

**COMMERCIALY VALUABLE SPECIES
OF SEA CUCUMBERS
IN THE TROPICAL PACIFIC**

SANDBISH

Holothuria (Metriatyta) scabra and *H. scabra* var. *versicolor*

Size	Length: 25–45 cm
Shape	The body is oval and stout with flattened ends; <i>H. scabra</i> has prominent wrinkles on its upper surface and is generally smaller and lighter than the <i>versicolor</i> variety.
Colour	<i>H. scabra</i> has a grey to greenish upper surface with many fine black spots, and a creamy lower surface. The <i>versicolor</i> variety is more variable in colour, ranging from beige (uniform or with black spots) to uniform black.
Habitat	Present in large numbers in habitats under terrigenous influence. <i>H. scabra</i> is often found on inner reef flats and near estuaries, and its density may reach several hundred individuals per hectare. The <i>versicolor</i> variety prefers deeper waters of bays or lagoons. Its average density is about 100 animals per hectare. They often spend part of the day buried in the silty sand.
Value	This species is in great demand and fetches high prices.
Processing	Sandfish require a special processing method to remove the hard outer layer of the skin containing the spicula (see p. 31). This animal should not be slit along its length. A small cut at the posterior end to assist gutting is all that is required.



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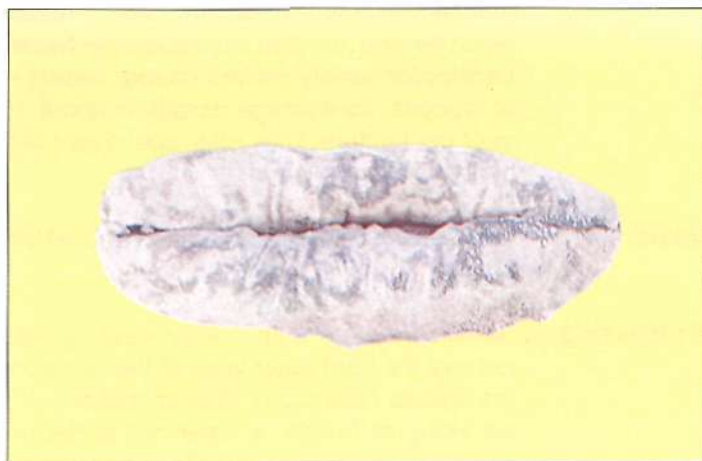
BLACK TEATFISH

Holothuria (Microthele) nobilis

Size	Length	:	30 – 40 cm
	Width	:	10 – 15 cm
	Body wall thickness	:	10 – 12 mm
	Live weight	:	2 – 3 kg
Shape	A flattened oval in shape. Six to eight teats on each side give this species its English name. Five anal teeth are present.		
Colour	<i>H. nobilis</i> is generally black, but small specimens have cream or orange flecks. The body is often covered with a fine coating of coral sand.		
Habitat	The white and black species normally occur in different habitats — <i>H. nobilis</i> is more common on shallow reef bottoms that are not subject to terrigenous influence. Average density is about 10 animals per hectare. Young specimens, usually few in number, are found on turtle-grass beds.		
Value	This species is in great demand by beche-de-mer processors because it fetches high prices.		
Processing	See processing method described on page 28. During processing a straight cut is made in the body wall along the back (i.e. upper dorsal side), up to 3 cm from each end of the animal.		



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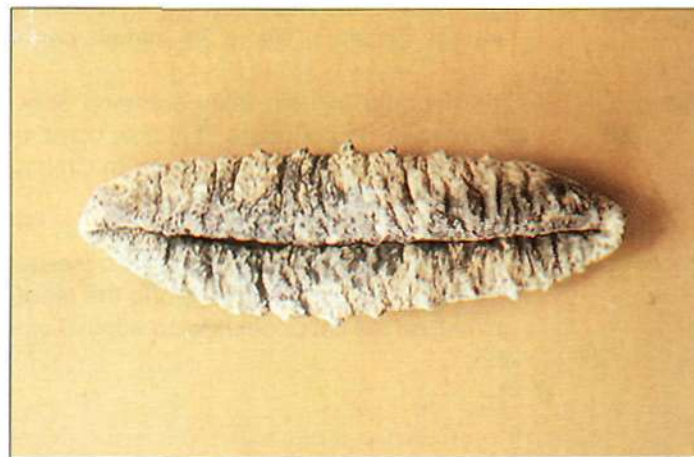
WHITE TEATFISH

