

## Daftar jenis gastropoda dari Pulau Lombok dan pulau-pulau satelitnya

### Checklist of gastropoda from Lombok Island and its satellite islands

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#### ABSTRACT

Lombok, an island that lies in the Lesser Sunda Islands, is popular for the tourist destination. One attempt to promote tourism is through the biodiversity of its fauna. This study aims to summarize the diversity of gastropoda and made a checklist to make it easier studied. Museum collections and twenty-four works of literature were used as the data source. A total of 73 families and 292 species of gastropoda were documented from 29 locations. About 29% of them have their representation in the museum collections. The list dominated by marine (65%), following by terrestrial (15%), mangrove (6%), and freshwater species (5%). Twenty-two species are new records for Lombok Island. The most diverse family, Neritidae, which occupies wider habitat is represented by nine percent. *Littoraria scabra* is the most widely distributed species which occurs in 12 locations. The five most diverse locations were marine habitats which popular for tourism destinations. This study contributes to the development of marine ecotourism in Lombok.

*Keywords: diversity, gastropoda, Lombok, marine ecotourism*

#### INTISARI

Lombok, pulau yang terletak di Kepulauan Sunda Kecil, terkenal sebagai tujuan pariwisata. Salah satu usaha untuk mempromosikan pariwisata ialah melalui keragaman faunanya. Penelitian ini bertujuan untuk merangkum keragaman gastropoda dan membuat satu daftar jenis agar mudah untuk dipelajari. Koleksi museum dan 20 pustaka digunakan sebagai sumber datanya. Total, 73 suku dan 292 jenis gastropoda didokumentasikan dari 29 lokasi. Sekitar 29% darinya terwakili di koleksi museum. Daftar ini didominasi oleh jenis laut (65%), diikuti darat (15%), bakau (6%), dan air tawar (5%). Duapuluh dua jenis merupakan rekaman baru untuk Pulau Lombok. Neritidae dengan mencakup habitat yang lebih luas menjadi suku yang paling beragam dengan mewakili 9% seluruh jenis. *Littoraria scabra* ialah jenis yang paling tersebar luas dengan hadir di 12 lokasi. Lima lokasi dengan keragaman tertinggi merupakan habitat laut yang telah terkenal menjadi tujuan pariwisata. Penelitian ini turut berkontribusi terhadap pembangunan pariwisata bahari di Lombok.

*Kata kunci: keragaman, gastropoda, Lombok, wisata bahari*

## INTRODUCTION

Lombok, an island just located to the east of the most popular island in Indonesia, Bali island. They separated by a narrow deep strait namely Lombok Strait. With the total wide area of 4.619 km<sup>2</sup>, Lombok is the second biggest island after Sumbawa (15.255 km<sup>2</sup>) and both are in the same province, Western Nusa Tenggara (Monk et al., 2000). Similar to Bali, the neighboring island, Lombok also popular as the tourist destination. Most likely for their famous beaches, such as Senggigi, Kuta, Gili Islands, and Labuhan. Another famous destination is Mountain Rinjani National Park. Gili Islands is popular for its coral's life, Over 3.500 species of marine species life around it, compared with 1,500 off the Great Barrier Reef (Ascui & Seow, 2005).

One way to promote tourism is through biodiversity studies (Bashar, 2018). The diversity of flora and fauna in Lombok Island is already documented. The wild mammals of Lombok island are already published in 1990. It consists of 53 mammal species (Kitchener et al., 1990). Checklist flora of Lombok also already published in 2020. It consists of 1.309 species, subspecies, and varieties. The checklist in this book is divided into nine parts based on the phylogenetic classification (Rustiarni et al., 2020). Meanwhile, the diversity of gastropoda in Lombok Island is never been summarized.

Gastropoda, a class of Mollusca, has been through a long period of evolution. Their ancestor was from marine form who emerged from the bottom of the sea and then invading river, lake, and land. It is also the most diverse class with a total of 32.569 known species. The most diverse gastropods are marine taxa (17.481), following by terrestrial taxa (11.116) then by freshwater taxa (3.972) (Strong et al., 2008; Rosenberg, 2014). The first person who studied mollusca of Lombok was Edgar A Smith, a British malacologist who published his list of the land snail of Lombok including the descriptions of twelve new species. The recent study by Candri et al., (2020) was documenting molluscan communities in the southern part of Lombok Island. The aims of this

paper are to summarized the data on the diversity of gastropods from Lombok Island and made a checklist for professional taxonomists or any other enthusiasts who studying gastropods. Their potency also will be discussed briefly. Hopefully, biodiversity data can promote the ecotourism activities of Lombok Island.

## MATERIALS AND METHODS

This study was carried out between January and May 2020. Two types of data were used: 1) Primary data: list of species in the catalog books from the Malacology Laboratory, Museum Zoologi Bogor (MZB-LIPI), 2) Secondary data: list of the species from the works of literature (online and printed).

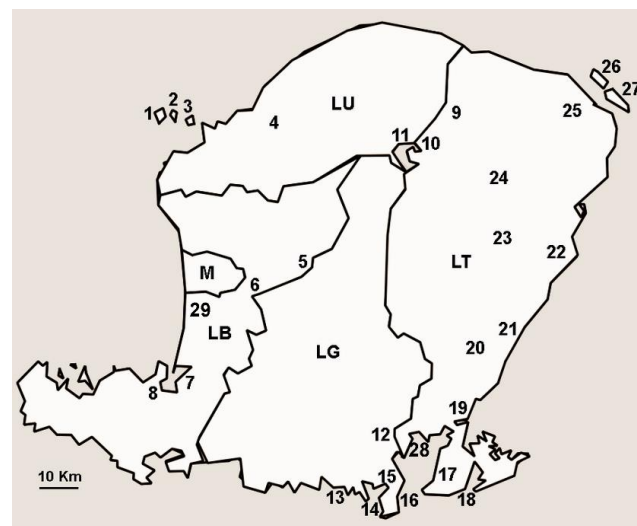


Figure 1. Administrative map of Lombok Island, with the locations of species listed in this paper. M Mataram, LB Lombok Barat, LU Lombok Utara, LT Lombok Timur, LG Lombok Tengah, 1 Gili Trawangan<sup>MR</sup>, 2 Gili Meno<sup>MR</sup>, 3 Gili Air<sup>MR</sup>, 4 Gangga<sup>FW MG</sup>, 5 Suranadi<sup>FW</sup>, 6 Narmada<sup>FW TR</sup>, 7 Lembar<sup>MG</sup>, 8 Sekotong<sup>MG</sup>, 9 Sembalun<sup>TR</sup>, 10 Plawangan<sup>TR</sup>, 11 Segara Anak<sup>FW TR</sup>, 12 Praya Timur<sup>MG</sup>, 13 Pantai Kuta<sup>MR</sup>, 14 Tanjung Aan<sup>MR</sup>, 15 Pujut<sup>FW MG TR</sup>, 16 Pantai Gerupuk<sup>MR</sup>, 17 Jerowaru<sup>MG</sup>, 18 Teluk Ekas<sup>MG MR TR</sup>, 19 Keruak<sup>FW MG</sup>, 20 Lepak<sup>TR</sup>, 21 Labuan Haji<sup>FW</sup>, 22 Pringgabaya<sup>FW</sup>, 23 Aikmel<sup>TR</sup>, 24 Suwela<sup>TR</sup>, 25 Sambelia<sup>FW MG</sup>, 26 Gili Lawang<sup>MG MR TR</sup>, 27 Gili Sulat<sup>MG MR</sup>, 28 Batunampar<sup>MG MR</sup>, 29 Taman Ayu<sup>FW</sup>. Note: <sup>FW</sup>(freshwater), <sup>MG</sup>(mangrove), <sup>MR</sup>(marine), <sup>TR</sup>(terrestrial).

