



Pathfinder Honour:

Additional Trainer's Notes - New Zealand Shells

Shells



Instructions to Trainers / Instructors of this Honour

Thankyou for being involved with this Honour. These notes have been developed to assist in teaching / instructing this honour. We recognise that there is much more information available and we are grateful that you should share your expertise.

Please remember that Honours are designed to develop our Pathfinders in many ways; their interests, their knowledge and their relationship with their Saviour and Creator. Your enthusiasm and creativity will have a huge impact on those doing the honour.

To complete an Honour, the following (where applicable) must be completed satisfactorily:

- Physical and Practical Requirements.
- Honour Workbook.

Honour Assessment Sheet. (*On SPD Honour Website but Leader's level access is required*)

Additional Reference Material

Other Shell Honour Documents produced by the South Pacific Division of SDA.

New Zealand Seashells in Colour (Reed) G.J.H. Moon, J.R. Penniket

Wonder Book of Shells Native Animals of New Zealand (Unity Press) - A. Powell

Native Shells (Reed) - R.K. Dell

Acknowledgements

These notes are sourced from New Zealand Shells Honour Notes

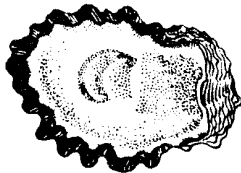
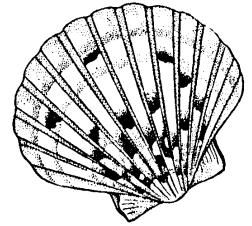
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REQUIREMENT 10. Make a collection of 20 different shells and tell where each is found, when it came into your possession, and classify it. Pictures of shells are preferred to taking live specimens.

N.B. Very few of our native shellfish occur outside New Zealand. Of those that have been found elsewhere, the majority are found only in Australia. They range in size from tiny specks less than a millimetre in length, up to the giant squids. Most fall into the range of 2 - 10 cm in length.

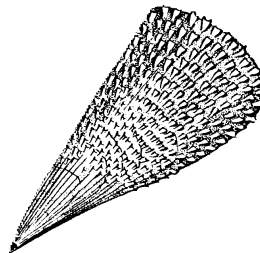
Details of shells found in New Zealand are as follows:

QUEEN SCALLOP: This is the large scallop with one valve convex and the other one flat. They occur throughout New Zealand on muddy and sandy flats at low tide and in deeper water. They are very abundant in places on the mud banks of the Manukau Harbour. This scallop swims by suddenly closing the shell with a snap, which sends out a jet of water that propels the shellfish forwards. Maori name is Tipa.



AUCKLAND ROCK OYSTER: Found only in the upper tidal rocky zone of the northern portion of the North Island and at the Chatham Islands. It cements the lower valve of the shell to the rock and because of its clustering habit assumes varied shapes. A conspicuous feature is the violet to bluish black edging to the shell.

HORSE MUSSEL: Like a half closed fan, length. The shell is thin, covered with hollow black with a metallic lustre at the narrow end lives about three parts buried, point downwards tide to about twenty fathoms.

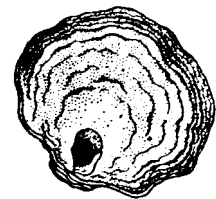


grows to 30-45 cm in spines, and is purplish and inside. This mussel in soft mud, from low



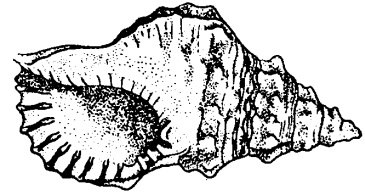
PURPLE COCKLE: Grows to about 4 cm in diameter. It is pinkish to light brown on the outside, which has heavy banded radial ribs, and pinkish to reddish purple within. It lives below low tide to a few fathoms off many of our sandy coastal beaches. They wash ashore in numbers at Oneroa, Waiheke Island. South Island specimens usually lack the bright pink and purple coloration.

GOLDEN OYSTER: This is not a true oyster. It has a thin wrinkled upper valve varying from white to a beautiful golden colour, but the lower valve is greenish or white with an oval hole through it, near to the hinge. Through this opening is a calcified extension of the foot, which fastens the shellfish securely to some solid object such as rock, larger shells, or even wharf piles. The golden oyster is found commonly around Auckland and north of Auckland. The golden valves can be fashioned into very realistic artificial Iceland poppies.