Holothuria (Microthele) fuscogilva

Size	Length	:	30 – 40 cm
	Width	:	10 – 15 cm
	Body wall thickness	:	10 – 12 mm
	Live weight	:	2 – 3 kg
Shape	A flattened oval in shape. Six to eight teats on each side give this species its English name. Five anal teeth are present.		
Colour	The colour ranges from yellowish white to grey-brown. The body is often covered with a fine coating of coral sand.		
Habitat	<i>H. fuscogilva</i> is more common on coral slabs near reef passages or at the foot of the lagoon-side reef slopes. Average density is about 10 animals per hectare.		
Value	This species is in great demand by beche-de-mer processors because it fetches high prices.		
Processing	See processing method described on page 28. During processing a straight cut is made in the body wall along the back (i.e. upper dorsal side) up to 3 cm from each end of the animal.		



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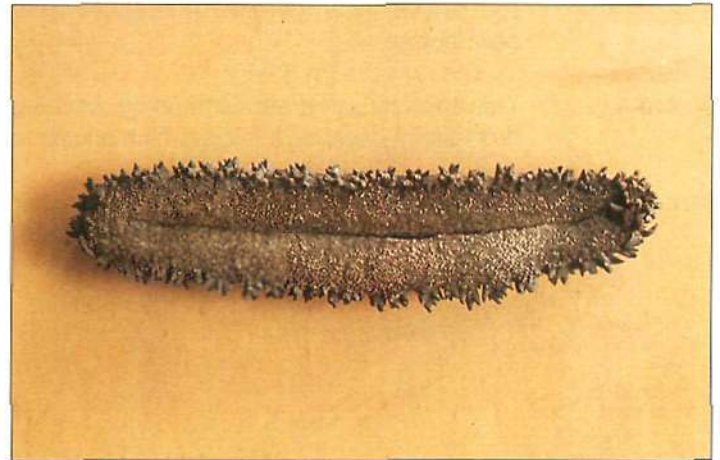
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PRICKLY REDFISH*Thelenota ananas*

Size	Length	:	40 – 70 cm
	Width	:	10 – 15 cm
	Body wall thickness	:	15 – 20 mm
	Live weight	:	1 – 6 kg
Shape	Very distinctive appearance because of numerous large pointed teats in groups of two or three all over the body surface. There are numerous large tube feet on the flat underside.		
Colour	Reddish-orange, with the teats darker than the body surface. The tube feet on the underside are bright orange.		
Habitat	Found at depths of 2 to 30 m on clean sand bottoms or on slabs near large coral heads. Fairly low average density of about 20 animals per hectare.		
Value	The demand for this fairly common species has grown over recent years. It is now commonly harvested and processed for export to China, attracting quite high prices.		
Processing	Similar processing method to teatfish (see page 28). The body-wall slit is made along the length of the animal, on the flat underside, to within 3 cm of each end.		



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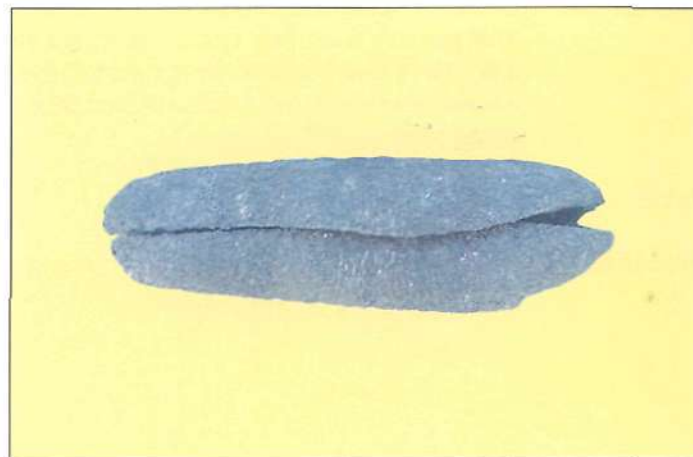
DEEP-WATER REDFISH

Actinopyga echinites

Size	Length	:	15 – 30 cm
	Width	:	8 – 10 cm
	Body wall thickness	:	7 mm
	Live weight	:	0.5 – 1 kg
Shape	The body is wider in the middle, tapers towards the ends and has a slightly wrinkled dorsal surface. Three rows of tube feet on underside and five anal teeth.		
Colour	Brick-red above, lighter orange on the underside. The body is generally covered with a fine coating of sand.		
Habitat	This species is abundant on reef flats and the upper part of coastal reef slopes, on sandy bottoms, turtle-grass beds and among living corals. Average density is a few hundred animals per hectare.		
Value	Low to medium commercial value, which is partly made up for by the high population density.		
Processing	Processed like teatfish. Can be processed without cutting, or with a long slit along the length of the animal (depends on the target market).		



