Some intertidal gastropods and bivalves of Thae Chaung Coastal area in Northern Rakhine state of Myanmar

Thura Htun, Khin Myo Myo Tint and Naung Naung OO

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Abstract

Rakhine Coastal Region has a rich diversity of marine life with fisheries. However, there is no publication of basic information of marine bivalves and gastropods such as identification and ecological habitats in Thae Chaung intertidal water, northern Rakhine Coastal Region. The current research on marine mollusks was conducted and emphasize on small geographical area of Thae Chaung intertidal area in December 2019. A total of 11 species belonging to 5 orders, 8 families and 11 genera of gastropods and 6 species belonging to 4 orders, 4 families and 5 genera of bivalves reported from study area were reported. This research paper describes the identification of some economic importance of marine mollusks from Thae Chaung intertidal water in northern Rakhine Coastal Region.

Keywords: mollusks, bivalve, gastropod, intertidal, Thae Chaung Coastal area, northern Rakhine, Rakhine Coastal region

Introduction

Myanmar has a long coastline of around 2400 km² with many marine resources, and is thought to be one of the most undeveloped coastlines in mainland Southeast Asia [1]. The coast is divided into three coastal regions; the Rakhine Coastal Region (from the mouth of Naaf River to Mawdin Point, about 740 km in length), the Ayeyarwady Delta and the Gulf of Martaban Coastal Region (about 460 km in length) and the Tanintharyi Coastal Region (from the Gulf of Martaban to the mouth of the Pakchan River, about 1200 km in length) [2].

Northern Rakhine coastal area is the portion of Rakhine Coastal Region of Western Myanmar, and is popular for both local and foreign tourists for its beautiful islands, beaches, and submarine fauna and flora. This includes Nantha Island and near Mayyu estuary designated as Ramsar wetland site in Myanmar, Sittway Point and Hnget Gaung Taung (Myengu Kyun = Western Bo Ron Ga Island), a large island in northern Rakhine State. Land development can be found in many areas around the island.

As Rakhine state is closely related to the coast, the costal and marine ecosystem of this state provides food sources, 20 percents of regional people are working in fishery industry, 90 percents of fishery products are mainly transported to mainland and China and the left 10 percents are consumed by local people.

Furthermore, shellfishes; bivalves and gastropods, which play a vital role, are economic importance. Some are utilized to make handicraft and the other are heavily harvested as food for regional populace. The mollusks are among the most diverse marine invertebrates on the coastal tropical environments and the vast majority is found in intertidal, estuarine and coastal lagoons, and in the shallow areas of continental shelf [3, 4].

The phylum mollusca is one of the most distinct animal groups which comprising 100,000 to 200,000 species with above 52,000 species have been identified and characterized [5, 6]. In Myanmar, there were about 160 species of gastropods and 120 species of bivalves had been reported [7, 8]. Mollusca is further divided into Scaphopoda, Gastropoda, Cephalopoda, Bivalvia, Polyplacophora, Caudofoveata, Solenogastres, and Monoplacophora [9]. People are capturing the molluscs because of their taste and attractiveness characteristics. Molluscs have been utilized for several years for the various purposes.
Shellfishes are used to create the jewelry decoration. Some molluscs are very harmful to humans. For example, some cone shells can inject the people who get a deadly toxic effect \[^10\]. Many molluscs species are apply in traditional medication in various countries of the world \[^11\]. Molluscs play an important role in marine ecosystem, they perform as refining water quality through filtration, balancing algal bloom and improving habitat and substratum complexity through ecosystem engineering \[^12\].

The research area of Thae Chaung is located in the most south-western part of the Sittway. This place is not connected with Sittway Point is not far away from mouth of Kaladan River. Many people from this village rely on livelihood fisheries. Thae Chaung intertidal water owns different habitats; sandy beach, muddy sand and rocky fringe. It provides not only shelter and nurseries for marine species but also rich food sources for villagers. This paper aims to evaluate the preliminary checklist of marine shellfishes; bivalves and gastropods of Thae Chaung intertidal coastal water.