Twenty-four works of literature were examined. Together with the specimens from MZB, 29 localities were documented (Figure 1). The specimens' collectors were sometimes also the authors, except HB Munaf and A Saim, A Hanna, W Kastoro & Maryoto, DG Reid, Y Apriyanti. Collector names, years of the publications, the locations visited and the number of species found is listed below (locations are not translated into English):

1. EA Smith. 1898. Lombok. 25 spesies (based on the A Everett's collection).
2. B Rensch. 1931 (Segara Anak, Sembalun, Plawangan, Suwela, Labuan Haji), 1932 (Narmada, Teluk Ekas), 1934 (Segara Anak, Narmada, Sembalun, Labuan Haji, Suwela) 56 species.
3. HB Munaf & A Saim. 1980 (Pringgabaya, Keruak, Lombok Barat, Pujut, Suranadi, Aikmel). 42 species.
4. A Hanna. 1981 (Lombok Timur). One species.
5. Mudjiono & B Sudjoko. 1994 (Pantai Kuta, Tajung Aan, Pantai Gerupuk). 44 species.
6. Mudjiono. 1997 (Gili Trawangan, Gili Meno, Gili Air). 44 species.
7. W Kastoro & Maryoto. 1998 (Lombok Tengah, Pantai Kuta). Five species.
8. J Hylleberg. 1999 (Gili Trawangan, Gili Meno, Gili Air). 67 species.
9. W Kastoro, H Saito, K Hasegawa. 2000 (Lombok). 23 species.
10. P Prahoro & SP Anthony. 2000 (Batunampar, Teluk Ekas). 17 species.
11. DG Reid. 2002 (Pantai Kuta). One species.
12. E Yusron, P Darsono & P Widianwari. 2010 (Lombok Barat, Lombok Timur, Pantai Kuta). 24 species.
13. Y Apriyanti. 2013 (Sekotong, Lembar, Jerowaru). 28 species.
14. NR Isnaningsih. 2015 (Gangga, Keruak). 25 species.
15. M Zusron, CA Wibowo, A Langgeng, FM Firdausi, S Etfanti. 2015 (Sekotong). 29 species.
16. N Mujiono. 2016 (Sambelia, Praya Timur, Gili Lawang, Pujut, Gili Sulat, Senggigi). 31 species.
17. BP Gargely, JU Otani, T Hosoda, T Asami & J Harl. 2018 (Pujut). One species.
18. JR Parorrongan, F Zahida, IP Yuda. 2018 (Pantai Kuta). 27 species.
19. DA Candri, B Junaedah, H Ahyadi, Y Zamroni. 2018 (Lembar, Teluk Ekas, Sambelia). 47 species.
20. Athifah, MN Putri, SI Wahyudi, R Edy, IS Rohyani. 2019 (Taman Ayu). Seven species.
21. B Abdillah, Karnan, D Santoso. 2019 (Jerowaru). Nine species.
22. V Wardhani, SF Tania, BNA Pita, OY Rosada, NR Syafitri, N Amira, MA Akbar, Y Maulidan, SK Riandinata, DA Candri. 2019 (West and East Lombok). 47 species.
23. DA Candri, LH Sani, H Ahyadi, B Farista. 2020 (Jerowaru, Pantai Gerupuk). 34 species.
24. DA Candri, LH Sani, H Ahyadi, B Farista, A Virgota. 2020 (Bagek Kembar, West Lombok). 23 species.

Nomenclature of families is following Bouchet & Rocroi (2005), species names are validated following two websites: <http://www.molluscabas.e.org> and <http://www.marinespecies.org>. A species that is not listed in the examined literature is considered as New Record for the island.

## RESULTS

Overall, 73 families belong to 292 species were documented from Lombok Island. To make them studied easier, they will be listed into four groups according to their habitat, i.e. freshwater, marine, terrestrial, and mangrove. The list can be seen below. Note: \*stored in MZB, #type locality from Lombok, <sup>nr</sup> (new record), <sup>FW</sup> (freshwater), <sup>MG</sup> (mangrove), <sup>MR</sup> (marine), <sup>TR</sup> (terrestrial).

### I. Ampullariidae

1. *Pila scutata* (Mousson, 1848) <sup>FW\*</sup> : Pringgabaya, Keruak, Lombok Barat.
2. *Pomacea canaliculata* (Lamarck, 1822) <sup>FW</sup> : Taman Ayu.

### II. Bithyniidae

3. *Digoniostoma truncatum* (Eydoux & Souleyet, 1852) <sup>FW\*</sup> : Narmada, Pringgabaya.

### III. Lymnaeidae

4. *Radix rubiginosa* (Michelin, 1831) <sup>FW\* nr</sup> : Pringgabaya, Lombok Barat, Taman Ayu.

### IV. Pachychilidae

5. *Faunus ater* (Linnaeus, 1758) <sup>FW MG\* nr</sup> : Lembar, Sambelia.

### V. Planorbidae

6. *Gyraulus convexiusculus* (Hutton, 1849) <sup>FW\*</sup> : Pringgabaya.

7. *Indoplanorbis exustus* (Deshayes, 1833) <sup>FW</sup> : Taman Ayu.

8. *Planorbis elberti* Haas, 1912 <sup>FW</sup> : Lombok

#### VI. Thiaridae

9. *Melanoides tuberculata* (Müller, 1774) <sup>FW MG\*</sup> : Segara Anak, Pujut, Pringgabaya, Gangga, Sambelia, Taman Ayu.

10. *Sermyla riqueti* Grateloup, 1840 <sup>FW MG\*</sup> : Labuan Haji, Gangga, Sambelia.

11. *Stenomelania plicaria* (Born, 1778) <sup>FW\*</sup> : Gangga, Sambelia.

12. *Stenomelania rustica* (Mousson, 1857) <sup>FW\* nr</sup> : Pringgabaya.

13. *Tarebia granifera* (Lamarck, 1816) <sup>FW\*</sup> : Narmada, Pringgabaya, Lombok Barat, Suranadi, Gangga, Sambelia, Taman Ayu.

14. *Thiara scabra* (Müller, 1774) <sup>FW\*</sup> : Pringgabaya, Lombok Barat, Taman Ayu.

#### VII. Viviparidae

15. *Filopaludina javanica* (von dem Busch, 1844) <sup>FW\*</sup> : Narmada, Lombok Barat, Keruak, Taman Ayu.

#### VIII. Angariidae

16. *Angaria delphinus* (Linnaeus, 1758) <sup>MR</sup> : Gili Meno.

17. *Angaria* sp. <sup>MR\*</sup> : Sekotong.

#### IX. Batillariidae

18. *Batillaria zonalis* (Bruguière, 1792) <sup>MG MR\*</sup> : Lembar, Jerowaru, Keruak.

#### X. Buccinidae

19. *Afer afer* (Gmelin, 1791) <sup>MR</sup> : Pantai Kuta.

20. *Buccinulum linea* (Martyn, 1784) <sup>MR</sup> : Pantai Kuta.

21. *Pollia undosa* (Linnaeus, 1758) <sup>MR</sup> : Pantai Kuta, Tanjung Aan, Pantai Gerupuk.

#### XI. Bursidae

22. *Bursa rhodostoma* (Sowerby II, 1835) <sup>MR</sup> : Gili Meno.

#### XII. Calliostomatidae

23. *Astele speciosa* (Adams, 1855) <sup>MR</sup> : Teluk Ekas.

#### XIII. Cerithiidae

24. *Cerithium coralium* Kiener, 1841 <sup>MG MR\*nr</sup> : Jerowaru, Lembar.

25. *Cerithium punctatum* Bruguière, 1792 <sup>MR</sup> : Pantai Kuta, Gili Meno, Gili Air, Lombok Barat, Lombok Timur, Batunampar, Teluk Ekas.

26. *Cerithium rostratum* Sowerby II, 1855 <sup>MR</sup> : Pantai Kuta, Lombok Barat, Lombok Timur.

27. *Cerithium zonatum* (Wood, 1828) <sup>MR\*nr</sup> : Praya Timur.

28. *Clypeomorus batillariaeformis* Habe & Kosuge, 1966 <sup>MG MR</sup> : Lembar, Jerowaru, Praya Timur.

