

Checklist of Marine Epibenthic Invertebrate Species from Mersing, Johor

Wan Lotfi Wan Muda, Abdullah Samat,
Zaidi Che Cob & Mazlan Abd. Ghaffar

Pusat Pengajian Sains Sekitaran dan Sumber Alam
Fakulti Sains dan Teknologi
43600 Bangi, Selangor

Introduction

Marine invertebrates are comprised of a diverse group of animal phyla. They inhabit all type of habitats in marine ecosystem such as coral reefs, sea grass beds, rocky shores as well as soft bottom sub-tidal seafloor. The soft bottom seabed in Johor particularly in Mersing was a productive fishing area and considered an active trawling site. The important commercial species that caught through this fishing gear were invertebrates such as Shrimps, crabs, lobsters, squids and bivalves. Although some of them have high commercial values, but some of them were just ignored and not collected as fishing product for trawlers due to low or no market value. In this paper, we aimed to present the common invertebrates fauna (commercial and non-commercial) and their taxonomic identification for this study area.

Methodology

Samples were collected using a trawl net that operated by trawling by a class A trawler boat near Tg. Penyabong, Mersing Johor. Most of the sample considered as mega size epibenthic fauna due to the mesh size of the net was 1 x 1 inch. The invertebrate specimens were sorted and the best specimen among the same species have been selected and photographed. The specimen have been identified to the species level following Chuang (1961), Lovett (1981), Lane et al. (2000), Ng et al. (2008), Norman & Lu (2000) and Okutani (2000). The classification of the taxa used in the paper was based on SMEBD (2009).

Result and Discussion

A total of 32 species of marine invertebrates from Mersing waters were identified and photographed with 1cm scale. Almost half off the total species were crustaceans including several commercial species such as crabs (*Portunus pelagicus* and *Charybdis affinis*), shrimps (*Parapenaeopsis hungerfordi*, *Parapenaeopsis sculptilis* and *Metapenaeus brevicornis*), and Lobster (*Palinurus versicolor*). These commercial crabs have the size ranged between 6-12 cm while the shrimp have a medium size of 4-10 cm. The impressive lobster or udang kara have the size about 20 cm and according the fishermen, Mersing coastal waters is a popular habitat for the lobster. There were also some small and non-commercial crabs caught during this trawling activity such as spider crabs (*Doclea*) and pebble crabs (Leucosidae).

The second dominan phylum was Mollusca with 9 species. The gastropod have 6 species and their size were considered small (less than 5 cm) except the *Melo melo* snail that have 15 cm in size. Most of the gastropods that been caught were sub-adult stage, where as their morphology was not completely developed and make it difficult to be identified to the species level. The other molluscs were squid (*loligo chinensis*) cuttlefish (*Sepia* sp.) and one species of tiny and thin shell bivalve (*Laterula anatina*). According to Asyirin and Ibrahim (1992), there were at least 3 common and commercially important species of squid in East Coast of Peninsular Malaysia. However, only one species *Loligo chinensis* was found during this survey.

The presence of anthozoan sea pen in the trawler nets was not uncommon. It was represented by *Pteroides* sp., which was a soft bottom sea pen. Between its “leaf-like structure” a colourful tiny porcelain crab (*Porcellanella picta*) was found. The crab has pink dots and surrounded by dark blue circle on its carapace.

Among the echinoderms, only one species of sand dollar and one species of smooth sea cucumber (locally name “bronok”) were found. Besides, a large size polychaete worm (*Aphrodita acuelata*) was also caught during the survey. The worm that famously known as sea mouse or locally known as “bulu ayam” is believed as a poisonous animal. Although they are commonly found in trawlers net, species of echinoderms, molluscs and polychaetes caught during this survey were non-edible and have no-commercial value.

The classification of the marine invertebrates collected during the survey is as follow.

Phylum: Arthropoda

Subphylum: Chelicerata

Class: Merostomata

Order: Xiphosurida

Family: Limulidae

Genus: *Tachypleus* Leach, 1819

Species: *Tachypleus gigas* (Müller, 1785) (Photo 1)

CHECKLIST OF MARINE EPIBENTHIC INVERTEBRATE SPECIES FROM MERSING, JOHOR

Phylum: Arthropoda

Subphylum: Crustacea

Class: Malacostraca

Order: Stomatopoda

Family: Squillidae

Genus: *Oratosquilla* Manning, 1968

Species: *Oratosquilla* sp. (Photo 2)

Order: Decapoda

Family: Portunidae

Genus: *Portunus* Weber, 1795

Species: *Portunus pelagicus* (Linnaeus, 1758) (Photo 3)

