

TREASURES ON THE TIDE LINE

SHELLS AND PEBBLES OF THE HUNTER COAST

The surf of the Hunter's magnificent beaches washes up interesting natural treasures onto the sand: remains of animals, plants and pretty coloured pebbles. They become stranded along the tide line as the waves recede. The southern part of Stockton Beach and the northern part of Burwood Beach are particularly rich in natural treasures.

Pounding surf and the scouring effects of currents and high spring tides dislodge many creatures from their habitat and cast them up onto the beach. Remains of organisms washed up by the waves give us clues to the kinds of animals and plants that are living in the beach sand, on adjacent wave cut rock platforms, and below the water line.

SHELLS

Many beautiful shells can be found. Shells are the hard outside skeletons of invertebrate animals. The most abundant shells found are those of molluscs: gastropods and bivalves. They are made of calcium carbonate. Whole shells and broken shells occur.

Gastropods have one-piece shells, some coiled into a spiral (sea snails). Gastropods found along the beaches include: variegated tun, wavy volute, auger shell, southern mud creeper, banded kelp shell, Spengler's rock whelk, turban shell, cart-rut shell, zebra top shell, black nerite, mulberry whelk, striped-mouth conniwink, large sand snail, tubercled noddwink, limpet, elephant snail, violet snail, abalone.

Bivalves have two-piece shells, joined by a tough ligament on one side. When the creature dies the internal muscles that hold the valves together relax and the two valves open out. Wave action breaks the ligament so that the valves separate, forming

two shells. Bivalves found along the beaches include: pipi, trough shell, bitter sweet clam, scallop (king scallop and gay fan shell), cockle, mussel, native flat (mud) oyster, Sydney rock oyster, finger oyster (razor shell), shining wedge shell, wedge clam.

The shell photographs identify the local habitat of each mollusc.

PEBBLES

The cliffs and rock platforms of the Hunter coast are made of sedimentary rocks of the Newcastle Coal Measures. They comprise layers of sandstone, shale, conglomerate, tuff and coal that were deposited in the Late Permian Period, 250 million years ago.

Pebbles of various colours and rock types are washed up onto beaches adjacent to rocky outcrops. The pebbles are pieces of rock that have been eroded from the sedimentary rock layers. Tumbling about in the surf for a while has made them smaller, rounded and smooth.

The pebble photographs give the origin of each rock type.

OTHER TREASURES

Other remains include: bluebottle, fish, Port Jackson shark egg case, shark's tooth, sea urchin case and spine, cuttlefish spine, sponge skeleton, crab, barnacle, cunjevoi, sea-tulip, galeolaria, seaweed, mangrove seed, driftwood, feathers.

PEBBLES



Petrified Wood
Rock platform and cliff, fossil tree fragment from sandstone and shale



Black Coal
Rock platform and cliff



Tuff
Cliff, silicified tuff (consolidated volcanic ash) from Nobbys Tuff



Baked Shale
Cliff, heat-affected shale



Porphyritic Volcanics
Cliff and rock platform, pre-existing pebbles from conglomerate and sandstone



Chert
Cliff and rock platform, pre-existing pebbles from conglomerate and sandstone



Limonite
Rock platform, secondary mineral in joints

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GASTROPOD SHELLS



Variegated Tun
Tonna variegata
Sandy beach, subtidal



Wavy Volute
Amoria undulata
Sandy beach, subtidal



Auger Shell
Terebra
Sandy beach, intertidal



Southern Mud Creeper
Velacumantus australis
Sandy beach, intertidal



Banded Kelp Shell
Bankivia fasciata
On kelp, subtidal



Spengler's Rock Whelk
Cabestana spengleri
Rock platform



Green Warrener
Turbo undulata
Rock platform



Cart-rut Shell
Dicathais orbita
Rock platform

GASTROPOD SHELLS



Zebra Top Shell
Austrocochlea porcata
Rock platform



Black Nerite
Nerita atramentosa
Rock platform



Mulberry Whelk
Morula marginalba
Rock platform



Striped-mouth Conniwink
Bembicium nanum
Rock platform



Limpets
Rock platform



Elephant Snail
Scutus antipodes
Rock platform

OTHER SHELLS



Barnacle
Rock platform

BIVALVE SHELLS



Pipi
Donax deltooides
Sandy beach, intertidal & subtidal



Trough Shell
Macra rufescens
Sandy beach, subtidal



Bittersweet Clam
Glycymerididae family
Sandy beach, offshore



Scallop
Pecten fumata
Offshore



Cockle
Anadara trapezia
Estuary, intertidal & subtidal



Hairy Mussel
Mytilus edulus planulatus
Rocks & jetty piles, intertidal & subtidal



Native Flat Oyster
Ostrea angasi
Intertidal & subtidal

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