29. *Clypeomorus pellucida* (Hombron & Jacquinot, 1852) <sup>MG MR\*nr</sup> : Jerowaru, Lembar.

30. *Clypeomorus petrosa* (Wood, 1828) <sup>MR</sup> : Batunampar.

31. *Pseudovertagus aluco* (Linnaeus, 1758) <sup>MR\*</sup> : Lombok Barat, Pantai Kuta, Pantai Gerupuk.

32. *Rhinoclavis sinensis* (Gmelin, 1791) <sup>MR</sup> : Pantai Kuta, Tanjung Aan.

#### XIV. Chilodontidae

33. *Euchelus atratus* (Gmelin, 1791) <sup>MR\*nr</sup> : Pantai Kuta, Pantai Gerupuk.

34. *Granata elegans* (Gray, 1847) <sup>MR</sup> : Pantai Kuta.

#### XV. Collumbellidae

35. *Amphissa versicolor* Dall, 1871 <sup>MR</sup> : Pantai Kuta.

36. *Euplica scripta* (Lamarck, 1822) <sup>MR</sup> : Pantai Gerupuk, Pantai Kuta, Lombok Barat, Lombok Timur.

37. *Mitrella scripta* (Linnaeus, 1758) <sup>MR</sup> : Pantai Kuta.

38. *Pardalinops testudinaria* (Link, 1807) <sup>MR</sup> : Pantai Kuta, Teluk Ekas.

39. *Pictocolumbella ocellata* (Link, 1807) <sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air, Batunampar, Teluk Ekas, Pantai Kuta.

#### XVI. Conidae

40. *Conus betulinus* Linnaeus, 1758 <sup>MR</sup> : Pantai Kuta, Pantai Gerupuk.

41. *Conus boeticus* Reeve, 1844 <sup>MR</sup> : Gili Meno, Gili Trawangan, Gili Meno, Gili Air.

42. *Conus capitaneus* Linnaeus, 1758 <sup>MR</sup> : Pantai Kuta, Pantai Gerupuk.

43. *Conus coffeae* Gmelin, 1791 <sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.

44. *Conus coronatus* Gmelin, 1791 <sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.

45. *Conus ebraeus* Linnaeus, 1758 <sup>MR</sup> : Gili Trawangan, Pantai Kuta.

46. *Conus eburneus* Hwass in Bruguière, 1792 <sup>MR</sup> : Batunampar.

47. *Conus emaciatus* Reeve, 1849 <sup>MR</sup> : Gili Trawangan.

48. *Conus figulinus* Linnaeus, 1758 <sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.

49. *Conus flavidus* Lamarck, 1810 <sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.

50. *Conus imperialis* Linnaeus, 1758 <sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.

51. *Conus lividus* Hwass in Bruguière, 1792 <sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.

52. *Conus malacanus* Hwass in Bruguière, 1792 <sup>MR</sup> : Batunampar.

53. *Conus marmoreus* Linnaeus, 1758 <sup>MR</sup> : Pantai Gerupuk.

54. *Conus miles* Linnaeus, 1758 <sup>MR</sup> : Gili Trawangan.

55. *Conus musicus* Hwass in Bruguière, 1792 <sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.

56. *Conus planorbis* Born, 1778 <sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.

57. *Conus rattus* Hwass in Bruguière, 1792 <sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.

58. *Conus spectrum* Linnaeus, 1758 <sup>MR</sup> : Teluk Ekas.

59. *Conus striolatus* Kiener, 1848 <sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.

60. *Conus suturatus* Reeve, 1844 <sup>MR</sup> : Batunampar, Teluk Ekas.

61. *Conus vexillum* Gmelin, 1791 <sup>MR</sup> : Lombok Barat, Lombok Timur.

62. *Conus virgo* Linnaeus, 1758 <sup>MR</sup> : Gili Trawangan.

#### XVII. Costellariidae

63. *Vexillum plicarium* (Linnaeus, 1758) <sup>MR</sup> : Pantai Gerupuk.

64. *Vexillum polygonum* (Gmelin, 1791) <sup>MR</sup> : Batunampar.

65. *Vexillum rugosum* (Gmelin, 1791) <sup>MR</sup> : Pantai Gerupuk.

66. *Vexillum vulpecula* (Linnaeus, 1758)<sup>MR</sup> : Pantai Kuta, Lombok Barat.
67. *Vexillum woldemarii* (Kiener, 1838)<sup>MR</sup> : Batunampar.
- XVIII. Cypraeidae**
68. *Arestorides argus* (Linnaeus, 1758)<sup>MR</sup> : Pantai Kuta.
69. *Bistolida kieneri* (Hidalgo, 1906)<sup>MR</sup> : Pantai Kuta.
70. *Cypraea tigris* Linnaeus, 1758<sup>MR\*</sup> : Gili Lawang, Gili Trawangan.
71. *Erosaria boivini* (Kiener, 1844)<sup>MR</sup> : Pantai Kuta.
72. *Erronea caurica* (Linnaeus, 1758)<sup>MR</sup> : Pantai Kuta.
73. *Erronea erronea* (Linnaeus, 1758)<sup>MR\*</sup> : Lombok Barat, Lombok Tengah, Pantai Gerupuk, Tanjung Aan, Pantai Kuta.
74. *Luria isabella* (Linnaeus, 1758)<sup>MR</sup> : Gili Meno.
75. *Lyncina vitellus* (Linnaeus, 1758)<sup>MR\*nr</sup> : Lombok Tengah.
76. *Lyncina lynx* (Linnaeus, 1758) : Tanjung Aan, Pantai Gerupuk.
77. *Mauritia arabica* (Linnaeus, 1758)<sup>MR</sup> : Gili Trawangan.
78. *Monetaria annulus* (Linnaeus, 1758)<sup>MR\*</sup> : Lombok Tengah, Gili Trawangan, Lombok Barat, Lombok Timur, Pantai Kuta.
79. *Monetaria moneta* (Linnaeus, 1758)<sup>MR</sup> : Lombok Tengah, Tanjung Aan, Pantai Gerupuk, Gili Trawangan, Gili Meno.
- XIX. Fasciolaridae**
80. *Filifusus filamentosus* (Röding, 1798)<sup>MR</sup> : Gili Trawangan.
- XX. Fissurellidae**
81. *Montfortista panhi* (Quoy & Gaimard, 1834)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
82. *Scutus unguis* (Linnaeus, 1758)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
- XXI. Haliotidae**
83. *Haliotis asinina* Linnaeus, 1758<sup>MR</sup> : Pantai Gerupuk.
84. *Haliotis varia* Linnaeus, 1758<sup>MR</sup> : Pantai Gerupuk.
- XXII. Littorinidae**
85. *Echinolittorina millegrana* (Philippi, 1848)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
86. *Echinolittorina pascua* (Rosewater, 1970)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
87. *Echinolittorina radiata* (Souleyet in Eydoux & Souleyet, 1852)<sup>MR\*</sup> : Pujut.
88. *Echinolittorina sundaica* (van Regteren Altena, 1945)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
89. *Echinolittorina vidua* (Gould, 1859)<sup>MR\*</sup> : Kuta, Gili Trawangan, Gili Meno, Gili Air.
90. *Littoraria carinifera* (Menke, 1830)<sup>MG MR\*</sup> : Lembar, Jerowaru, Praya Timur, Gili Trawangan, Gili Meno, Gili Air.
91. *Littoraria intermedia* (Philippi, 1846)<sup>MG MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
92. *Littoraria lutea* (Philippi, 1847)<sup>MG MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
93. *Littoraria melanostoma* (Gray, 1839)<sup>MG MR\*</sup> : Lembar, Jerowaru.
94. *Littoraria pallescens* (Philippi, 1846)<sup>MG MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
95. *Littoraria scabra* (Linnaeus, 1758)<sup>MG MR\*</sup> : Lembar, Jerowaru, Gili Sulat, Praya Timur, Gili Lawang, Pujut, Sambelia, Tanjung Aan, Pantai Gerupuk, Gili Trawangan, Gili Meno, Gili Air.
96. *Littoraria undulata* (Gray, 1839)<sup>MG MR\*</sup> : Pujut, Praya Timur, Gili Trawangan, Gili Meno, Gili Air.
97. *Nodilittorina pyramidalis* (Quoy & Gaimard, 1833)<sup>MR\*</sup> : Pujut, Praya Timur.
98. *Peasiella conoidalis* (Pease, 1868)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
99. *Peasiella fasciata* Reid & Mak, 1998<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
100. *Tectarius tectumpersicum* (Linnaeus, 1758)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
- XXIII. Lottiidae**
101. *Liotinaria peronii* (Kiener, 1838)<sup>MR</sup> : Gili Meno.
102. *Patelloida saccharina* (Linnaeus, 1758)<sup>MR\*</sup> : Pujut, Gili Trawangan, Gili Meno, Gili Air.
103. *Patelloida striata* Quoy & Gaimard, 1834<sup>MR\*</sup> : Pujut, Gili Trawangan, Gili Meno, Gili Air.
- XXIV. Mitridae**
104. *Mitra* sp.<sup>MR\*</sup> : Lembar.
105. *Mitra stictica* (Link, 1807)<sup>MR</sup> : Pantai Kuta.
106. *Pterygia fenestrata* (Lamarck, 1811)<sup>MR</sup> : Teluk Ekas.
107. *Strigatella lugubris* (Swainson, 1821)<sup>MR</sup> : Batunampar.
108. *Strigatella pica* (Dillwyn, 1817)<sup>MR</sup> : Pantai Kuta.
109. *Strigatella retusa* (Lamarck, 1811)<sup>MR</sup> : Gili Trawangan.
110. *Strigatella telescopium* (Reeve, 1844)<sup>MR</sup> : Batunampar.
111. *Strigatella vexillum* (Reeve, 1844)<sup>MR</sup> : Batunampar, Teluk Ekas.
- XXV. Mitromorphidae**
112. *Mitromorpha columbellaria* (Scacchi, 1836)<sup>MR</sup> : Gili Trawangan.
- XXVI. Modulidae**
113. *Modulus tectum* (Gmelin, 1791)<sup>MR\*nr</sup> : Lombok Barat.
- XXVII. Muricidae**
114. *Chicoreus brunneus* (Link, 1807)<sup>MG MR</sup> : Tanjung Aan, Pantai Gerupuk.
115. *Chicoreus capucinus* (Lamarck, 1822)<sup>MG MR\*</sup> : Jerowaru, Lembar, Sekotong, Gili Sulat.
116. *Drupa morum* Röding, 1798<sup>MR</sup> : Gili Trawangan.
117. *Drupella cornus* (Röding, 1798)<sup>MR</sup> : Gili Trawangan.
118. *Drupella margariticola* (Broderip, 1833)<sup>MR\*</sup> : Pujut, Pantai Kuta, Tanjung Aan, Pantai Gerupuk, Gili Trawangan, Gili Meno, Gili Air.
119. *Drupina grossularia* (Röding, 1798)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
120. *Hexaplex cichoreum* (Gmelin, 1791)<sup>MR\*nr</sup> : Jerowaru.
121. *Morulaanaxares* (Kiener, 1836)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
122. *Muricodrupa fiscella* (Gmelin, 1791)<sup>MR</sup> : Gili Trawangan, Gili Air.
123. *Neothais marginatra* (Blainville, 1832)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.