Portunus hastatoides Fabricius, 1798 (Photo 4)

Genus: *Charybdis* Cocco, 1832

Species: *Charybdis affinis* Dana, 1852 (Photo 5)

Charybdis feriata (Linnaeus, 1758) (Photo 6)

Charybdis truncata (Fabricius, 1798) (Photo 7)

Family: Galenidae

Genus: *Galene* De Haan, 1833

Species: *Galene bispinosa* (Herbst, 1783) (Photo 8)

Family: Matutidae De Haan, 1835

Genus: *Ashtoret* Galil & Clark, 1994

Species: *Ashtoret lunaris* (Forskål, 1775) (Photo 9)

Genus: *Matuta* Weber, 1795

Species: *Matuta planipes* Fabricius, 1798 (Photo 10)

Family: Epialtidae

Genus: *Doclea* Leach, 1815

Species: *Doclea armata* De Haan, 1839 (Photo 11)

Doclea sp. (Photo 12)

Family: Leucosiidae

Genus: *Myra* Leach, 1817

Species: *Myra fugax* (Fabricius, 1798) (Photo 13)

Genus: *Philyra*

Species: *Philyra globus* (Fabricius, 1775) (Photo 14)

Family: Penaeidae

Genus: *Metapenaeus* Wood-Mason, 1891

Species: *Metapenaeus brevicornis* (H. Milne Edwards, 1837)
(Photo 15)

Genus: *Parapenaeopsis* Alcock, 1901

Species: *Parapenaeopsis hungerfordi* Alcock, 1905 (Photo 16)
Parapenaeopsis sculptilis (Heller, 1862) (Photo 17)

Family: Palinuridae

Genus: *Palinurus* Weber, 1795

Species: *Palinurus versicolor* Latreille, 1804 (Photo 18)

Family: Porcellanidae

Genus: *Porcellanella* Stimpson 1858

Species: *Porcellanella picta* Stimpson 1858 (Photo 19)

Phylum: Mollusca

Class: Gastropoda

Order: Littorinimorpha

Family: Naticidae

Genus: *Tanea* Marwick, 1931

Species: *Tanea lineata* (Röding, 1798) (Photo 26)

Family: Cassidae

Genus: *Semicassis*

Species: *Semicassis bisulcata* (Schubert & Wagner 1829) (Photo 27)

Order: Neogastropoda

Family: Costellariidae

Genus: *Vexillum* Röding, 1798

Species: *Vexillum* sp. (Photo 28)

Family: Muricidae

Genus: *Murex* Linnaeus, 1758

Species: *Murex trapa* Röding, 1798 (Photo 29)

Family: Terebridae

Genus: *Terebra* Bruguière, 1789

Species: *Terebra* sp. (Photo 30)

Family: Volutidae

Genus: *Melo* Broderip in Sowerby I 1826

Species: *Melo melo* (Lightfoot, 1786) (Photo 31)

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Class: Bivalvia

Order: Anomalodesmata

Family: Laternulidae

Genus: *Laternula* Bolten, 1798

Species: *Laternula anatina* (Linné, 1758) (Photo 20)

Class: Cephalopoda

Order: Myopsida

Family: Loliginidae

Genus: *Loligo* Lamarck, 1798

Species: *Loligo chinensis* Gray, 1849 (Photo 21)

Order: Sepiida

Family: Sepiidae

Genus: *Sepia* Linnaeus, 1758

Species: *Sepia* sp. (Photo 22)

Phylum: Echinodermata

Class: Holothuroidea

Order: Molpadiida

Family: Molpadiidae

Genus: *Molpadia* (Cuvier, 1817)

Species: *Molpadia* sp. (Photo 23)

Class: Echinoidea

Order: Clypeasteroidea

Family: Laganidae

Genus: *Laganum*

Species: *Laganum fudsiyama* Döderlein, 1885 (Photo 24)

Phylum: Annelida

Class: Holothuroidea

Order: Polychaeta

Family: Aphroditidae

Genus: *Aphrodita* Linnaeus, 1758

Species: *Aphrodita aculeata* Linnaeus, 1758 (Photo 25)

Phylum: Cnidaria

Class: Anthozoa

Order: Pennatulacea

Family: Pteroeididae

Genus: *Pteroides*

Species: *Pteroides* sp. (Photo 32)

Acknowledgement

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CHECKLIST OF MARINE EPIBENTHIC INVERTEBRATE SPECIES FROM MERSING, JOHOR



PHOTO 1: *Trachpleus gigas*



PHOTO 2. *Oratosquilla* sp.