Materials and Methods
This study was conducted in Thae Chaung intertidal water of different habitats such as sandy beach, rocky shore, and mudflat of northern Rakhine Coastal Region in December 2019 (Fig 1). During the survey, samplings of mollusc (gastropods and bivalves) were taken with random hand picking. Both dead and alive specimens were collected in the field. Samples were carefully brought to department laboratory (Marine Science Department, Sittway University) and all collecting samples were soaked in the solution of caustic soda and then was cleaned and dried. In which some alive specimens, fresh meat tissue and some epifaunas were removal with forceps. We brushed the shells to use for further taxonomic works. All shells were preserved in 70% alcohol for two days, after those specimens were washed for a few hours and dry again in the sun for one day. We took the digital images for each species by using olive oil and pure cotton for a little bit shell lighting. Some of which collecting samples are stored in the laboratory and other are displayed at the Museum of Marine Science Department, Sittway University (MMSD, SU). The classification of bivalves and gastropods was based on shell morphological characteristics such as shape; color and texture according to the literatures of Soe Thu \[^7\], Dance \[^13\], Feinberg \[^14\], Maung win et al \[^15\], Taat Tun Thu \[^16\], Aye Thant Zin et al \[^17\], Thaw Zin Naing Tun et.al \[^18\], Naung Naung Oo \[^19\] and Hossain et al \[^20\].

Results and Discussion
The preliminary checklist of marine bivalves and gastropods survey was conducted in Thae Chaung intertidal water in December 2019. This survey was carried out for the intertidal mollusks species in different types of substratum; sandy beach, muddy sand and rocky fringe (Table 1). A total of 17 species of mollusks were recorded on which 11 species of gastropods and 6 species of bivalves were shown in table (1) and figure (2).

| Sr. No. | Species | Common Name | Local Name |
|---------|---------|-------------|------------|
| 1       | Nerita lineata Gmelin, 1791 | Linear nerite | Jake/ Kha-yu-ma |
| 2       | Turritella duplicata (Linnaeus, 1758) | Duplicate turret shell | Kha-yu-sae-di |
| 3       | Natica tigrina (Röding, 1798) | Spot necklace shell | Kha-yu-lone |
| 4       | Polinices didyma (Röding, 1798) | Common moon snail | Phoe-la-min |
| 5       | Bursa elegans (G. B. Sowerby I, 1835) | Elegant frog shell | Sue-kha-yu |
| 6       | Thais mutabilis (Link, 1807) | Common rock shell | Kyauk-lone |
| 7       | Murex pecten Lightfoot, 1786 | Venus comb murex | Kha-yu-nga-zin-yine |
| No. | Species | Common Name | Habitat |
|-----|---------|-------------|---------|
| 8   | *Babylonia formosae* (G. B. Sowerby II, 1866) | Mud whelk | Nan-dar-hlaing |
| 9   | *Nassarius olivaceus* (Bruguière, 1789) | Dog whelk | Kha-yu |
| 10  | *Pugilina ternatana* (Gmelin, 1791) | Ternate melongena | Kha-yu |
| 11  | *Turris unedo* Kiener, 1839 | Common turrid | Kha-yu-pyat-thet |
| 12  | *Anadara granosa* (Linnaeus, 1758) | Granular ark | Thwe-gone/ Gin |
| 13  | *Saccostrea cucullata* (Born, 1778) | Hooded oyster | Sar-ka-mar |
| 14  | *Crassostrea gigas* (Thünberg, 1793) | Giant cupped oyster | Ka-mar |
| 15  | *Donax scortum* (Linnaeus, 1758) | Leather donax | Thae-kha-yu |
| 16  | *Mactra mera* Reeve, 1854 | Plain trough shell | Pae-late-pyar |
| 17  | *M. violacea* Gmelin, 1791 | Violet trough shell | Pae-late-pyar |

