

# Common Marine Molluscan Shells of Maharashtra

S.K. Pati • R.M. Sharma • A.V. Vartak



SAHYADRI NISARGA MITRA

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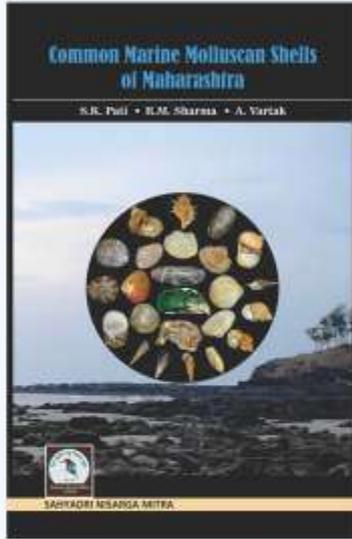
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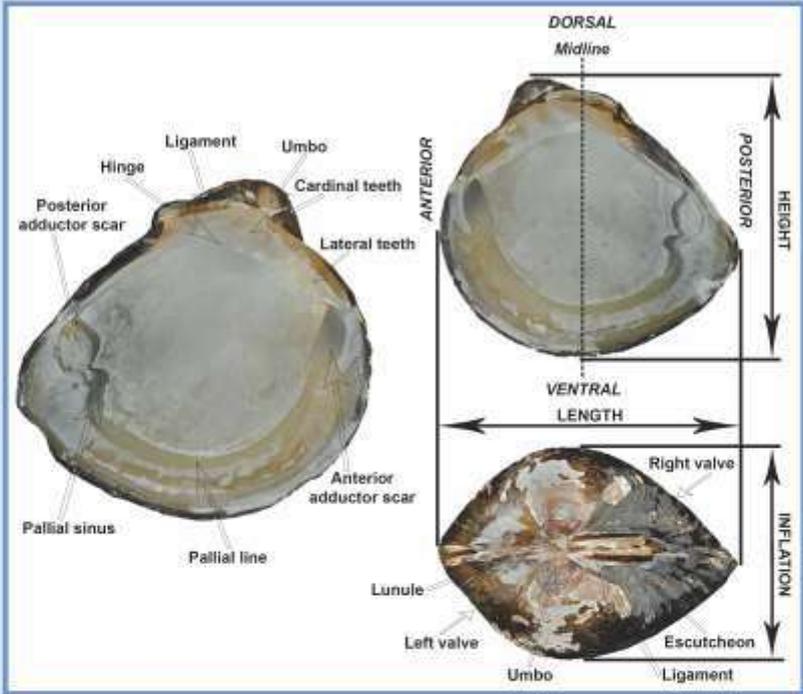
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## INTRODUCTION

When we visit any coast, especially sandy beaches, different groups of marine animals we see scattered along the coast. Of which, the molluscs having quite impressive and beautiful external shells attract our attention. In fact, molluscs are soft-bodied animals, and most of them have an external shell. Interestingly, “Mollusca” is the largest phylum in the marine environment. Marine molluscs show a great diversity in their shape, size, structure, behaviour, and habitat. They can occupy coral-reefs, mangroves, seagrass beds, rocky coasts, sandy beaches, muddy shores, and tidal flats. Marine molluscs are nevertheless abundant in rocky intertidal and coral-reef ecosystems than any other marine habitats. Molluscs play significant ecological roles in marine ecosystems as predators, preys, herbivores, carnivores, scavengers, deposit feeders, suspension feeders, commensals, or parasites. Since time immemorial, people have been taking advantage of molluscs in various ways like food, medicines, trade, commerce, ornaments, tools, industries, arts, architecture, culture, music, communication and clothing.

The study of molluscs is known as malacology, while the study of their shells is known as conchology. Conchologists mainly deal with two major classes of the phylum Mollusca : **1) Bivalvia**, with two calcified valves (e.g., clams, cockles, or oysters) and **2) Gastropoda**, with a single calcified shell that may be coiled (e.g., snails) or without an obvious coiling (e.g., limpets). Globally, 49,545 species of extant marine molluscs are known. India is known for 3,600 species of marine molluscs. The Maharashtra coast (familiar as 'Konkan') comprises 162 species of bivalves and 418 species / subspecies of gastropods. The common marine molluscan shells of Maharashtra can be identified by following Apte (1998), Poutiers (1998a, 1998b), Abbott & Dance (2000), and Subba Rao (2003, 2017). The Hardy's Internet Guide to Marine Gastropods website (<http://www.gastropods.com/>) is a great source of gastropod images and bibliographic information.