124. *Oppomorus purpureocinctus* (Preston, 1909)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
125. *Semiricinula fusca* (Küster, 1862)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
126. *Semiricinula muricoides* (Blainville, 1832)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
127. *Semiricinula squamosa* (Pease, 1868)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
128. *Semiricinula turbinoides* (Blainville, 1832)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
129. *Tenguella ceylonica* (Dall, 1923)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
130. *Tenguella granulata* (Duclos, 1832)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air, Pantai Kuta.
131. *Thalessa virgata* (Dillwyn, 1817)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
- XXVIII. Nacellidae**
132. *Cellana testudinaria* (Linnaeus, 1758)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
- XXIX. Nassariidae**
133. *Nassarius albescens* (Dunker, 1846)<sup>MR</sup> : Lombok Barat, Lombok Timur.
134. *Nassarius arcularia* (Linnaeus, 1758)<sup>MR</sup> : Batunampar.
135. *Nassarius fissilabris* (Adams, 1852)<sup>MR</sup> : Batunampar, Teluk Ekas.
136. *Nassarius gaudiosus* (Hinds, 1844)<sup>MR</sup> : Pantai Kuta, Gili Trawangan, Gili Meno, Gili Air.
137. *Nassarius globosus* (Quoy & Gaimard, 1833)<sup>MR</sup> : Lombok Barat, Lombok Timur, Pantai Kuta.
138. *Nassarius horridus*<sup>MR</sup> (Dunker, 1847) : Batunampar.
139. *Nassarius pullus*<sup>MR</sup> (Linnaeus, 1758) : Lombok Barat, Lombok Timur.
140. *Nassarius* sp.<sup>MG MR \*</sup> : Jerowaru.
141. *Nassarius venustus* (Dunker, 1847)<sup>MR</sup> : Batunampar, Teluk Ekas.
- XXX. Naticidae**
142. *Mammilla melanostoma* (Gmelin, 1791)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
143. *Natica fasciata* (Röding, 1798)<sup>MR:nr</sup> : Lombok Barat.
144. *Polinices mammilla* (Linnaeus, 1758)<sup>MR\*</sup> : Lombok Barat, Pantai Kuta, Gili Trawangan, Gili Meno, Gili Air.
- XXXI. Olividae**
145. *Oliva caerulea* (Röding, 1798)<sup>MR</sup> : Pantai Kuta.
146. *Oliva elegans* Lamarck, 1811<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
147. *Oliva oliva* (Linnaeus, 1758)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
148. *Oliva reticulata* (Röding, 1798)<sup>MR</sup> : Pantai Kuta, Gili Trawangan, Gili Meno, Gili Air.
149. *Oliva sericea* (Röding, 1798)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
150. *Oliva tricolor* Lamarck, 1811<sup>MR</sup> : Pantai Kuta.
152. *Phasianella solida* (Born, 1778)<sup>MR</sup> : Pantai Kuta.
- XXXIV. Pisaniidae**
153. *Engina alveolata* (Kiener, 1836)<sup>MR</sup> : Batunampar, Gili Trawangan.
154. *Engina fusiformis* Pease, 1865<sup>MR</sup> : Pantai Kuta.
155. *Engina maura* (Sowerby, 1832)<sup>MR</sup> : Pantai Kuta.
156. *Engina mendicaria* (Linnaeus, 1758)<sup>MR</sup> : Pantai Kuta, Gili Trawangan.
157. *Engina zonalis* (Lamarck, 1822)<sup>MR</sup> : Pantai Kuta, Tanjung Aan.
- XXXV. Planaxidae**
158. *Planaxis sulcatus* (Born, 1778)<sup>MG MR</sup> : Jerowaru, Pujut, Praya Timur, Gili Trawangan, Gili Meno, Gili Air, Batunampar.
- XXXVI. Pyramidellidae**
159. *Longchaeus eburneus* (Laseron, 1959)<sup>MR</sup> : Batunampar.
160. *Milda ventricosa* (Guérin, 1831)<sup>MR</sup> : Lombok Timur, Lombok Barat, Batunampar.
161. *Quirella humilis* (Preston, 1905)<sup>MR</sup> : Plawangan.
162. *Pyramidella maculosa* Lamarck, 1822<sup>MR</sup> : Lombok Barat.
- XXXVII. Ranellidae**
163. *Gyrineum natator* (Röding, 1798)<sup>MR:nr</sup> : Lombok Barat.
164. *Monoplex pilearis* (Linnaeus, 1758)<sup>MR</sup> : Pantai Gerupuk.
- XXXVIII. Siphonariidae**
165. *Siphonaria normalis* Gould, 1846<sup>MR:nr</sup> : Pujut.
166. *Siphonaria sirius* Pilsbry, 1895<sup>MR</sup> : Batunampar.
- XXXIX. Strombidae**
168. *Canarium erythrinum* (Dillwyn, 1817)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
169. *Canarium labiatum* (Röding, 1798)<sup>MR</sup> : Tanjung Aan, Pantai Gerupuk, Gili Meno.
170. *Canarium mutabile* (Swainson, 1821)<sup>MR</sup> : Gili Trawangan.
171. *Conomurex luhuanus* (Linnaeus, 1758)<sup>MR</sup> : Pantai Kuta, Tanjung Aan, Pantai Gerupuk, Gili Trawangan.
172. *Euprotomus aurisdianae* (Linnaeus, 1758)<sup>MR</sup> : Pantai Gerupuk, Gili Trawangan, Gili Meno, Gili Air.
173. *Gibberulus gibberulus* (Linnaeus, 1758)<sup>MR</sup> : Pantai Kuta.
174. *Laevistrombus canarium* (Linnaeus, 1758)<sup>MR</sup> : Lombok Timur.
175. *Lambis lambis* (Linnaeus, 1758)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
- XL. Tegulidae**
176. *Tectus fenestratus* (Gmelin, 1791)<sup>MR</sup> : Pantai Kuta, Pantai Gerupuk, Gili Trawangan, Gili Meno, Gili Air, Lombok Barat, Lombok Timur.
177. *Tectus niloticus* (Linnaeus, 1767)<sup>MR</sup> : Pantai Gerupuk.
178. *Tectus pyramis* (Born, 1778)<sup>MR:nr</sup> : Gili Lawang.
- XLI. Terebridae**
179. *Duplicaria spectabilis* (Hinds, 1844)<sup>MR</sup> : Batunampar.
180. *Hastula hectica* (Linnaeus, 1758)<sup>MR</sup> : Pantai Kuta.
- XXXII. Patellidae**
151. *Scutellastra flexuosa* (Quoy & Gaimard, 1834)<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
- XXXIII. Phasianellidae**