**Bivalves**

| No. | Species | Common Name |
|-----|---------|-------------|
| 12  | *Anadara granosa* (Linnaeus, 1758) | Granular ark |
| 13  | *Saccostrea cucullata* (Born, 1778) | Hooded oyster |
| 14  | *Crassostrea gigas* (Thünberg, 1793) | Giant cupped oyster |
| 15  | *Donax scortum* (Linnaeus, 1758) | Leather donax |
| 16  | *Mactra mera* Reeve, 1854 | Plain trough shell |
| 17  | *M. violacea* Gmelin, 1791 | Violet trough shell |

**Fig 2(1-17):** Intertidal gastropods and bivalves in study area. (1) *Nerita lineata* Gmelin, 1791, (2) *Turritella duplicata* (Linnaeus, 1758), (3) *Natica tigrina* (Röding, 1798), (4) *Polinices didyma* (Röding, 1798), (5) *Bursa elegans* (G. B. Sowerby I, 1835), (6) *Thais mutabilis* (Link, 1807), (7) *Murex pecten* Lightfoot, 1786, (8) *Babylonia formosae* (G. B. Sowerby II, 1866), (9) *Nassarius olivaceus* (Bruguière, 1789), (10) *Pugilina ternatana* (Gmelin, 1791), (11) *Turris unedo* Kiener, 1839, (12) *Anadara granosa* (Linnaeus, 1758), (13) *Saccostrea cucullata* (Born, 1778), (14) *Crassostrea gigas* (Thünberg, 1793), (15) *Donax scortum* (Linnaeus, 1758), (16) *Mactra mera* Reeve, 1854, (17) *M. violacea* Gmelin, 1791.

### Description of shell characteristics in study area

**Nerita lineata** Gmelin, 1791

| Characteristic       | Description                                    |
|----------------------|------------------------------------------------|
| Shell shape          | Neritic form                                   |
| Spiral whorl         | Apex is blunt, low, many concentric lines      |
| Body whorl           | Large, swollen with both side                   |
| Aperture type        | Wide, broad, slightly rounded                  |
| Columella type       | Thick or thin present, sometime absent          |
| Operculum type       | Calcareous                                     |
| Umbilicus            | Absent                                         |
| Siphonal canal       | Absent                                         |
| Colouration          | Yellowish background, many black spiral lines  |
| Shell size           | 2.5 cm height, 3 cm width                      |

**Turritella duplicata** (Linnaeus, 1758)

| Characteristic       | Description                                    |
|----------------------|------------------------------------------------|
| Shell shape          | Turritiform                                     |
| Spiral whorl         | Long and narrow but slightly broad to body whorl |
| Body whorl           | Globose, short                                  |
| Aperture type        | Oval to rounded                                 |
| Columella type       | Narrow, slightly curve, thick                   |
| Operculum type       | Chitinous form                                  |
| Umbilicus            | Absent                                         |
| Siphonal canal       | Absent                                         |
| Colouration          | Yellowish to pale orange, brownish with strong keel |
| Shell size           | 12 cm height, 2.5 cm width                      |
**Natica tigrina** (Röding, 1798)

| Character            | Description                                      |
|----------------------|--------------------------------------------------|
| Shell shape          | Naticoid form                                    |
| Spiral whorl         | Blunt, small                                     |
| Body whorl           | Globose, large, wide body whorl                  |
| Aperture type        | Semi circular shape                              |
| Columella type       | Thin and straight                                |
| Operculum type       | Chitinous form                                   |
| Umbilicus            | Present, wide and deep                           |
| Siphonal canal       | Absent                                           |
| Colouration          | Covered with many brown spots                    |
| Shell size           | 3 cm height, 3.5 cm width                        |

