific. Subtropical and tropical.



Strombidae

*Lentigo**lentiginosus*

Scientific Name : *Lentigo lentiginosus* (Linnaeus, 1758)

Common Name : Silver Conch

Local Name : Unknown

Size : 77 mm.

Sample Location : Pulau Mabul, offshore Sabah

Characteristics : A solid shell with inflated body whorl, squarish in outline and a short pointed spine. The expanded outer lip is almost as high as the apex and is thickened. The stromboid notch is deep and siphonal canal short and broad. Smooth aperture and columella. A transparent callosus covers the parietal wall. Creamy with orange-brown streaks and blotches, the aperture is pinkish orange.

Habitat : Sandy coral reef flat, shallow waters.

Distribution : Indo-Pacific



Tegulidae

*Rochia**nilotica*

Scientific Name : *Rochia nilotica* (Linnaeus, 1767)

Common Name : Trochus

Local Name : Luk, Olak-olak Besar

Size : 102 mm

Sample Location : Pulau Mabul, Sabah

Characteristic : Large, thick and heavy triangular core shell, conical in shape and flat at the bottom with sharp angle at base of last whorl. Surface rough, whitish with irregular, axial blotches of reddish brown. Aperture is white.

Habitat : shallow, sandy bottoms with algae in reefs, sometimes in areas with dead and occasional live coral patches

Distribution : Indo-Pacific, Mediterranean Sea



Tegulidae

*Tectus**dentatus*

Scientific Name : *Tectus dentatus* (Forsskål, 1775)

Common Name : Toothed Top Shell

Local Name : Unknown

Size : 60 mm

Sample Location : Pasar Tamu , Kudat

Species Description : Finely striated radially and wrinckled. The sutures have prominent, blunt, solid knobs. The base is flat and heavily polish with concentrate lines in the centre. The base is white with a blue green patch near the columella which is twisted forward, rest of the shell is dull grey.

Habitat : Rocky shores

Distribution : Indo-Pacific



Terebridae

*Oxymeris**maculata*

Scientific Name : *Oxymeris maculata* (Linnaeus, 1758)

Common Name : Marlin Spike auger

Local Name : Tak Bulik Pasung, Sulau Panjang.

Size : 95 mm

Sample Location : Pulau Mabul, Sabah

Characteristic : Elongated and sharply conical glossy shell with broad body whorl and elongate aperture. Body is glossy cream with interrupted spiral bands of brown marking.

Habitat : Sandy bottom; shallow waters.

Distribution : Indo-Pacific



Tonnidae

*Tonna**sulcosa*

Scientific Name : *Tonna sulcosa* (Born, 1778)

Common Name : Banded Tun

Local Name : Kelomboi Laut

Size: 99 mm

Sample Location : Semporna, Sabah

Characteristic : Globose yet large shell with thickened white outer lip, spiral sculpture of closely set smooth, narrow ribs. Colour creamy white with 4 to 5 narrow spiral bands of yellow brown.

Habitat : Subtidal zone with sandy bottom.

Distribution : Indo-West Pacific



Trochidae

*Monodonta**canalifera*

Scientific Name : *Monodonta canalifera* (Lamarck, 1816)

Common Name : Canal monodont

Local Name : Unknown

Size : 30 mm

Sample Location : Pasar Tani Kota Belud, Sabah

Characteristic : Small yet thick shell with an asymmetrical cone with spirals of rounded bumps, a convex base and a single large tooth-shaped structure on the columella at the aperture

Habitat : Found at mid-tidal levels of rocky shores

Distribution : Western Pacific



Turbinellidae

Vasum

turbinellus



Scientific Name : *Vasum turbinellus* (Linnaeus, 1758)

Common Name : Common Pacific Vase

Local Name : Unknown

Size : 40 mm

Sample Location : Pasar Tani, Kota Belud.

Characteristic : Biconical shape. Has 2 spiral rows of strong, blunt spine. Colour of aperture cream with black spots on the rough outer lip. Strong unequal columellar folds.

Habitat : rocky shores, shallow reef areas

Distribution : East Africa—West Polynesia, Indo-Pacific



Turbinidae

*Lunella**cinerea*

Scientific Name : *Lunella cinerea* (Born, 1778)

Common Name : Smooth Moon Turban

Local Name : Unknown

Size: 30 mm

Sample Location : Pasar Tamu, Kudat, Sabah

Characteristic : A dome-like shell. Body whorl sculpted with fine nodulose spiral cords, low spire, wide open umbilicus.

Habitat : Intertidal along shore routes; intertidal along black rocks; common.

Distribution : Indo-Pacific.



Turbinidae

*Turbo**chrysostomus*

Scientific Name : *Turbo chrysostomus* (Linnaeus, 1758)

Common Name : Gold Mouth Turban

Local Name : Unknown

Size : 50 mm

Sample Location : Offshore Semporna, Sabah

Characteristic : Rounded solid, globose shell. Shell sculptured with seabrous cords. Nearly circular aperture.

Habitat : Subtidal near reefs.

Distribution : Indo-West Pacific.



Turbinidae

*Turbo**petholatus*

Scientific Name : *Turbo petholatus* (Linnaeus, 1758)

Common Name : Tapestry Turban

Local Name : Gewang

Size : 53 mm

Sample Location : Pulau Mabul, Sabah

Characteristic : Thick heavy shell is glossy and completely smooth except for occasional shallow spiral.

Habitat : Shallow reef.

Distribution : Tropical Indo-Pacific.



Volutidae

*Cymbiola**chrysostoma*

Scientific Name : *Cymbiola chrysostoma* (Swainson, 1824)

Common Name : Golden-mouth Volute

Local Name : Unknown

Size : 50 mm

Sample Location : Pulau Mabul, Sabah.

Characteristic : Conic shape. Shell thick and heavy with spinose nodes along shoulder. No operculum.

Habitat : Offshore, reef areas

Distribution : Indo-Pacific



Volutidae

*Cymbiola**nobilis*

Scientific Name : *Cymbiola nobilis* ([Lightfoot], 1786)

Common Name : Noble Volute

Local Name : Unknown

Size : 79 mm

Sample Location : Pulau Mabul, Sabah.

Characteristic : Shell thick and heavy, conical. Shell orange, yellow or beige with red or brown zig-zag patterns. No operculum. Body large fleshy, black with bright orange or yellow spots. It has a long siphon that sticks out above the sand when the animal is buried

Habitat : sandy areas near seagrasses and coral rubble

Distribution : Western Pacific: Taiwan to Singapore and Philippines.



Volutidae

*Melo**melo*

Scientific Name : *Melo melo* ([Lightfoot], 1786)

Common Name : Bailer shell snail, Indian volute

Local Name : Unknown

Size : 150 mm

Sample Location : Bayan Baru Market, Pulau Pinang

Characteristic : Shell is rather thin and quite fragile for such a large snail. Colour beige to orange, with brown bands. No operculum. Body huge fleshy, brown with white stripes. It has a pair of slender tentacles, a long siphon that sticks out of the notch at the front of the shell, and a long proboscis, both banded brown and white.

Habitat : It is usually found on muddy bottoms, near mangroves and seagrasses

Distribution : Indo-West Pacific: Restricted to the Southeast Asian region.





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