PHOTO 3. *Palinurus versicolor*



PHOTO 4. *Metapenaeus brevicornis*



PHOTO 5. *Parapenaeopsis sculptilis*



PHOTO 6. *Parapenaeopsis hungerfordi*



PHOTO 7. *Portunus pelagicus*



PHOTO 8. *Portunus hastatoides*



PHOTO 9. *Charybdis affinis*



PHOTO 10. *Charybdis truncata*



PHOTO 11. *Charybdis feriatus*



PHOTO 12. *Galene bispinosa*

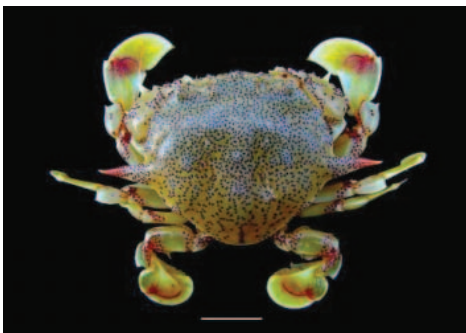


PHOTO 13. *Ashtoret lunaris*

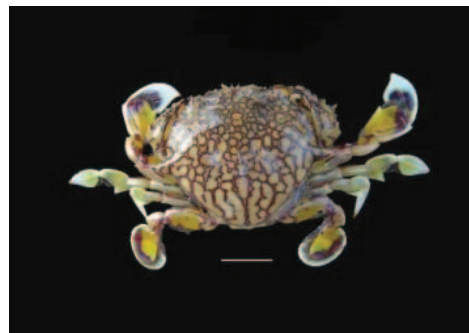


PHOTO 14. *Matuta planipes*



PHOTO 15. *Doclea armata*



PHOTO 16. *Doclea* sp.

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PHOTO 17. *Myra fugax*



PHOTO 18. *Philyra globulosa*



PHOTO 19. *Porcellanella picta*

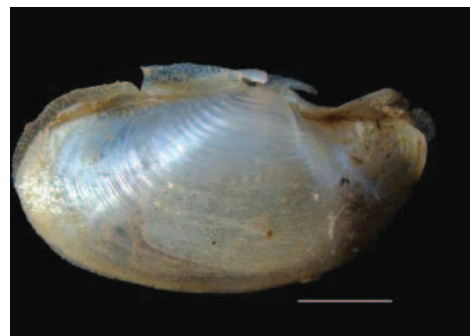


PHOTO 20. *Laternula anatia*



PHOTO 21. *Loligo chinensis*

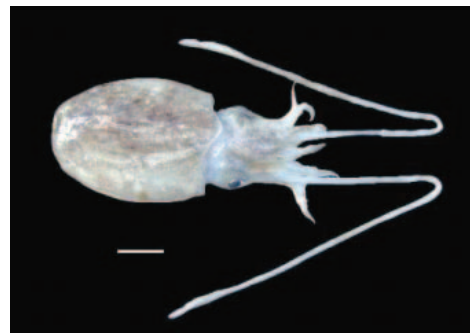


PHOTO 22. *Sepia* sp.



PHOTO 23. *Molpadia* sp.



PHOTO 24. *Laganum fudsiyama*

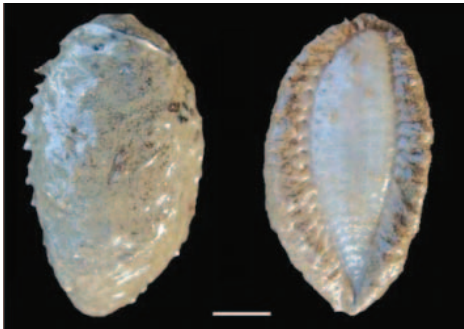


PHOTO 25. *Aphrodita aculeata*



PHOTO 26. *Tanea lineata*



PHOTO 27. *Semicassis bisulcata*

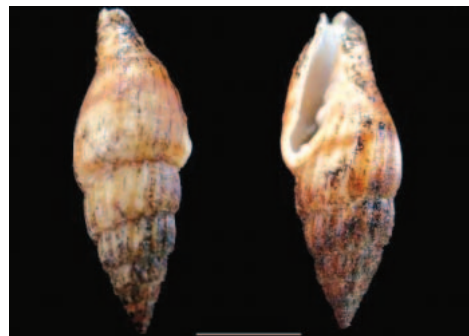


PHOTO 28. *Vexillum* sp.



PHOTO 29. *Murex trapa*.



PHOTO 30. *Terebra* sp.



PHOTO 31. *Melo melo*



PHOTO 32. *Pteroides* sp.