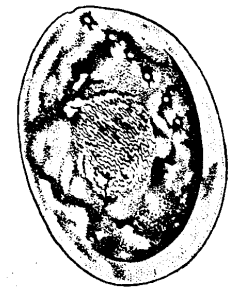
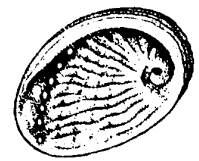
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LARGE TRUMPET: Grows to about 20 cm in length and is found adjacent to rocks near the entrance to harbours in many localities from Tauranga northwards. They are fairly abundant, especially in spring, when they come into shallow water to breed, at Mt Maunganui and Whangarei Heads.



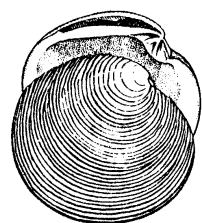
NEW ZEALAND COWRY: This is about 1.5 cm long with a group of pink blotches on the top of the shell, and is our sole representative of a family very well represented in all tropical countries. The New Zealand species is very scarce. Dead shells wash ashore occasionally at Cape Maria van Diemen, Ahipara and Mount Maunganui.

SILVERY PAUA: Hihiwa of the Maoris. This is from 7 - 10 cm in diameter, and is readily distinguished from the large paua by the silvery iridescent internal lustre of the shell, strong cross ridges and the colour of the animal. It is found together with iris, but is not so common. The animal is black with a dark grey foot in iris; black with an orange foot in australis, and black with a dirty-white foot in virginea, the next species.



PAUA: Grows up to 15 cm in diameter, and is one of our most handsome shells. It is at once recognised by its large, oval flattened shell, the row of holes along the back and wonderful internal lustre of opalescent greens and blues, with occasional fiery flashes. The shape of the paua is a special adaptation for clinging to flat surfaces of rock - after the manner of the limpet. The holes in the shell are for expelling water used in the aeration of the gills. The paua is found at lowest spring tide level and in deeper water, on rocky ground in open coastal situations. It is seldom exposed to view and the rough encrusted exterior of the shell renders it almost indistinguishable from its surroundings. Pauas cling to the rock with great suction, and a quick deft thrust with a broad thin bladed knife is necessary to prise them off. They favour deep low tidal rock pools under sides of boulders, beneath ledges and in narrow channels and crevices in the rock.

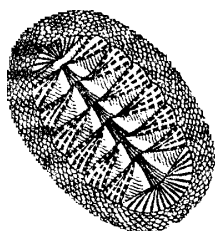
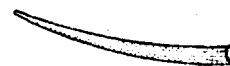
RADIATE LIMPET: The common northern limpet. It grows up to 5 cm in length and has a great variety of colour markings; anything from plain silvery-grey to an intricate tortoiseshell design in yellow and rich reddish-brown. The Maori name is Ngakihi.



RINGED DOSINIA: A large, rather thickened and flat disc-shaped shell, coarsely sculptured with concentric sharp ridges. It grows up to 9 cm across and is common washed ashore on sandy coastal beaches. It lives buried in sand below low tide.

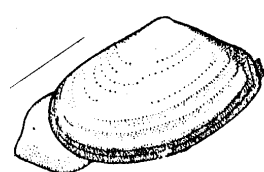
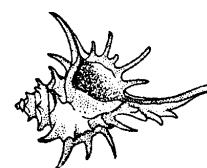
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TUSK SHELL: A white, tubular tapering shell, open at each end and about 2.5 cm long. It is seldom seen on the beaches, for it lives buried in mud in shallow to moderately deep water. The tusk-shells make up still another class of the mollusca, distinct from all other kinds. These shells were highly prized by the ancient Maoris, who threaded them to form necklaces. Most abundant in the Manukau Harbour.



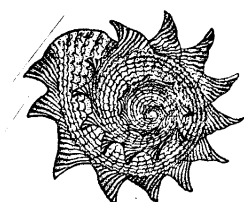
SNAKE'S SKIN CHITON: This is typical of a separate class of the Mollusca, which stands uniformly distinct from all other groups. The shell is always composed of eight movable pieces fastened together by muscles and a surrounding leathery girdle, which is often studded with scales. Variation in the number of valves of the shell is not unknown, but such discrepancy can always be traced to some injury. Chitons are vegetarian feeders, but spend most of their time fastened to rocks by suction.

SPINY MUREX: A handsome long spined white shell up to 5 cm high. It is often washed ashore on coastal beaches, but the best specimens are found only in deep water. These shells often become tangled in the nets of fishing vessels.



TOHEROA: Grows up to 15 cm long. It burrows deeply in sand on exposed beaches that are backed by extensive sand dunes. Fresh water seepage from lagoons in the dunes promotes the growth of diatoms and affords a rich inshore concentration of plankton upon which the toheroa feeds. The largest beds of toheroas are on the Muriwai Beach, West Coast, near Dargaville and the Ninety Mile Beach. The toheroa has long been esteemed as a food but supplies have to be limited for the beds have become depleted.