# COMMON MARINE BIVALVE SHELLS OF MAHARASHTRA



General features of a typical marine bivalve shell

## Family Pharidae *Siliqua radiata* (Linnaeus, 1758)

**English/Common Name:** Sunset shell

**Marathi Name:** सुर्यास्त शिंपला

**Key features :** Shell moderately large (up to 50 mm length), thin, transversely oblong, outer surface smooth.

**Colour :** shell externally violet or bluish white or bluish violet, with 4 white radiating bands.

**Habitat:** Common in shallow muddy areas



**Family Pharidae**  
**Anadara inaequalvis (Bruguière, 1789)**

**English/Common Name:** Inequivalve ark

**Marathi Name:** असमानकवची पेटी - शिंपला

**Key features :** Shell moderately large (up to 95 mm length), thick, somewhat quadrate-shaped, outer surface with about 33 radial ribs.

**Colour :** shell externally white under blackish brown periostracum, internally whitish.

**Habitat :** Fine muddy-sand bottoms in bays and coastal lagoons.



**Family Pharidae**  
**Tegillarca granosa (Linnaeus, 1758)**

**English/Common Name:** Granular ark

**Marathi Name:** खुब्बे / दाणेदार पेटी - शिंपला

**Key features :** Shell moderately large (up to 90 mm length), thick, slightly longer than high, outer surface with about 18 radial ribs, ribs often with rectangular nodules.

**Colour:** shell externally white under yellowish brown periostracum, internally white.

**Habitat :** Muddy bottoms in intertidal and shallow subtidal waters, especially in protected bays, estuaries and mangroves.



**Family Cardiidae**  
**Vepricardium asiaticum (Bruguière, 1789)**

**English/Common Name:** Asiatic cockle

**Marathi Name:** आशियाई शिंपला

**Key features :** Shell moderately large (up to 50 mm length), thick, ovate, almost as long as high, outer surface with at least 26 radial ribs, ribs with spines near margin.

**Colour :** shell externally whitish, tinged with yellow.

**Habitat :** Muddy-sand bottoms of shallow water near low tide level up to a depth of about 100 m.



**Family Donacidae**  
**Donax cuneatus Linnaeus, 1758**

**English/Common Name:** Cuneate donax

**Marathi Name :** पाचराकृती शिंपला

**Key features :** Shell moderately large (up to 40 mm length), thick, wedge-shaped to trigonal-ovate, outer surface generally smooth.

**Colour :** shell externally variable in colour (white, cream, brown, grey, bluish grey, or purple) but often with darker radiating bands, internally whitish, with variable orange or purple bands or blotches, sometimes entirely dark purple.

**Habitat :** Sand in surf zone of intertidal area, migrating between high and low tide marks with ebb and flow tides.



**Family Mytilidae**  
**Perna viridis (Linnaeus, 1758)**

**English/Common Name:** Asian brown mussel

**Marathi Name :** ककैई/आशियाई तपकिरी शिंपला

**Key features :** Shell large (up to 165 mm length), thick, elongate, trigonal-ovate, pointed anteriorly, rounded posteriorly, outer surface almost smooth.

**Colour :** shell externally whitish under olive-green to bright green periostracum, internally iridescent pale bluish green.

**Habitat :** Attached by byssal threads to hard substratum and objects in littoral and sublittoral zones up to a depth of 20 m. up to a depth of about 100 m.



**Family Ostreidae**  
**Saccostrea cucullata (Born, 1778)**

**English/Common Name:** Hooded oyster

**Marathi Name :** मुखवटा घातलेला कालव / हूडेड ऑयस्टर

**Key features :** Shell large (up to 200 mm height), thick, highly variable in shape, strongly inequivalve, lower (left) valve generally deep, with strong radial ribs towards periphery, upper (right) valve flattish, fitted into plicate margins of wider opposite valve.

**Colour :** shell externally dirty white to greyish brown, often with shades of purple, internally creamy white, with deep purple margins.