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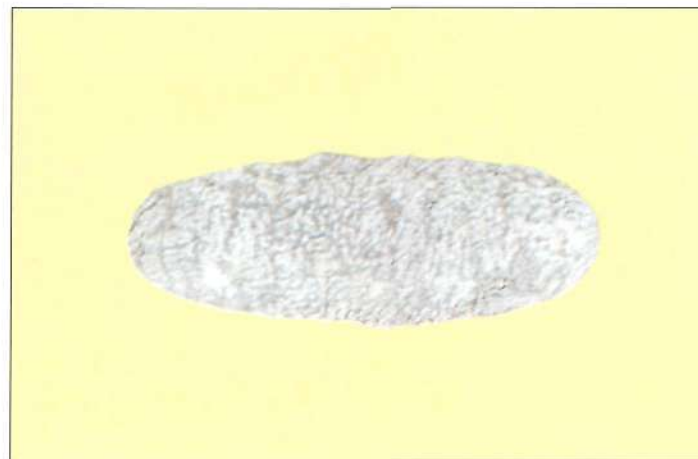
STONEFISH

Actinopyga lecanora

Size	Length	:	40 cm
	Width	:	9 cm
Shape	Large sea cucumber, spindle-shaped when static and highly elongated when active. It has a ventral mouth surrounded by 20 tentacles. Anus is surrounded by 5 anal teeth. The upper surface is sparsely covered in small papillae.		
Colour	Varies considerably, but there is always a very light-coloured patch around the anus. The dorsal surface is often brown with white mottling. Some specimens appear paler, with grey patches on a cream background.		
Habitat	Lives at depths from 0 to 20 m on hard substrates. This species is entirely nocturnal. In the daytime, it is often found under large stones, in gaps in reef slopes or in sheltered areas affected by tidal currents.		
Value	Low commercial value.		
Processing	Processed like teatfish. However it should be processed without cutting.		



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SURF REDFISH

Actinopyga mauritiana

Size	Length	:	20 – 30 cm
	Width	:	8 – 10 cm
	Body wall thickness	:	6 mm
	Live weight	:	0.5 – 1 kg
Shape	Almost cylindrical but with a flat underside. Three rows of tube feet on the underside and five anal teeth.		
Colour	Looks very much like the deep-water redfish, <i>Actinopyga echinites</i> , but its body does not have a coating of sand.		
Habitat	Found only on the outside of reefs, where the surf breaks and where there is no terrigenous action, at depths of between 0 and 5 m. The tube feet are very firmly attached to the seabed to prevent the animal from being carried away by the waves. Average density is several hundred individuals per hectare.		
Value	Low to medium commercial value, partly made up for by the high population density.		
Processing	Processed like teatfish. However it should be processed without cutting.		



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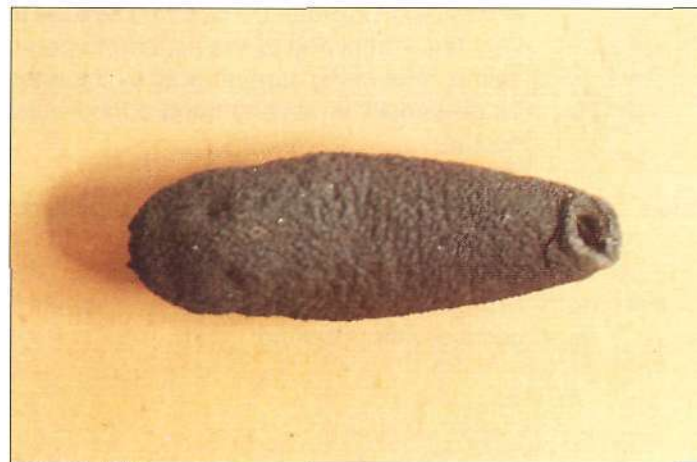
BLACKFISH*Actinopyga miliaris*

Size	Length	:	20 – 30 cm
	Width	:	8 – 12 cm
	Body wall thickness	:	8 mm
	Live weight	:	0.5 – 2 kg
Shape	Cylindrical with five anal teeth and tube feet arranged in three rows on the underside.		
Colour	Black, sometimes with a dark brown underside.		
Habitat	Found mainly in water less than 3 m deep on reef flats among living coral (often in the same places as the black teatfish, <i>H. nobilis</i>) and in turtle-grass beds. Average density is several hundred individuals per hectare.		
Value	Low to medium commercial value, which is partly made up for by the high population density.		
Processing	Processed like teatfish. However it should be processed without cutting.		