181. *Oxymeris maculata* (Linnaeus, 1758)<sup>MR</sup> : Pantai Kuta.
- XLII. Tonnidae**
182. *Tonna canaliculata* (Linnaeus, 1758)<sup>MR</sup> : Pantai Kuta, Pantai Gerupuk.
- XLIII. Triviidae**
183. *Trivirostra oryza* (Lamarck, 1810)<sup>MR</sup> : Pantai Kuta.
- XLIV. Trochidae**
184. *Clanculus undatus* (Lamarck, 1816)<sup>MR</sup> : Gili Trawangan, Gili Air.
185. *Monodonta canalifera* Lamarck, 1816<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
186. *Monodonta labio* (Linnaeus, 1758)<sup>MG MR\*</sup> : Pujut, Sambelia, Pantai Kuta, Tanjung Aan, Pantai Gerupuk.
187. *Pseudostomatella decolorata* (Gould, 1848)<sup>MR</sup> : Gili Meno.
188. *Stomatia phymotis* Helbling, 1779<sup>MR</sup> : Gili Trawangan.
189. *Stomatella impertusa* (Burrow, 1815)<sup>MR</sup> : Pantai Kuta
190. *Trochus maculatus* Linnaeus, 1758<sup>MR</sup> : Lombok Barat, Pantai Kuta, Gili Trawangan, Gili Meno, Gili Air.
191. *Trochus radiatus* Gmelin, 1791<sup>MR</sup> : Tanjung Aan, Pantai Gerupuk.
- XLV. Turbinidae**
192. *Liotinaria peronii* (Kiener, 1838)<sup>MR</sup> : Pantai Kuta.
193. *Pomaulax gibberosus* (Dillwyn, 1817)<sup>MR</sup> : Pantai Kuta.
194. *Turbo argyrostomus* Linnaeus, 1758<sup>MR</sup> : Pantai Kuta.
195. *Turbo chrysostomus* Linnaeus, 1758<sup>MR\*nr</sup> : Sekotong.
196. *Turbo cidaris* Gmelin, 1791<sup>MR</sup> : Pantai Kuta.
197. *Turbo petholatus* Linnaeus, 1758<sup>MR</sup> : Gili Trawangan, Gili Meno, Gili Air.
198. *Turbo setosus* Gmelin, 1791<sup>MR\*</sup> : Lombok Barat.
- XLVI. Turbinellidae**
199. *Vasum ceramicum* (Linnaeus, 1758)<sup>MR</sup> : Gili Trawangan.
200. *Vasum turbinellus* (Linnaeus, 1758)<sup>MR</sup> : Pantai Kuta.
- XLVII. Velutinidae**
201. *Coriocella nigra* Blainville, 1824<sup>MR</sup> : Pantai Kuta.
- XLVIII. Volutidae**
202. *Amoria zebra* (Leach, 1814)<sup>MR</sup> : Pantai Kuta.
203. *Cymbiola aulica* (G. B. Sowerby I, 1825)<sup>MR</sup> : Pantai Kuta.
204. *Cymbiola vespertilio* (Linnaeus, 1758)<sup>MR</sup> : Pantai Kuta, Pantai Gerupuk, Gili Air, Lombok Barat.
- XLIX. Ariophantidae**
205. *Elaphroconcha floresiana rufolineata* Smith, 1898<sup>TR#</sup> : Suwela, Sembalun.
206. *Elaphroconcha fruhstorferi* (Martens, 1896)<sup>TR#</sup> : Suwela, Sembalun.
207. *Elaphroconcha internota* Smith, 1898<sup>TR#</sup> : Lombok.
208. *Microcystina exigua* (Moellendorff, 1897)<sup>TR</sup> : Plawangan, Suwela.
209. *Lamprocystis sinica* Möllendorff, 1885<sup>TR</sup> : Lombok.
210. *Parmarion everetti* Collinge, 1897<sup>TR#</sup> : Sembalun.
211. *Parmarion intermedium* Collinge, 1897<sup>TR#</sup> : Suwela, Aikmel.
- L. Camaenidae**
212. *Landouria smironensis* (Mousson, 1849)<sup>TR</sup> : Suwela, Sembalun, Segara Anak.
213. *Landouria rotatoria* (Busch, 1842)<sup>TR</sup> : Plawangan, Segara Anak.
214. *Planispira infarcta* (Martens, 1896)<sup>TR#</sup> : Lombok.
215. *Vulnus wallacei* Pall-Gergely, Otani & Hosoda, 2017<sup>TR</sup> : Pujut.
- LI. Chronidae**
216. *Vitrinopsis fruhstorferi* (Moellendorff, 1897)<sup>TR</sup> : Suwela.
- LII. Cyclophoridae**
217. *Cyclotus politus* (Sowerby I, 1843)<sup>TR</sup> : Lombok, Lepak.
218. *Leptopoma vitreum* (Lesson, 1830)<sup>TR\*nr</sup> : Lombok Timur.
- LIII. Diplommatinidae**
219. *Diplommatina lombockensis* Smith, 1898<sup>TR#</sup> : Lombok.
- LIV. Dyakiidae**
220. *Asperitas trochus nemorensis* (Müller, 1774)<sup>TR\*</sup> : Gili Lawang, Suwela.
221. *Sasakina oxyconus* (Martens, 1896)<sup>TR#</sup> : Gunung Rinjani.
222. *Sasakina perinsignis* (Smith, 1898)<sup>TR#</sup> : Gunung Rinjani.
- LV. Endodontidae**
223. *Philalanka nannophya* Rensch, 1932<sup>TR</sup> : Lombok.
- LVI. Enidae**
224. *Ena batarae* Rensch, 1930<sup>TR#</sup> : Segara Anak.
- LVII. Euconulidae**
225. *Coneuplecta collinae* (Smith, 1898)<sup>TR#</sup> : Suwela.
226. *Microcystis dyakana* (Godwin-Austen, 1891)<sup>TR</sup> : Lombok.
227. *Lamprocystis perglabra* Smith, 1898<sup>TR\*#</sup> : Suwela.
228. *Liardetia densetorta* (Moellendorff, 1897)<sup>TR</sup> : Segara Anak.
229. *Queridomus fimbriosus* (Quadras & Moellendorff, 1894)<sup>TR</sup> : Lombok.
- LVIII. Helicarionidae**
230. *Helicarion albellus* Martens, 1867<sup>TR</sup> : Lombok.
231. *Helicarion lombockensis* Rensch, 1830<sup>TR#</sup> : Lombok.
- LXIX. Pupinidae**
232. *Moulinsia floresiana* (Smith, 1897)<sup>TR\*</sup> : Suwela.
- LX. Pyramidelliade**
233. *Quirella humilis* (Preston, 1905)<sup>TR\*</sup> : Plawangan, Segara Anak.
- LXI. Subulinidae**
234. *Allopeas gracilis* (Hutton, 1834)<sup>TR</sup> : Narmada.
235. *Opeas soror* Smith, 1898<sup>TR#</sup> : Rinjani.
236. *Paropeas achatinaceum* (Pfeiffer, 1846)<sup>TR</sup> : Suwela, Sembalun.
237. *Prosopeas alberti* Haas, 1912<sup>TR#</sup> : Suwela, Sembalun.
238. *Prosopeas discernibilis* (Martens, 1896)<sup>TR#</sup> : Sembalun.
239. *Prosopeas lombockensis* (Smith, 1898)<sup>TR#</sup> : Lombok.