**Habitat :** Attached to different hard substratum in marine, estuarine and mangrove areas (from intertidal to shallow subtidal waters up to a depth of 5 m), often in dense colonies.



**Family Placunidae**  
**Placuna placenta (Linnaeus, 1758)**

**English/Common Name:** Windowpane oyster

**Marathi Name :** खिडकीतावदान शिंपला / कालव / विंडोपेन ऑयस्टर

**Key features :** Shell large (up to 180 mm length), thin, almost circular, strongly compressed laterally, lower (right) valve flat, upper (left) valve gently convex, outer surface almost smooth, inner surface smooth, glossy.

**Colour:** shell externally silvery white, occasionally with pale brown or light purplish rays towards umbo, internally nacreous white.

**Habitat:** Surface of soft muddy to sandy-mud bottoms from low tide levels up to a depth of about 100 m; abundant in stagnant waters of lagoons, protected bays, mangroves and estuaries.



**Family Veneridae**  
**Meretrix meretrix (Linnaeus, 1758)**

**English/Common Name:** Asiatic hard clam

**Marathi Name :** तिसरी/आशियाई सक्त्त शिंपला/ आशियाई कडक क्लॅम

**Key features :** Shell moderately large (up to 70 mm length), thick, trigonal-ovate, outer surface generally smooth.

**Colour:** shell externally variable in colour (white, straw yellow, fawn, or chestnut brown), internally porcelaneous white.

**Habitat:** Sand and muddy-sand bottoms in intertidal and sublittoral zones up to a depth of about 20 m.



**Family Veneridae**  
**Sunetta meroe (Linnaeus, 1758)**

**English/Common Name:** Pure sunetta

**Marathi Name :** निर्मळ शिंपला /फिक्का जांभळा रंगाचे शिंपले

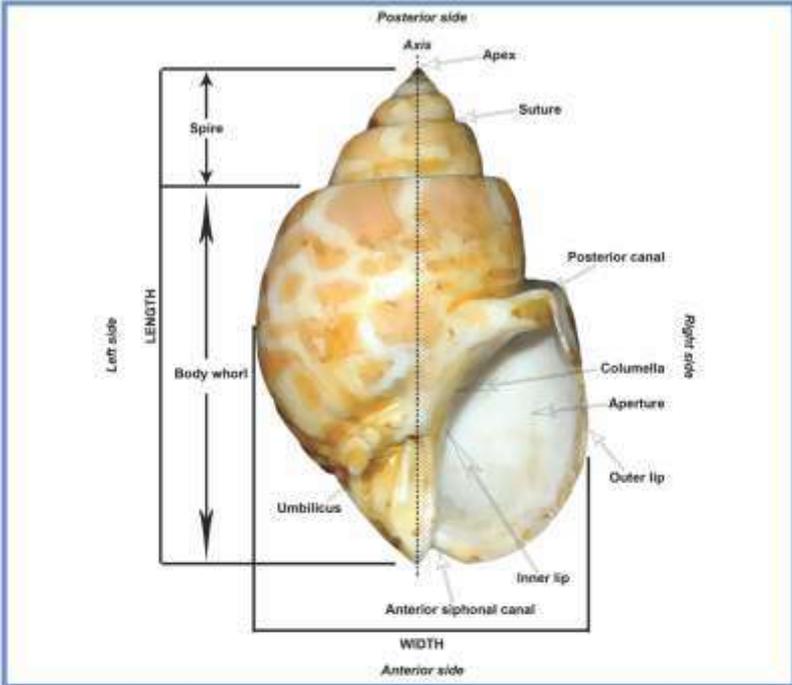
**Key features :** Shell moderately large (up to 47 mm length), thick, subovate, outer surface sculptured with concentric, flat ribs.

**Colour:** shell externally beige or lilac, with dark brown or yellowish-brown zig-zag bands.

**Habitat:** Burrow in sandy or muddy substratum in shallow waters of littoral zone.



# COMMON MARINE GASTROPOD SHELLS OF MAHARASHTRA



General features of a typical marine gastropod shell

## Family Bursidae *Bufonaria echinata* (Link, 1807)

**English/Common Name:** Spiny frog shell

**Marathi Name :** काटेरी/काटक्या बेडूक शंख

**Key features :** Shell moderately large (up to 75 mm long), thick, ovate, spire high, whorls with diametrically opposite varices, body whorl elongate, longer than broad, aperture narrowly ovate, outer lip with 3 spines, medial spine very short, spine near posterior canal long, curved upwards, anterior siphonal canal broad. **Colour:** shell externally pale or smoky brown.