Note: The genus *Actinopyga* includes several large species, each of which is distributed rather differently. *A. miliaris* is commercially the most rewarding one because it is very abundant in easily accessible habitats.



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BROWN SANDFISH

Bohadschia marmorata/vitiensis

Size	Length	:	15 – 35 cm
	Width	:	8 – 10 cm
	Body wall thickness	:	5 – 10 mm
	Live weight	:	0.5 – 2 kg
Shape	Body short and thick with lower surface only slightly flattened. Sticky, white threads (cuvierian tubules) extruded through anus if the animal is disturbed.		
Colour	Uniformly distributed small dark-brown dots at the base of the tube feet contrast with a golden brown background. The underside is lighter in colour.		
Habitat	Common in shallow waters and buries itself in the silty sands of calm waters where there is no ter-rigenous action, at depths of 2–15 m. Average den-sity is about 50 individuals per hectare.		
Value	Low commercial value.		
Processing	Processed like teatfish, but without cutting. Pro-cessing should be done with great care because the body wall of this species tends to fall apart after harvesting and during boiling.		



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LOLLY FISH

Holothuria (Halodeima) atra

Size	Length	:	10 – 50 cm
	Width	:	3 – 8 cm
	Body wall thickness	:	2 – 6 mm
	Live weight	:	0.2 – 1.5 kg
Shape	Cylindrical with a smooth body surface.		
Colour	Black, always with fine covering of sand except for the circular patches along the sides (see illustration). If the body surface is rubbed vigorously a red fluid is discharged.		
Habitat	This is the most common species in the region and can be found in most types of habitats. Average density is several hundred animals per hectare, but may reach several thousand per hectare in some atoll lagoons.		
Value	Only the large specimens have some commercial value. Care must be taken not to confuse this species with the other black species, <i>Actinopyga miliaris</i> , which is more valuable.		
Processing	Processed like teatfish. However it should be processed without cutting.		



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PINKFISH

Holothuria (Halodeima) edulis

Size	Length	:	20	–	30	cm
	Width	:	3	–	6	cm
	Body wall thickness	:	2	–	5	mm
	Live weight	:	0.2	–	0.4	kg
Shape	Cylindrical, similar to <i>Holothuria atra</i> .					
Colour	Upper surface dark brown to black with pink areas mostly along the sides. Underside pink. Unlike <i>H. atra</i> , its body is not sand-coated.					
Habitat	Common in numerous lagoon bottom habitats. Average density is about one hundred individuals per hectare.					
Value	Little commercial value. Its small size results in it being classified under the lowest grade 'lolly' fish.					
Processing	Processed like teatfish. However it should be processed whole without cutting.					



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ELEPHANT'S TRUNK FISH

Holothuria (Microthele) fuscopunctata

Size	Length	:	40 – 60 cm
	Width	:	10 – 15 cm
	Body wall thickness	:	8 – 12 mm
	Live weight	:	2 – 4 kg
Shape	Upper surface convex, underside slightly flattened. Prominent wrinkles on the upper side. A notch in the body indicates the position of the anus.		
Colour	Dark orange or rust-brown above, with pale grey sides and underside.		
Habitat	10–30 m deep, often on very fine sand. Frequently occurs in groups. Like the sandfish, this species is able to bury itself. Small specimens are rare. Average density is a few dozen individuals per hectare.		
Value	Little commercial value despite its large size. This species does not have a good flavour.		
Processing	Processed like teatfish. During processing a straight cut is made in the body wall along the back (i.e. upper dorsal side) up to 3 cm from each end of the animal.		