**Polinices didyma** (Röding, 1798)

| Character            | Description                                      |
|----------------------|--------------------------------------------------|
| Shell shape          | Naticoid form                                    |
| Spiral whorl         | Very low spiral with blunted apex                |
| Body whorl           | Large, solid and massive with smooth outer shell surface |
| Aperture type        | Slightly rounded, narrow                         |
| Columella type       | Thick with strong callus                         |
| Operculum type       | Chitinous form                                   |
| Umbilicus            | Deep and narrow                                  |
| Siphonal canal       | Absent                                           |
| Colouration          | Pale yellowish brown, grayish white              |
| Shell size           | 2 cm height, 2.5 cm width                        |

**Bursa elegans** (G. B. Sowerby I, 1835)

| Character            | Description                                      |
|----------------------|--------------------------------------------------|
| Shell shape          | Turbiniform                                      |
| Spiral whorl         | Low, sharp apex, narrow suture                   |
| Body whorl           | Large, covered spiral blunted spines, strong longitudinal spiral threads |
| Aperture type        | Oval or slightly long                            |
| Columella type       | Long and thin                                    |
| Operculum type       | Chitinous form                                   |
| Umbilicus            | Present and shallow                              |
| Siphonal canal       | Present, deep and narrow, curved backward        |
| Colouration          | Creamy white, bright yellowish brown             |
| Shell size           | 7 cm height, 4.5 cm width                        |

**Thais mutabilis** (Link, 1807)

| Character            | Description                                      |
|----------------------|--------------------------------------------------|
| Shell shape          | Turbiniform                                      |
| Spiral whorl         | Apex is blunt, shallow sutures, narrow shoulders |
| Body whorl           | Solid, large, covered with spiral lines          |
| Aperture type        | Rounded, narrow                                  |
| Columella type       | Strong and thick                                 |
| Operculum type       | Chitinous form                                   |
| Umbilicus            | Present, deep and wide                           |
| Siphonal canal       | Present, short                                   |
| Colouration          | Brownish white, covered with black bands         |
| Shell size           | 4 cm height, 2.5 cm width                        |

**Murex pecten** Lightfoot, 1786

| Character            | Description                                      |
|----------------------|--------------------------------------------------|
| Shell shape          | Fusiform                                         |
| Spiral whorl         | Low spiral with blunted apex                     |
| Body whorl           | Large, wide, low spiral line present and distinct longitudinal spines |
| Aperture type        | Rounded and narrow                               |
| Columella type       | Strong and thick                                 |
| Operculum type       | Chitinous form                                   |
| Umbilicus            | Present and shallow                              |
| Siphonal canal       | Present, long like groove                        |
| Colouration          | Yellowish white                                  |
| Shell size           | 7.5 cm height, 4 cm width                        |

**Babylonia formosae** (G. B. Sowerby II, 1866)

| Character            | Description                                      |
|----------------------|--------------------------------------------------|
| Shell shape          | Naticoid form                                    |
| Spiral whorl         | Low, slightly deep and narrow shoulder            |
| Body whorl           | Solid, large and covered with white and brown path, suture is deep |
| Aperture type        | Narrow and oval                                  |
| **Columella type** | Strong and thick |
|--------------------|------------------|
| **Operculum type** | Chitinous form   |
| **Umbilicus**      | Oval and narrow  |
| **Siphonal canal** | Present          |
| **Colouration**    | Brownish white patch |
| **Shell size**     | 4 cm height, 2.5 cm width |

**Nassarius olivaceus** (Bruguière, 1789)

| **Shell shape** | Naticoid form |
|-----------------|---------------|
| **Spiral whorl**| Narrow apex, spiral with shallow groove |
| **Body whorl**  | Thick and slightly swollen |
| **Aperture type**| Oval and narrow |
| **Columella type** | Thin, straight |
| **Operculum type** | Chitinous form |
| **Umbilicus** | Absent |
| **Siphonal canal** | Present and slightly short |
| **Colouration** | Brownish grey to yellowish |
| **Shell size** | 3.5 cm height, 1.7 cm width |