**LXII. Succineidae**

240. *Succinea javanica* Schepman, 1912<sup>TR</sup> : Segara Anak.

241. *Succinea minuta* Martens, 1867<sup>TR</sup> : Lombok.

**LXIII. Tornatellidae**

242. *Elasmias citreum* (Smith, 1898)<sup>TR#</sup> : Lombok.

**LXIV. Trochomorphidae**

243. *Videna bicolor* Martens, 1864<sup>TR</sup> : Suwela, Sembalun.

**LXV. Truncatellidae**

244. *Truncatella guerinii* Villa & Villa, 1841<sup>TR</sup> : Teluk Ekas.

**LXVII. Valloniidae**

245. *Pupisoma pulvisculum* (Issel, 1874)<sup>TR</sup> : Lombok.

**LXVII. Veronicellidae**

246. *Semperula maculata* (Templeton, 1858)<sup>TR\*nr</sup> : Narmada.

247. *Semperula variegatula* (Simroth, 1918)<sup>TR</sup> : Lombok

**LXVIII. Assimineidae**

248. *Assimineia brevicula* (Pfeiffer, 1855)<sup>MG\*</sup> : Lembar, Keruak, Praya Timur.

**LXIX. Ellobiidae**

249. *Carychium javanum* Möllendorff, 1897<sup>TR</sup> : Lombok.

250. *Cassidula aurisfelis* (Bruguière, 1789)<sup>MG\*</sup> : Sambelia.

251. *Cassidula nucleus* (Gmelin, 1791)<sup>MG\*</sup> : Gili Lawang, Sambelia.

252. *Cassidula sulculosa* (Mousson, 1849)<sup>MG\*</sup> : Gili Lawang, Sambelia.

253. *Cassidula vespertilionis* (Lesson, 1831)<sup>MG\*</sup> : Gili Lawang.

254. *Melampus* sp.<sup>MG</sup> : Lembar, Sekotong.

**LXX. Haminoeidae**

255. *Haminoea tenera* (A. Adams, 1850)<sup>MG MR\*</sup> : Praya Timur.

**LXXI. Onchidiidae**

256. *Peronia verruculata* (Cuvier, 1830)<sup>MG MR \*</sup> : Praya Timur.

257. *Platevindex* sp.<sup>MG MR\*</sup> : Praya Timur.

**LXXII. Potamididae**

258. *Cerithidea obtusa* (Lamarck, 1822)<sup>MG\*</sup> : Lembar, Batunampar, Teluk Ekas.

259. *Cerithidea quoyii* (Hombron & Jacquinot, 1848)<sup>MG\*</sup> : Lombok Tengah, Lembar, Keruak, Praya Timur.

260. *Cerithideopsilla alata* (Philippi, 1849)<sup>MG\*</sup> : Lembar, Keruak, Praya Timur.

261. *Cerithideopsilla cingulata* (Gmelin, 1791)<sup>MG\*</sup> : Lembar, Jerowaru, Keruak, Praya Timur.

262. *Telescopium telescopium* (Linnaeus, 1758)<sup>MG\*</sup> : Jerowaru, Gili Lawang.

263. *Terebralia palustris* (Linnaeus, 1767)<sup>MG\*</sup> : Lembar, Jerowaru, Keruak, Gili Sulat, Sambelia.

264. *Terebralia sulcata* (Born, 1778)<sup>MG\*</sup> : Lembar, Jerowaru, Keruak, Gili Sulat, Sambelia, Gili Lawang.

**LXXIII. Neritidae**

265. *Clithon bicolor* (Récluz, 1843)<sup>FW\*nr</sup> : Pringgabaya.

267. *Clithon corona* (Linnaeus, 1758)<sup>FW MG\*</sup> : Sambelia, Pantai Kuta.

268. *Clithon oualaniense* (Lesson, 1831)<sup>FW MG\*</sup> : Jerowaru, Sambelia.

269. *Nereina afra* (Sowerby I, 1836)<sup>FW</sup> : Gili Air.

270. *Neripteron bensoni* (Récluz, 1850)<sup>MG MR</sup> : Gili Meno, Gili Air, Gili Trawangan.

271. *Neripteron violaceum* (Gmelin, 1791)<sup>FW MG</sup> : Pantai Kuta.

272. *Nerita albicilla* Linnaeus, 1758<sup>MG MR</sup> : Tanjung Aan, Pantai Gerupuk, Gili Air, Gili Meno, Gili Trawangan, Pantai Kuta.

273. *Nerita chamaeleon* Linnaeus, 1758<sup>MR</sup> : Gili Meno, Gili Air, Gili Trawangan.

274. *Nerita costata* Gmelin, 1791<sup>MR\*</sup> : Pujut, Tanjung Aan, Pantai Gerupuk, Gili Air, Gili Meno, Gili Trawangan, Pantai Kuta.

275. *Nerita exuvia* Linnaeus, 1758<sup>MR\*</sup> : Sekotong, Pujut, Gili Meno, Gili Air, Gili Trawangan.

276. *Nerita georgina* Recluz, 1841<sup>MR</sup> : Gili Meno, Gili Air, Gili Trawangan.

277. *Nerita histrio* Linnaeus, 1758<sup>MR</sup> : Gili Meno, Gili Air, Gili Trawangan.

278. *Nerita litterata* Gmelin, 1791<sup>MR</sup> : Pantai Kuta.

279. *Nerita ocellata* Le Guillou, 1841<sup>MR\*nr</sup> : Pantai Senggigi, Pujut.

280. *Nerita planospira* Anton, 1838<sup>MR\*</sup> : Jerowaru, Lembar, Gili Lawang, Sambelia, Praya Timur, Gili Meno, Gili Air, Gili Trawangan.

281. *Nerita plicata* Linnaeus, 1758<sup>MR\*nr</sup> : Gili Air, Pantai Kuta, Pujut, Praya Timur, Gili Meno, Gili Air, Gili Trawangan.

282. *Nerita polita* Linnaeus, 1758<sup>MR\*</sup> : Gili Meno, Gili Air, Gili Trawangan, Pujut, Praya Timur.

283. *Nerita signata* Lamarck, 1822<sup>MR\*</sup> : Gili Air, Jerowaru.

284. *Nerita squamulata* Guillou, 1841<sup>MR\*nr</sup> : Praya Timur.

285. *Nerita undata* Linnaeus, 1758<sup>MR\*</sup> : Gili Air, Lembar, Jerowaru, Gili Lawang.