PIPI: The common elongated species with the apex in the middle. It is abundant in sandy or silty mud in harbours. This species was a favourite food of the old time Maoris, and vast heaps of the shells can be seen in many districts, adjacent to former Maori villages.

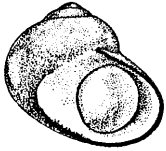


CIRCULAR SAW: This requires no description. It occurs throughout New Zealand in moderately deep water. Dead shells wash ashore on ocean beaches, but living ones are obtainable only by dredging. Numbers come up with the Stewart Island oysters taken in Foveaux Strait.

HELMET SHELL: Grows from 5-6 cm long and is a handsome smooth shell with a row of small knobs around the shoulder. The colouring is pale yellowish-brown to pinkish with revolving series of reddish-brown blotches. The animal has a horny operculum shaped like an open fan. It is found on sandy beaches off the open coast from low water to deeper water. At times it washes ashore in numbers on the Bay of Plenty beaches, Port Waikato and Waikanae Beach.

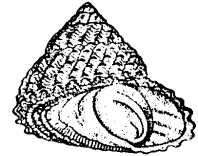


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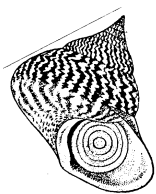
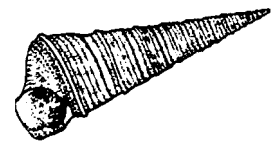


CAT'S EYE: Best known of all our shells of the intertidal rocks. It feeds on seaweeds and lives in the mid-tidal belt of the grape-seaweed. They sometimes grow to over 5 cm in diameter. The circular greenish operculum, the cat's eye, is its most conspicuous feature. The Maori name is Ataata.

COOK'S TURBAN SHELL: This is related to the last species but is quite common. It lives under rocky ledges, at low tide, in clean water coastal situations. In life the shell is dull and encrusted, but when the outer coating flakes off a beautiful pearly under layer is revealed. The aperture is stoppered with a strong shelly oval operculum. Maori names for this shell are Karaka Toitoi and Ngaruru.

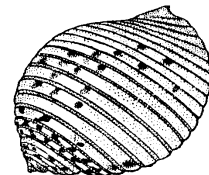


TURRET SHELL: This is from 4-5 cm long and lives from low tide to moderately deep water. Where conditions are favourable they occur in vast beds. Beds off Devonport, Auckland Harbour, in 6-8 fathoms, are so prolific that there are several hundreds of these shells to each square meter. The shell is a mottled reddish-brown.



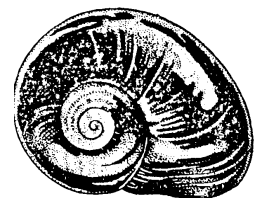
TIGER SHELL: Grows to 8 cm in diameter and is at once recognized by its delicately tapered spire and conspicuous pattern of zigzag reddish-brown radiating bands. It lives under boulders in clean water sheltered situations, but is nowhere common. Whangarei Heads, Mt Maunganui and West Haven Inlet, Nelson, are good localities for this handsome species. The Maori name for these shells is Maurea.

CASK SHELL: This is very large and thin, sculptured with strong spiral corrugations. It grows up to 23 cm in height and has a very large aperture. Occasionally these shells wash ashore on North Auckland beaches, but they live on sandy or muddy bottom in from 30 to 60 metres.



LAND SNAILS: are univalve shellfish, which live on dry land. In all other respects they are essentially "shellfish".

The PUPURANGI or KAURI SNAIL is an example. This is a North Auckland representative of a group of large carnivorous snails found only in New Zealand but with near relatives in Tasmania and Victoria. The pupurangi is coincident in range with the kauri tree, but there is no relationship between the two - in fact the snail shuns the immediate vicinity of the kauri for the ground there is usually too dry for the existence of worms, upon which it feeds. The shell is a flattened spiral of dark greenish colour, about 7 cm in diameter. It lays hard limy shelled white oval eggs of about 1 cm long, which are deposited in nests in the leaf mould of the forest floor. Thirty-eight kinds of these large snails are known from New Zealand and they are distributed from the North Cape to Southland but occur mostly west of the dividing range either in rain forest or in sub-alpine forest and tussock. Some of the South Island species are brilliantly coloured.



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FRESH-WATER MUSSEL: This or related species are found buried in mud in most of our lakes, rivers and streams. They grow from 5-8 cm long and are covered with a thick dark green horny epidermis. The interior of the shell is white and pearly. This is the kakahi of the Maoris, formerly much favoured by them as a special food for young children and the sick. These shellfish have an interesting early stage in which the larval shell attaches itself to the fins or body of a small fresh-water fish.