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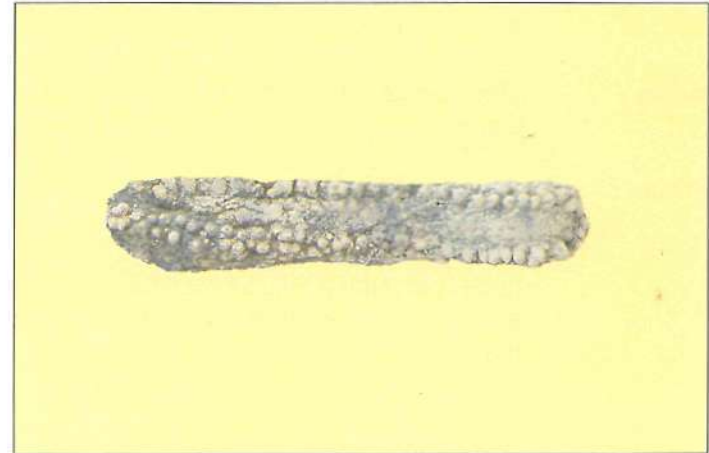
GREENFISH

Stichopus chloronotus

Size	Length	:	10 – 30 cm
	Width	:	3 – 6 cm
	Body wall thickness	:	2 – 6 mm
	Live weight	:	0.2 – 0.4 kg
Shape	Roughly square in cross-section with large prominent papillae at each corner of the square. Body surface otherwise smooth. Many tube feet in three rows on underside.		
Colour	Very dark green, appearing almost black; the papillae are orange-tipped.		
Habitat	On reef flats or on broken-coral rubble, at depths of 0 to 5 m in areas where there is much water movement. Average density is several hundred individuals per hectare.		
Value	Low commercial value. Sometimes it is classified as the lowest grade because of its small size.		
Processing	Processed like teatfish, but without cutting. Processing should be done with great care because the body wall of this species tends to fall apart after harvesting and during boiling.		



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CURRYFISH*Stichopus variegatus*

Size	Length	:	20 – 25 cm
	Width	:	6 – 12 cm
	Body wall thickness	:	6 – 10 mm
	Live weight	:	0.8 – 2 kg
Shape	Roughly square in cross-section. Upper side convex with a rough surface bearing many tubercles. Underside flat, with many tube feet.		
Colour	Quite variable. Typically dark yellow with irregular brown patches. Some specimens are almost white or greenish. The tube feet are pink.		
Habitat	In turtle-grass beds, on sediment or silty sand bottoms in areas where terrigenous action occurs, at depths of up to 30 m. Average density about 50 individuals per hectare.		
Value	This species has a medium to low commercial value.		
Processing	Processed like teatfish but should be handled with great care because its body wall tends to fall apart after harvesting and during boiling. Some markets prefer processed animals with no cuts, while others will accept a slit along the length of the animal.		



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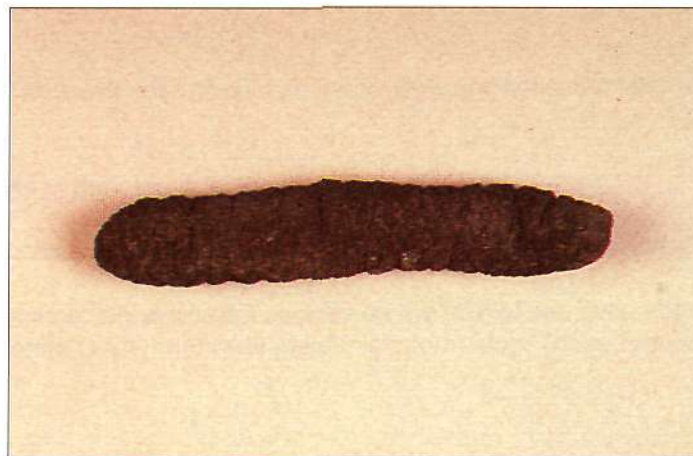
AMBERFISH

Thelenotaxanax

Size	Length	:	80 cm
	Width	:	15 cm
Shape	Large sea cucumber, quadrangular in cross-section. The upper surface is rounded while the lower surface is very flat. The body wall is thick and smooth. The ventral mouth is surrounded by 18 blunt tentacles. The upper surface is covered in rounded tubercles. Warty growths form an unbroken line along the side of the body.		
Colour	The upper surface of the largest specimens is uniformly cream or grey, sometimes with brown patches. The lower surface is cream. The younger the specimen the brighter the colouring.		
Habitat	On coral sand or shell rubble bottoms at depths of between 12 and 30 m.		
Value	Low commercial value.		
Processing	Similar processing method to teatfish (see page 28).		



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