**Habitat:** Rocky substratum in mesolittoral zone.



**Family Cypraeidae**  
**Mauritia arabica (Linnaeus, 1758)**

**English/Common Name:** Arabian cowrie

**Marathi Name :** अरबी कवडी

**Key features :** Shell moderately large (up to 105 mm long), thick, glossy, elongate-ovate, dorsally rounded, ventrally flat to concave, spire gently protruding, aperture narrow, outer lip with strong teeth, inner lip with finer teeth.

**Colour:** shell dorsally cream coloured or pale brown, covered with mostly axial dark brown lines and interrupted by rounded spaces, resembling Arabic script.

**Habitat:** Coral-reefs and rocky coasts in shallow pools or in rocky crevices or under algal matters from intertidal to shallow sublittoral zones.



**Family Naticidae**  
**Tanea lineata (Röding, 1798)**

**English/Common Name:** Lined moon snail

**Marathi Name :** रांगेत /ओळी सह चंद्रकोर शंखी गोगलगाय

**Key features :** Shell moderately large (up to 40 mm long), thick, smooth, glossy, globular, spire low, body whorl inflated, aperture wide, umbilicus partially filled by strong internal rib.

**Colour:** shell externally ashy white ornamented with wavy, orange-yellow or orange-brown, vertical lines.



**Habitat:** Fine sandy or muddy bottoms of intertidal or sublittoral zone up to a depth of about 50 m; abundant on intertidal mudflats and backwaters.



**Family Rostellariidae**  
**Tibia curta (G. B. Sowerby II, 1842)**

**English/Common Name:** Indian tibia

**Marathi Name :** भारतीय पुंगी शंख

**Key features :** Shell large (up to 160 mm long), thick, heavy, fusiform, whorls 15-16, spire high, elongated, sutures deep, body whorl inflated, generally smooth, aperture elongate-ovate, outer lip anteriorly with 4 or 5 slightly projecting teeth, posterior most teeth bordering posterior canal not protecting, anterior siphonal canal conspicuously long, narrow, straight, posterior canal short, curved, columella arched, with callus.



**Colour:** shell externally cream or pale brown, with dark brown spiral band at upper end of each whorl.

**Habitat:** Mudflats, deep waters.

**Family Babyloniidae**  
**Babylonia spirata (Linnaeus, 1758)**

**English/Common Name :** Spiral babylon

**Marathi Name :** आवर्त/चक्राकार बाबिलोन/डागाळणे शंख

**Key features :** Shell moderately large (up to 70 mm long), thick, ovate, spire high, elongated, sutures deep, channelled, body whorl inflated, aperture ovate, outer lip sharp, anterior siphonal canal short, represented by notch; columella smooth, with heavy callus; umbilicus broad, deep, often obscured by callus.



**Colour:** shell externally white with prominent light brown blotches, oblique streaks and spots.

**Habitat:** Intertidal zone of sandy shores as infauna, preferably in shallow waters.

**Family Muricidae**  
**Indothais lacera (Born, 1778)**

**English/Common Name:** Carinate rock shell

**Marathi Name :** तीक्ष्ण रिज असलेला खडकीला शंख

**Key features :** Shell moderately large (up to 55 mm long), thick, heavy, almost biconical, whorls with numerous spiral cords and periphery with spiny tubercles, spire moderately high, conical, body whorl strongly angulated, with prominent spiral ridge bordering umbilical excavation, inner lip almost detached posteriorly from body whorl, anterior siphonal canal short, broad.

**Colour:** shell externally pale grey, cream, or yellowish brown, often with quadrangular brown mottling.

**Habitat:** Attached to hard substratum in littoral zone of river mouths and backwaters.



**Family Olividae**  
**Oliva oliva (Linnaeus, 1758)**

**English/Common Name :** Common olive

**Marathi Name :** सामान्य ऑलिव्हा/पिवळट हिरवा शंख

**Key features :** Shell moderately large (up to 40 mm long), thick, polished, cylindrical bullet-shaped, spire very short, sutural groove narrow, deep, aperture narrow, columella with callus on anterior two-thirds and with oblique, uneven plaits, confined to anterior half of aperture.