286. *Neritina turrita* (Gmelin, 1791)<sup>FW MG\*</sup> : Sambelia.

287. *Neritina variegata* Lesson, 1831<sup>FW MG\*</sup> : Sambelia.

288. *Neritina waigiensis* (Lesson, 1831)<sup>FW MG\*</sup> : Sambelia.

289. *Neritodryas cornea* Linnaeus, 1758<sup>FW\*</sup> : Sambelia.

290. *Septaria porcellana* (Linnaeus, 1758)<sup>FW\*nr</sup> : Labuan Haji.

291. *Smaragdia rangiana* (Récluz, 1841)<sup>MR</sup> : Pantai Kuta.

292. *Smaragdia souverbiana* (Montrouzier in Souverbie & Montrouzier, 1863)<sup>MR</sup> : Gili Meno, Gili Air, Gili Trawangan.

**DISCUSSION**

The present study documents 73 families and 292 species of gastropoda. Eighteen species were described from their type locality in Lombok Island. Eighty-six species (29%) had their



specimen stored in MZB. Generally, a family of gastropods consisting of species adapted to a similar habitat. However, the results of this study indicate that there are several families whose members can live in more than one habitat. *Carychium javanum* is the only member of Ellobiidae that found live outside the mangrove. This species also found in the mountainous forest in West Java (Heryanto, 2017). Nine species from three families (Neritidae, Pachychilidae, Thiariidae) found in freshwater and mangrove habitat. Previous study found two species of Neritidae (*Clithon corona*, *Neritina turrata*) that live in both freshwater and mangrove habitat (Mujiono, 2016). Twenty species from nine families (Batillariidae, Cerithiidae, Littorinidae, Muricidae, Planaxidae, Trochidae, Haminoeidae, Onchidiidae, Neritidae) found in mangrove and marine habitat. Littorinidae consists of five genera and 16 species, only seven species (all from genus *Littoraria*) adapted to mangrove and marine habitat. *Littoraria scabra* and *Littoraria carinifera* are arboreal species that live on mangrove canopy (Mujiono, 2016). The other five *Littoraria* species are probably have a similar preference. *Chicoreus* is the only one genus of Muricidae that specialized to hunt their prey in mangrove (Tan, 2008; Mujiono, 2016). However, they also frequently found in open marine water (Rahmasari et al., 2015).

A family is considered as freshwater/marine/terrestrial/mangrove if more than two-thirds of its species are live in a such habitat. The freshwater form consists of seven families (I-VII) and 15 species, eight of them occur in Pringgabaya. The marine form consists of 41 families (VIII-XLVIII) and 189 species, 90 of them occur in Gili Trawangan. The terrestrial form consists of 19 families (XLIX-LXVII) and 43 species, 13 of them occur in Suwela. The mangrove form consists of five families (LXVIII-LXXII) and 17 species, eight of them occur in Lembar. Meanwhile, Neritidae cannot be classified into the previous group because their member occupies a wide range of habitats such as marine, mangrove, and freshwater. They placed in a separate group because even in one genus, their species can be

adapted to two types of habitat (*Clithon*<sup>FW MG</sup>, *Neripteron*<sup>FW MG MR</sup>, *Nerita*<sup>MG MR</sup>, *Neritina*<sup>FW MG</sup>). There are five species which not previously recorded and considered as new records.

The data shows that Neritidae is the most diverse family with 28 species (9,5%) included in, followed by Conidae (23 species or 7,8%), Muricidae (18 species or 6,2%), and Littorinidae (16 species or 5,5%). Interestingly, the last three families are all marine forms. The freshwater form dominated by Thiariidae with six species. Terrestrial form dominated by two families, Ariophantidae and Subulinidae, each with seven species. Mangrove form dominated by Potamididae with seven species.

Figure 2 shows the diversity of gastropoda from 29 locations in Lombok Island. The average number of species of marine form is 42 (ranged 4-90 species), while for the non-marine form is 10 (ranged 1-22 species). The five most diverse locations were Gili Trawangan (90 species), Gili Meno (78 species), Gili Air (77 species), Pantai Kuta (65 species), and Pantai Gerupuk (29 species). Interestingly, they all are marine habitats. It is not surprising because the marine gastropoda was studied more extensively (Mudjiono & Sudjoko, 1994; Mudjiono, 1997; Hylleberg, 1999; Prahoro & Anthony, 2000; Reid, 2002; Yusron et al., 2010; Zusron et al., 2015; Parorrangan et al., 2018; Abdillah, 2019). Although they were extensively studied, however, there are 12 species which not previously recorded and considered as new records.

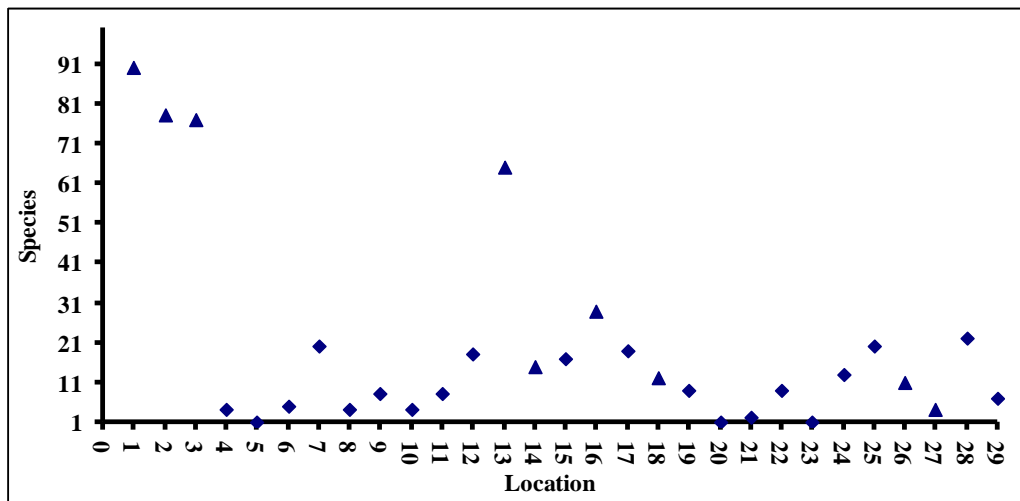


Figure 2. Cummulative of species number in each location. See Figure 1 for information of location's name. ▲ : marine form, ◆ : non-marine form.

The first and last study on terrestrial gastropoda of Lombok were made by Smith (1898) and Páll-Gergely et al., (2018). Terrestrial gastropoda of Lombok Island was mainly studied by Rensch (1931, 1932). He spent two years (1927-1928) for collecting and studying land snail from Lombok Timur. He found 36 land snail species during his study, half of them are new to science. His discoveries make Lombok as an important place for studying biodiversity, especially terrestrial gastropoda. Rensch (1934) had summarized the diversity of terrestrial gastropoda from other island in the Lesser Sunda Islands. He listed 46 species in Bali, 37 species in Sumbawa, 54 species in Flores, and 43 species in Sumba. The data shows only two species which not previously recorded and considered as new records.

Freshwater gastropoda of Lombok Island was mainly studied by Rensch (1934) who listed the occurrence of 12 species. The present study by Athifah et al., (2019) listed only seven species from the Taman Ayu area. The diversity of freshwater gastropods in the Lesser Sunda Islands tends to be lower than their terrestrial relatives. Rensch (1934) listed 12 species in Bali, 15 species in Sumbawa, 14 species in Flores, and 17 species in Sumba. The data shows only three species which not previously recorded and considered as new records.

Mangrove gastropoda of Lombok Island was first studied by Isnaningsih (2015) who listed the occurrence of 25 species. Mujiono (2016) continued her study and adds 17 other species. The present studies by Candri et al., (2018, 2020, 2020) and Wardhani et al., (2020) are rather confusing. They listed more species than the previous studies. However, it also contains some marine families (Cerithiidae, Cymatiidae, Cypraeidae, Nassariidae, Strombidade, Trochidae, Turbinidae) which only the visitors in the mangrove forest. True mangrove species are Assiminiidae, Ellobiidae, Onchidiidae, Potamididae and several species from Littorinidae, Muricidae, and Neritidae.