**Pugilina ternatana** (Gmelin, 1791)

| **Shell shape** | Fusiform |
|-----------------|---------|
| **Spiral whorl** | Short, apex is blunted, broad shoulder with short spin |
| **Body whorl**  | Large, solitary, massive erect huge spine |
| **Aperture type** | Wide and thick |
| **Columella type** | Thin and curve |
| **Operculum type** | Chitinous form |
| **Umbilicus** | Present (distinct when mature) |
| **Siphonal canal** | Present, long and slightly straight |
| **Colouration** | Yellowish grey to dark grey |
| **Shell size** | 8 cm height, 4.5 cm width |

**Turris unedo** Kiener, 1839

| **Shell shape** | Turriform |
|-----------------|---------|
| **Spiral whorl** | Slightly long, narrow to apex, distinct longitudinal ribs |
| **Body whorl**  | Narrow, short |
| **Aperture type** | Thin and straight |
| **Columella type** | Calcareous |
| **Operculum type** | Oval and thin, |
| **Umbilicus** | Absent |
| **Siphonal canal** | Present, curve to backward |
| **Colouration** | Grayish yellow to gray |
| **Shell size** | 6 cm height, 2.3 cm width |

**Anadara granosa** (Linnaeus, 1758)

| **Shell shape** | Solid, thick, equivalent, broadly oval shape |
|-----------------|---------------------------------------------|
| **Umbonal type** | Hook like |
| **Muscular scar** | Present |
| **Ligament** | Internal |
| **Outer layer** | White parallel ribs, 2 or more layer teeth |
| **Inner layer** | Smooth and white |
| **Teeth pattern** | Granulated, small similar teeth |
| **Pallial sinus** | Present |
| **Colouration** | White to yellow brown |
| **Shell size** | 12 cm height, 2.5 cm width |

**Saccostrea cuccullata** (Born, 1778)

| **Shell shape** | Oyster like, circular to oval |
|-----------------|-------------------------------|
| **Umbonal type** | Large, no sculpture |
| **Muscular scar** | Close to pallial line |
| **Ligament** | Internal |
| **Outer layer** | Rough with thick |
| **Inner layer** | Pearly white |
| **Teeth pattern** | Converging toward |
| **Pallial sinus** | Present |
| **Colouration** | Internally white, external purple, black, brown, |
| **Shell size** | 4 cm height, 2.5 cm width |
### Crassostrea gigas (Thünberg, 1793)

| Characteristic                  | Description                                                                 |
|--------------------------------|-----------------------------------------------------------------------------|
| Shell shape                    | Wide oval, thick and very rugose                                             |
| Umbo type                      | Prominent and enrolled                                                      |
| Muscular scar                  | Single, dark                                                                |
| Ligament                       | Internal                                                                    |
| Outer layer                    | Hard and oval                                                               |
| Inner layer                    | Concave, quite deep and cup-shaped                                           |
| Teeth pattern                  | Sharp erosive, asymmetric                                                   |
| Pallial sinus                  | Present                                                                    |
| Colouration                    | Whitish, inner shell white, deep purple outermost shell                     |
| Shell size                     | 4 cm height, 3.5 cm width                                                  |

### Donax scortum (Linnaeus, 1758)

| Characteristic                  | Description                                                                 |
|--------------------------------|-----------------------------------------------------------------------------|
| Shell shape                    | Trigonal                                                                    |
| Umbo type                      | Darker hues                                                                 |
| Muscular scar                  | Present, both side posterior and interior                                   |
| Ligament                       | External                                                                    |
| Outer layer                    | Radiating line                                                              |
| Inner layer                    | White, purplish, polished                                                   |
| Teeth pattern                  | Two cardinal tooth                                                         |
| Pallial sinus                  | Present                                                                    |
| Colouration                    | Dark green, variation color                                                  |
| Shell size                     | 4 cm height, 6 cm width                                                     |

