If in doubt contact your local OATA retail member for further information

IMPORTANT THINGS TO REMEMBER:

ALWAYS PURCHASE test kits and regularly check the water for ammonia, nitrite, nitrate and pH. This will allow you to ensure that the water in your aquarium is not causing welfare problems for your fish.

ESTABLISH A ROUTINE for testing the water in your aquarium. Record your results to enable you to highlight fluctuations quickly. Also check the temperature of the water.

MAINTAIN the water in the aquarium within the accepted parameters highlighted in this leaflet. You may need to undertake regular water changes to achieve this.

ALWAYS wash your hands, making sure to rinse off all soap residues, before putting them into your aquarium. Wash them again afterwards and certainly before eating, drinking or smoking.

NEVER siphon by mouth. A fish tank can harbour bacteria which can be harmful if swallowed. Purchase a specially designed aquarium gravel cleaner which can be started without the need to place the siphon in your mouth.

NEVER RELEASE YOUR AQUARIUM ANIMALS OR PLANTS INTO THE WILD.

Never release an animal or plant bought for a home aquarium into the wild. It is illegal and for most fish species this will lead to an untimely and possibly lingering death as they are not native to this country. Any animals or plants that do survive might be harmful to the environment.

Checklist...

Equipment:

□ Aquarium

□ Gravel cleaner

□ Marine salt

□ Marine substrate and live rock

□ Reverse osmosis or deionised water or tap water conditioner

□ Heater, thermometer and hydrometer

□ Filter and protein skimmer

□ Aquarium additives including calcium

Before purchase ensure that:

□ The aquarium is well established.

□ Water parameters are as advised.

□ You are aware of the requirements of your chosen species.

ORNAMENTAL AQUATIC TRADE ASSOCIATION LTD

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How to care for...

Marine Molluscs, Crabs & Shrimps

Introduction...

Marine invertebrates can add a fascinating focal point to a marine aquarium. They can also make up the “clean up crew”, eating detritus, algae and some pests such as *Aiptasia* and bristleworm.

This diverse group of animals includes shrimps, crabs, snails and sea slugs have similar requirements, but always check with books and your retailer to their precise needs.

Water requirements...

As with all marine animals this group of organisms will not tolerate poor water quality. The water is recommended to be kept within the following parameters, although these animals may acclimatise to different water over time:

Temperature: 23-26°C

Ammonia: 0mg/l (0.01mg/l may be tolerated for short periods)

Nitrite: 0mg/l (0.125mg/l may be tolerated for short periods)

pH: 8.1-8.4

S.G: 1.020-1.025 at 20-25°

Biology...

Molluscs are a large groups of soft bodies creatures such as sea slugs and sea hares, while some may have protective shells such as snails and cowries. Most species are small but some may reach up to 10 cms.

Shrimps and crabs belong to the arthropods, which means “”jointed leg”. These hard-bodied creatures possess exoskeletons that must be shed in order for them to grow. This process, known as moulting or *ecdysis*, is often a surprise to first-time keepers of these creatures as they often mistake the old exoskeleton for a dead shrimp or crab, only to find the moulted creature to reappear. Immediately after moulting, the shrimp or crab will be relatively soft and vulnerable, but it’s new exoskeleton will harden up over time.

Hermit crabs lack the hard covering possessed by other crabs. Instead, they will use shells from other creatures for protection. These will be upgraded for larger shells as the hemit crab grows.

Most shrimps and crabs available remain small, with few exceptions. Some may reach 10 to 15cms, so seek advice from your retailer before purchase.

Aquarium requirements...

Most of these animals are scavengers or algae eaters. Therefore, the aquarium needs to be well established in order to provide a food source for them. A large aquarium is more stable than a small nano aquarium, although these animals have been successfully kept in both. The tank should have a large area of live rock which allows plenty of surfaces for algae to grow on and hiding places for these animals.

The aquarium will require a filter, heater, thermometer, hydrometer and water testing kit. These are essential to maintain and monitor water quality, the addition of a protein skimmer will also be beneficial.

These species do not require any specialised lighting however marine lighting can bring out the colours of your animals and promote the growth of organic matter which is used as a food source.

Some marine fish will feed upon these small invertebrates so it is important to ensure that the organisms are fully compatible with the animals already kept in the aquarium.

Maintenance...

At least every two weeks, a partial water change of 25-30% is strongly recommended (a siphon device is also useful to remove waste from the gravel). This help to reduce the build-up of potentially harmful nitrates and other pollutants. Replacement water should be dechlorinated using strong aeration or a tap water conditioner (if not using reverse osmosis water). Ideally, replacement water should be heated and enough salt should be added to achieve the correct salinity.

Filters should be checked for clogging and blockages. If the filter needs cleaning, then do not wash it using tap water; any chlorine present may kill the beneficial bacteria that has established within the media. Instead, it can be rinsed in tank water which is removed during a partial water change. This should reduce the number of bacteria lost.

Good husbandry is essential as these invertebrates can be sensitive to even the smallest amounts of ammonia and nitrite. Test the water weekly to monitor ammonia, nitrite and nitrate, especially after initial set-up and after adding new fish. Don’t forget to check the salinity as this may increase due to evaporation of water.

Invertebrates are highly sensitive to copper which can be found in some fish medications. If a medication is required, consult your

Feeding...

The shrimps and crabs which are readily available are often scavengers feeding upon food left by fish and detritus at the bottom of the tank. Arrow crabs are often bought for their particular liking for bristleworm, but they will also readily accept aquarium foods.

Algae eating snails will feed upon the algae which builds up in your aquarium. Other snails can be used to sift the substrate, such as *Nassarius* snails which feed upon detritus.

Nudibranchs, although spectacular in colour are not easy for beginners to look after. Often they are fussy feeders, in some cases, eating only one species of marine sponge. If considering keeping these, ask your retailer or consult books to obtain as much information as possible to ensure you can cater for their specific needs.

Common problems...

A water quality problem will affect invertebrate behaviour and can be shown by loss of colour, loss of appetite, erratic swimming. Immediately test the water if any of these symptoms are shown. Poor water quality is the main cause of disease outbreak in aquariums.

If in doubt ask your retailer for advice.

Compatibility...

Listed below are some of the more common invertebrates which can be deemed “reef safe”. Please be aware that common names for some of these creatures can vary enormously

SHRIMPS: Camelback, Peppermint, Boxer, Fire, Cleaner, Anemone.

CRABS: Arrow, Dwarf red/blue/zebra hermit, Sally lightfoot, Emerald, Red hermit, Anemone.

SNAILS: Turbo, Trochus, Cowrie, Astrea, Nassarius.

Species requiring careful consideration and research:

Harlequin shrimp: feeds only upon tube feet of echinoderms. Mantis shrimp: will feed upon all fish species and can cause

Breeding...

There are few reports of this group of organisms breeding in home aquaria.