The gastropod diversity from the four habitat types in Lombok looks greatly different. This can be traced to the number of surveys or researches conducted. Marine species is dominant (189 species) because it was studied from ten locations and ten works of literature. It was followed by terrestrial species (43 species) that were studied from ten locations and five works of literature. Mangrove species (17 species) were studied from 12 locations and four works of literature. Freshwater species (15 species) were studied from ten locations and two works of literature.

From the present study, twenty-two new records for Lombok Island have been documented. It consists of three freshwater (*Radix rubiginosa*, *Faunus ater*, *Stenomelania rustica*), 12 marine (*Cerithium coralium*, *Cerithium zonatum*, *Clypeomorus pellucida*, *Euchelus atratus*, *Lyncina vitellus*, *Modulus tectum*, *Hexaplex cichoreum*, *Natica fasciata*, *Gyrineum natator*, *Siphonaria normalis*, *Tectus pyramis*, *Turbo chrysostomus*), two terrestrial species (*Leptopoma vitreum*, *Semperula maculata*), and five Neritidae (*Clithon bicolor*, *Nerita ocellata*, *Nerita plicata*, *Nerita squamulata*, *Septaria porcellana*). This finding is important for the biodiversity information from this island.

The species distributions were ranged from one to 12 from 29 observed locations. *Littoraria scabra* is the most widely distributed species which occurs in 12 locations. *Nerita planospira* occurs in eight locations. Seven species (*Tarebia granifera*, *Cerithium punctatum*, *Drupella margariticola*, *Planaxis sulcatus*, *Tectus fenestratus*, *Nerita costata*, *Nerita plicata*) occur in seven locations, while five species (*Melanoides tuberculata*, *Pictocolumbella ocellata*, *Littoraria carinifera*, *Terebralia sulcata*, *Nerita albicilla*) occur in six locations.

Gastropods are slow-moving animals. Aquatic species do not actively move through terrestrial habitats, terrestrial species do not actively disperse through water, those habitats act as the physical barriers. However, their distribution is beyond our expectations. Two methods of dispersal were known, active, and passive dispersal (Kramarenko, 2014). Gastropods are moving to search for food, a couple for mating, hiding from their enemies, or unsuitable physical condition (Chelazzi, 1991). Movement capabilities of some species have been recorded. For terrestrial species: *Albinaria coerulea* (Clausiliidae) moves along 750 cm during 30 hari (Giokas & Mylonas, 2004), *Thersites mitchellae* (Camaenidae) moves along 7.445 cm during 18 days (Parkyn et al., 2014), *Lissachatina fulica* (Subulinidae) moves along 1.672 cm during 3 days (Mujiono et al., 2019). For aquatic species: *Pomacea paludosa* (Ampullariidae)

moves along 600 cm/day (Darby et al., 2002), *Neritina punctulata* (Neritidae) moves along 7.400 cm/day (Pyron & Covich, 2003), *Tarebia granifera* (Thiaridae) moves along 5.760 cm/day (Snider & Gilliam, 2008).

Another way for gastropoda to be dispersed is by passive dispersal. Gastropoda does not actively move but being transported by another animal, by human, or by natural disaster. Insect and bird play important role in gastropod's dispersal. Aerial insect such bee (Hymenoptera) frequently bring small arboreal gastropoda which accidentally attached to their legs while pollinating the flower. Water beetles (Coleoptera) also sometimes bring small aquatic gastropoda which accidentally attached to their outer wings while swimming. Because the body size of the vectors is small, they only can transport gastropoda locally. Bird with their ability to fly can transport gastropoda in much far distant, even to a different island. Arboreal and aquatic birds can bring larger gastropoda which accidentally attached to their legs or wings. Terrestrial gastropoda can be transported by migrating birds as far as 9000 km (Gittenberger et al., 2006). Natural disasters such as hurricanes can blow and bring both terrestrial and aquatic gastropods into another place in 28 km distance. While landslide can also bring some burrowing gastropoda down from the hill into the lower ground locally (Rees, 1965). Drift wood can be a vector for oceanic dispersal of some aquatic gastropoda (Kano et al., 2013).

The five most diverse locations are popular as the destination for marine tourism. There is a strong correlation between the location of tourism and the number of species found. Commonly, marine tourism is the favourite destination for most travelers. Some of them collecting the gastropods while swimming or diving. Gastropoda can be abundant in the littoral zone, the same area where peoples are swim or dive. It is good to inform the biodiversity of marine fauna (gastropoda) to the people using tourism as a tool. Some of gastropod's families are known to be venomous, such as Cone (Conidae) and Auger (Terebridae) (Santhanam, 2017). All the members

of Conidae are found in the five locations above, while the Terebridae are found in Pantai Kuta and Batunampar. Three species of Cone (*Conus imperialis*, *Conus lividus*, *Conus marmoreus*) are dangerous, even deadly. Their venom is capable of paralyzing people who accidentally got bitten. They maybe die within hours if they are not quickly treated. Three species of Auger (*Duplicaria spectabilis*, *Hastula hectica*, *Oxymeris maculata*) are also dangerous. However, their bites are less severe than the Cone (Santhanam, 2017). Another dangerous family is Murex (Muricidae). Their shell are spinous, some species have long and sharp spines. Peoples will get injured if they accidentally step on it. We can warn the peoples about these three dangerous gastropod's families and tell them never to touch or catch to avoid being injured.

Despite their dangerous member of marine form, some families are known for their beautiful shells (Costellariidae, Cypraeidae, Mitridae, Olividae, Tegulidae, Volutidae) or being cultured for their shell and valuable meat (Haliotidae, Strombidae, Trochidae, Turbinidae) (Poutiers, 1998). Two species of Abalone (*Haliotis asinina* and *Haliotis squamata*) have been successfully cultured in Lombok (Kuncoro et al., 2013; Sinaga et al., 2015).

Based on the result of the present study, the diversity of mainland Lombok is less extensively studied compare with its satellite islands. Marine gastropods are mainly recorded from its five satellite islands. The composition of terrestrial gastropods is less diverse than Bali with 121 species (Vermeulen & Whitten, 1998) while freshwater gastropods also less diverse than Sumba with 23 species (Bentham Jutting, 1955). Therefore, more extensive studies are needed to uncover the diversity of gastropoda in Lombok Island more precisely. Island size may also contribute to animal diversity. Compared with the other four islands (Bali 5.780 km<sup>2</sup>, Sumba 11.060 km<sup>2</sup>, Flores 13.540 km<sup>2</sup>, and Sumbawa 15.214 km<sup>2</sup>) in the Lesser Sunda islands, Lombok is the smallest (4.725 km<sup>2</sup>). Commonly, species diversity will increase following the island's size, as known as the theory of island biogeography.

Because of the habitat in a small island (Lombok) is less varied than the larger one. Small islands can only support fewer species to life (Guo, 2015).

Two previous studies on the inventory of gastropoda species from other islands have been carried out. 875 species from 128 families listed from Singapore. It consist of 97 families and 723 marine species, five families and 66 mangrove species, 13 families and 50 terrestrial species, 13 families and 36 freshwater species (Tan & Woo, 2010). 243 species from 65 families listed from 20 islands in the Thousand Islands, Jakarta. It consist of 52 families and 214 marine species, nine families and 16 terrestrial species, three families and 13 freshwater species (Mujiono, 2015). Both studies show the same trends with the present study, marine species always dominant and freshwater species is less diverse than others.

## CONCLUSION

This study summarizes the diversity of gastropods in Lombok. Seventy-three families and 292 species of gastropods were documented. Eighty six species (29%) of the specimens are kept at the Bogor Zoological Museum and 22 species are a new record for Lombok Island. The list is dominated by marine species (189 species or 65%), half of which are recorded from the three satellite islands. The diversity of mainland Lombok is still less extensively studied than its satellite islands. More extensive study is needed in the future.

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