### Mactra mera Reeve, 1854

| Characteristic                  | Description                                                                 |
|--------------------------------|-----------------------------------------------------------------------------|
| Shell shape                    | Oval, triangular shape                                                      |
| Umbo type                      | Prominent and elevated                                                      |
| Muscular scar                  | Two subequal adductor                                                       |
| Ligament                       | Internal brown                                                              |
| Outer layer                    | Thick smooth                                                                |
| Inner layer                    | Whitish                                                                    |
| Teeth pattern                  | Interior cardinal teeth, V-shaped                                           |
| Pallial sinus                  | Short and oval                                                              |
| Colouration                    | White, brown                                                                |
| Shell size                     | 4 cm height, 5 cm width                                                     |

### Matra violacea Gmelin, 1791

| Characteristic                  | Description                                                                 |
|--------------------------------|-----------------------------------------------------------------------------|
| Shell shape                    | Large, thin, absolutely radiate                                              |
| Umbo type                      | Prominent and elevated                                                      |
| Muscular scar                  | Present, same side anterior and posterior                                   |
| Ligament                       | Internal, well develop                                                      |
| Outer layer                    | Smooth with spiral line                                                     |
| Inner layer                    | Smooth                                                                     |
| Teeth pattern                  | Cardinal tooth present                                                     |
| Pallial sinus                  | Rounded, shallow and non-confluent                                           |
| Colouration                    | Violet                                                                      |
| Shell size                     | 2.5 cm height, 3.5 cm width                                                 |

### Table 2: Habitats of some intertidal gastropods and bivalves in study area

| Species                      | Habitats characterization                                                                 |
|------------------------------|--------------------------------------------------------------------------------------------|
| *Nerita lineata* Gmelin, 1791| Very common in the upper part of shores, often in crevices and pits of rock benches, or on branches of littoral trees overhanging the water. |
| *Turritella duplicata* (Linnaeus, 1758) | On sub-tidal sand and mud bottoms.                                                         |
| *Natica tigrina* Röding, 1798 | On sandy bottoms. Mainly sub-littoral, from shallow sub-tidal waters to a depth of about 30 m. |
| *Polinices didyma* Röding, 1798 | On sandy to muddy bottoms. Inter tidal to shelf zones.                                      |
| *Bursa elegans* (G. B. Sowerby I, 1835) | Mud and muddy-sand bottoms.                                                               |
| *Thais mutabilis* (Link, 1807) | Common in various shallow water habitats, rocks, coral reefs, or clean to muddy sand bottoms. |
| *Murex pecten* Lightfoot, 1786 | On sandy to muddy bottoms of coral reef areas and on the continental shelf.               |
| *Babyllonia formosae* (G. B. Sowerby II, 1866) | On sand and mud bottoms.                                                                 |
| *Nassarius olivaceus* Bruguière, 1789 | Very common on muddy sand flats.                                                          |
| *Pugilina ternatana* (Gmelin, 1791) | Common on soft bottoms. Sub-littoral and offshore, mainly at depths between 10 to 50 m. |
| *Turris unedo* Kiener, 1839 | Common on sub-littoral muddy bottoms, to a depth of about 30 m.                         |
Molluscs are the most part of benthonic but gastropods have developed those pelagic groups: janthinids, heteropods and pteropods, all of which have been represented in Myanmar waters [7]. Bivalves are soft-bodied mollusks enclosed by two valves joined by an elastic ligament. The mollusks are very common in aquatic environments, including freshwater, brackish water, and saltwater [21].