**Colour:** shell externally highly variable in colour (creamy white, brown, black, or yellow), with dark spots, blotches or without any markings.

**Habitat:** Common in intertidal zone of sandy beaches as infauna.



**Family Potamididae**  
***Pirenella cingulata* (Gmelin, 1791)**

**English/Common Name:** Girdled horn shell

**Marathi Name :** कमरपट्टा असलेले शिंग गोगलगाय

**Key features :** Shell moderately large (up to 50 mm long), thick, elongated, conical, sculptured with prominent spiral ridges crossed by equally strong axial ribs forming rows of regular granular nodules, whorls 13–15 in number, separated by shallow sutures, spire very long, body whorl short, aperture oval, outer lip posteriorly expanded as flaring, wing-like process, anterior siphonal canal short, columella almost straight.



**Colour:** shell externally dark brown, often with whitish band above suture, nodules dirty white, interstices brown.

**Habitat:** Common and abundant on mud flats near mangroves, estuaries and backwaters in intertidal zone.

**Family Turritellidae**  
***Turritella duplicata* (Linnaeus, 1758)**

**English/Common Name:** Duplicate turret

**Marathi Name :** दुटप्पतीक्ष मनोरा शंख

**Key features :** Shell large (up to 180 mm long), thick, heavy, elongated, conical, whorls 18–20, sharply angular medially, last 8 whorls medially with 2 keeled spiral ridges, spire high, base convex, aperture small, suborbicular, outer lip thin, sharp, inner lip smooth, anterior siphonal canal absent.



**Colour:** shell externally moderately dark brown on upper half of each whorl and pale creamy brown on lower half of each whorl.

**Habitat:** Sandy and muddy bottoms of subtidal water.

### Family Potamididae

#### *Telescopium telescopium* (Linnaeus, 1758)

**English/Common Name :** Telescope snail

**Marathi Name :** दुर्बीनी गोगलगाय / शिंग गोगलगाय

**Key features :** Shell large (up to 130 mm long), thick, heavy, elongated, conical, whorls 14–16, sutures indistinct, spire whorls with 3 prominent spiral cords and narrow spiral cords alternating with deep spiral grooves, body whorl angulate to strongly rounded at periphery, with spiral cords on base and single deep spiral groove around columella, aperture small, obliquely quadrangular, outer lip thin, anterior siphonal canal very short, strongly twisted, columella twisted, with strong, central spiral ridge.



**Colour:** shell externally dark reddish brown to almost black, often with paler spiral band near suture.

**Habitat:** Abundant on mangroves and intertidal mud flats.

### Family Neritidae

#### *Nerita oryzarum* Récluz, 1841

**English/Common Name :** Rice-marked nerite

**Marathi Name :** तांदळासारखे टिपकेदार शंख

**Key features :** Shell small (up to 28 mm long), thick, globose or obliquely oval, whorls 4, with 30–35 alternating strong and weak spiral riblets, spire obtuse, gently protruding, outer lip internally with 12–14 teeth, posterior 2 teeth short, knob-shaped, remaining teeth longitudinally expanded, columella medially granular, wrinkled on upper half, with 3 distinct teeth on margin, operculum with numerous granules.



**Colour:** shell externally blackish-olive or slate coloured, peculiarly mottled with zigzag maculations and tessellated with distant white spots, somewhat resembling rice grains.

**Habitat:** Rocky intertidal areas.

**Family Nacellidae**  
***Cellana radiata* (Born, 1778)**

**English/Common Name:** Rayed limpet

**Marathi Name :** चिकट गोगलगाय

**Key features :** Shell moderately large (up to 35 mm length), thin, ovate, longer than broad, anteriorly narrow, apex generally towards anterior third, outer surface sculptured with numerous, narrow, flat radial riblets separated by linear grooves, riblets interrupted by fine concentric striate.

**Colour:** shell externally yellow or greyish brown, with whitish or olive rays and purplish brown markings, internally iridescent, with irregular dark brown blotches on margin.