In Myanmar, the earliest reports on marine shell fish had been reported by Mason [22-24]. Consequently, Mann also reported on Burmese molluscs along three coastal waters of Myanmar [25]. In the 1980s, Mar Lar Myo Sein, Soe Thu and Aye Thida Thein reported a common species of brackish-water molluscs inhabit in Rakheik coastal region [8, 26-27]. Soe Thu had also recorded the diversity of seashells from Ngapali, Maungmagan and various localities of Myanmar coastal waters [28-30]. In the recent year 2019, Naung Naun Oo had studied Turban shells of Andrew Bay, southern Rakhine coastal region [31]. In the Ayeyarwady Coastal Region, Aye Thant Zin et al. had been reported preliminary survey of gastropods and Pelecypods around the Sin-Ma village, Pathein Township [17]. In the year 2011, the spat collection grown out culture of oyster in Shwe Thaung Yan coastal area had been carried out by Htay Aung [32]. In Taninthayi Coastal Region, Kyaw Myint had published a checklist comprising 248 species of marine gastropods, bivalves and cephalopods in Moscos Island. His reported list included 72 families but was not yet perfect checklist in Myanmar [33]. A systematic account on some marine gastropods, pelecypods (= Bivalves) and cephalopods in Mon coastal area was conducted by Jar San Naung Naung Oo had studied Turban shells of Andrew Bay, southern Rakhine coastal region [31].

In the Ayeyarwady Coastal Region, Aye Thant Zin et al. had been reported preliminary survey of gastropods and Pelecypods around the Sin-Ma village, Pathein Township [17]. In the year 2011, the spat collection grown out culture of oyster in Shwe Thaung Yan coastal area had been carried out by Htay Aung [32]. In Taninthayi Coastal Region, Kyaw Myint had published a checklist comprising 248 species of marine gastropods, bivalves and cephalopods in Moscos Island. His reported list included 72 families but was not yet perfect checklist in Myanmar [33]. A systematic account on some marine gastropods, pelecypods (= Bivalves) and cephalopods in various localities of Myanmar had been carried out by Jar San reported morphology and distribution cephalopods in Mon coastal areas [34]. Naung Naung Oo had conducted the study of the marine gastropods from the Mon Coastal area [35]. Moreover, Thaw Zin Naing Tun et al., Phoo Thet Su Win, Sint Sint Hlaing, Khin Myo Thin, Su Pyae Tun, Aung Ko Latt, Aung Pyae Phyo and Win Win Nwe had studied the estuarine and marine mollusks in their respectively along Myanmar coastal water [17, 36-43]. However, distribution pattern, habitat preferences and seasonal variation remained unknown to give much more information.

Currently reported all bivalves’ species are providing not only harmony for intertidal habitats but also utilized food for local consumption. Bivalves are mostly found in mudflat while gastropods inhabit all types of habitats. In the sand beach, 2 species of bivalves; Macrula mera (Reeve, 1854), M. violacea (Gmelin, 1791) and 3 species of gastropods; Turritella duplicata (Linnaeus, 1758), Natica tigrina (Röding, 1798) and Murex pecten (Lightfoot, 1786) were collected, in which the highest number of T. duplicata (Linnaeus, 1758) are found in sandy beach. These species have been used to create ornamentation found in souvenir shop for selling local markets. The muddy sand habitat of Thae Chaung intertidal water, 6 species of gastropods and 4 species of bivalves were found. Maximum number of molluscs was recorded in this habitat. Local people have used Pugilina ternatana (Gmelin, 1791) as food for fishery purposes. Approach to the rocky fringe, Nerita lineata Gmelin, 1791 and Thais mutabilis Link, 1807 was recorded from different habitats at intertidal zone such as mudflat, sandy beach and tide pool, the lowest number of species occurred in this area.

Conclusion

A total of 17 species of molluscs were found in the present study area. The result might not represent the actual diversity because there was a preliminary checklist survey which represented a small scale area of northern Rakhine coast. However, this paper will help everybody who need fundamental checklist of molluscs species data. Extended study should be conducting seasonally collecting mollusks data in intertidal to deep water. Using advanced methods will evaluate specific value. Long term data collections supported to determine seasonal abundance and distribution to study the adaptation between mollusks diversity and environmental condition in study areas.

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