**Habitat:** Rocky intertidal zones, usually seen strongly attached to rocks above water mark.



**Family Trochidae**  
***Umbonium vestiarium* (Linnaeus, 1758)**

**English/Common Name :** Common button top/Button shell

**Marathi Name :** गुंडीसारखे शंख

**Key features :** Shell small (up to 15 mm width), thick, lenticular, much wider than long, smooth, polished, spire low, body whorl regularly rounded at periphery, flattened at base, umbilicus completely filled with very large callus plug, aperture ovate.

**Colour:** shell externally variable in colour (white, grey, olive green, yellow, pink, red, or brown), with dark grey or purple markings.

**Habitat:** Burrows in fine and soft sand near low tide mark, and shallow subtidal water to a depth of about 5 m.



**Family Turbinidae**  
**Turbo bruneus (Röding, 1798)**

**English/Common Name:** Brown Pacific turban/Dwarf turban

**Marathi Name :** प्रशांत महासागराचा तपकिरी पगडीसारखे शंख / टेंगू पगडीसारखे शंख.

**Key features :** Shell moderately large (up to 60 mm long), thick, heavy, turbanate, outer surface with spiral ridges, spire well-developed, pointed, body whorl with keeled shoulder, appearing subangular, spiral ridges transpirally grooved, aperture moderately large, rounded, with very narrow umbilicus, operculum nearly circular, with central perforation and spiral ridge at periphery. **Colour:** shell externally cream coloured, with dark brown/black and slightly wavy axial flames.



**Habitat:** Rocky shore and coral-reefs in shallow subtidal waters up to a depth of about 20 m, preferably on rocks covered with mud.

### CONCLUSION

Maharashtra, the fourth longest coastal state, has nearly 720 km long coastline. The coast of Maharashtra is gifted with a wide range of marine habitats, including backwaters, estuaries, mangroves, coral-reefs, and rocky cliffs, which are suitable for the existence of molluscs. Among the Indian states, the highest proportion of rocky coasts can be seen in Maharashtra. Rocky coast is known to harbour abundant and diverse molluscs, especially gastropods. This is also true for coral-reefs. Maharashtra is nevertheless known for the presence of patchy reefs mainly along the Malvan coast. The other regions of Maharashtra with plentiful molluscs are the mangroves and mudflats. Sandy beaches of Maharashtra are particularly famous for rich and varied bivalves.

Marine molluscs are vulnerable to several threats. The major threats to these animals are illegal collection/trade, over-exploitation for food/lime preparation/medicines, and degradation of marine habitats (e.g., destructive fishing practice of bottom trawling,

removal/breaking of corals that host umpteen molluscs). Marine protected areas offer shelter for the existence of molluscs. The Malvan Marine Sanctuary is a protected area in the Sindhudurg district of Maharashtra. The existing laws, acts, rules and regulations further extend support for the protection of marine molluscs. Two gastropod species and one bivalve species of Maharashtra are protected under Schedule IV of the Indian Wildlife (Protection) Act, 1972: the mole cowrie, *Talparia talpa* (Linnaeus, 1758) (Cypraeidae); the trapezium conch, *Pleuroploca trapezium* (Linnaeus, 1758) (Fascioliariidae); and the windowpane oyster, *Placuna placenta* (Linnaeus, 1758) (Placunidae).

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Sahyadri Nisarga Mitra is a non-governmental organization based in Chiplun, Maharashtra, India, that is committed to the conservation and protection of biodiversity in the Western Ghats region.

## **Objectives**

Community participatory nature conservation.

Nature education to create sense of conscience in youngsters.

To educate & inspire the community to adapt a sustainable lifestyle.

Livelihood enhancement of local community through alternate livelihood generation.

## **Projects**

Conservation of Indian Pangolin

Plastic & Solid waste Management

My Sustainability Corner

Adolescent Healthcare Check-up & awareness program

School Infrastructure development

My Jungle- a participatory forest conservation project.



## About the book

The book deals with the most common marine molluscan shells of the Maharashtra coast, which is familiar as 'Konkan'. It covers information on 10 species of 8 bivalve families and 14 species of 13 gastropod families.

The English / common / Marathi name, key identifying features and habitat of each species are provided. The general features of a typical marine bivalve/gastropod shell are also depicted. The book should prove useful to conchologists, teachers, students, shell collectors and general public.

