

Cryptic Crustaceans

by Mark Webster

If you have an interest in macro photography as I do then you have an almost endless choice of marine subjects to keep you occupied during a dive. One of the fascinations for me are the many symbiotic and cryptic relationships between species and that applies particularly to numerous species of crustaceans that are found on corals, anemones and larger invertebrates.

Some of these species are easy to find and some are well camouflaged to match their hosts and whilst there are a few to be found in temperate waters the majority thrive in tropical conditions with particular hot spots in Malaysia, Indonesia and the Philippines. A few are regarded as unusual or even rare and consequently become a grail or must have for the avid macro imager. Most trips overseas to a tropical location are a significant financial commitment on top of the substantial investment you are likely to have in underwater photography equipment, so it is only natural to want to ensure that you get best value from the trip and that of course means successful images. We often rely on the abilities of a local guide to find difficult subjects and that

can work well with a small group, but it does help to do a little research of your own to know a little about your target subjects and habitats. This will enable you to not only find your own subjects but also plan a little better for the images that you would like to capture. What follows are a few of my favourite subjects and some notes on habitat and photographic technique that may help planning for that next special trip to the far east.

Sea Urchins and Starfish

There are numerous species of sea urchins, but not all are host to crustaceans and only by looking carefully at each species you encounter will educate you as to which are the most likely candidates. The fire urchin is the most spectacular looking sea urchin and is also home to two or three species of crab and shrimp, but not on the same host at the same time.

One of the rarer species is the Coleman shrimp which are usually found in pairs towards the crown of the urchin where they will pick out spines to create a small home. These are small shrimps, the larger female maybe 10-12mm, which have the



Coleman shrimps are the undisputed stars of a symbiotic relationship with the fire urchin. They are difficult to find, being very small and only seen on a handful of urchins, so a good local guide is a great help in your search. Once found they are an easy and co-operative subject but can be difficult to achieve the correct colour balance due to the strong red and blue hues reflected by the urchin spines. Nikon D7100, Subal ND7100, 105mm macro, SubSee +10 wet lens, Inon Z240 flash guns, ISO 100 f18 1/125.

most striking black and white livery which is easy to over expose. You will need additional magnification with ideally a 105mm macro lens and then simply work around the urchin for the best composition and lighting angle. The shrimps don't move, so from that point of view are an easy subject, but you will often find in post processing that the reflected light from

the blue and red spines of the urchin is absorbed in the white of the shrimp and it may take some adjustment in these channels to reduce the effect.

Fire urchins that do not host Coleman shrimps often have the alien looking zebra crab, which as the name suggests is also black and white. This species is normally found singly on the urchin, although I have seen pairs,



Fire urchins are also occasional hosts to the Zebra crab which sports the same monochrome livery as the Coleman shrimps. The crabs are generally bigger and will be found initially close to the base of the urchin. They are not as patient as the shrimps and will move amongst the spines of the urchin once they realize your interest, pausing every now and then for you to take a shot. Nikon D100, L&M Titan housing, 105mm micro, Inon Quad flash, ISO 200 f22 1/100.

and they prefer to live at the base of the urchin close to the seabed and do not clear a residential patch of spines. The dive guides will normally gently persuade the crab up onto the top of the urchin with a chop stick where they will pose for a few seconds – so it is up to you if you approve of this level of interaction but the crabs don't seem to mind so much. As with the Coleman shrimp getting a pure white

can be a challenge if you want to retain the very saturated colours of the urchin.

A third species of crustacean encountered on the fire and other spiny urchins are small squat lobsters that also make their home on other hosts and will often have a colour pattern that closely matches the urchin so can be difficult to spot initially.

The larger cushion urchins which



Sea cucumbers of various species are very common around tropical reefs and muck sites, but only some are host to pairs of these attractive Imperial shrimps. Dependent on the size of the host they may be found on top, particularly if the sea cucumber is on the move and the shrimps are looking for a passing meal. The female is the larger of the pair and they are a fairly co-operative subject with strong colours which are a fantastic contrast to their normally drab host. Nikon D7100, Subal ND7100, 105mm micro, Inon Z240 flash guns, ISO 125 f16 1/125.

have a patterned smooth textured surface to them are also home to small imperial partner shrimps but they tend to be a much closer match in colour to their host and are sometimes a challenge to find a contrast. This species generally like to be on the underside of the urchin but will venture briefly on to the upper surface if you gently lift the urchin. This also applies to some species of starfish, in particular the blue starfish commonly seen in Indo-Pacific seas, which often have small colour matched Imperial shrimps on their underside.

Sea Cucumbers

There are several species of sea cucumber to be found in tropical waters but not all are host to crustaceans. On the larger spiny species of sea cucumbers the most common hitch hiker are the brightly coloured imperial shrimps which are frequently found in pairs with the female being the larger of the two. These shrimp may be spotted on top of the sea cucumber but often they are camera shy and may retreat underneath their host. Generally this species is large enough for a 60mm or 105mm macro lens without additional



Sometimes it is difficult to position yourself to capture the shrimps against open water which can lead to a distracting or competing background as negative space. If the reef is far enough away the macro lens will render it soft due to the narrow DOF, but if it is closer you may need to open the aperture to reduce it further. Nikon D7100, Subal ND7100, 105mm micro, Inon Z240 flash guns, ISO 125 f16 1/125.

magnification, although the additional working distance of the 105mm is a benefit. There is also a species of crab, often with a colour and pattern to match the host, which prefers to live close to the exhaust end (anus) of the sea cucumber and are often very small with a low profile which makes them difficult to discern.

Sea Whips

Sea whips play host to several different species of shrimp, crab and occasionally squat lobster in addition to the small gobies that favour them. The shrimp varieties include horned, beaked, rhino and needle or saw blade shrimps as common names dependent on where you are in the world. Under natural light their partly transparent bodies and colouring provide a near



Zeno crabs are often mistaken for shrimps but do have a very different body shape. They are far less common than the shrimps and once again a guide with good local knowledge is your best guarantee for finding one during a trip. Their colour tends to match the host sea whip very closely and they are often found submerged into the polyps until they begin to sit up under the focus light. Nikon D300, Subal ND20, 105mm micro, Inon wet lens, Inon Quad flash, ISO 100 f29 1/40.

perfect colour match to their host, but with the addition of flash the carapace and internal organs will reflect light and glow creating a better contrast with the sea whip. Contrast can also be improved by trying to position the subject against open water so that you can create a black background or if conditions allow a natural light background. Single shrimps and pairs are quite common and every now and

then you will encounter a sea whip with six or more which may provide more compositional choice.

One popular and rarer sea whip critter is the Zeno crab, which may be mistaken for a shrimp until you have a closer look at the body shape and the arrangement of its limbs. These guys like to hug the sea whip and are often almost covered by the polyps which makes them quite difficult to spot.

They are also not as frequently seen as the shrimps but normally a good guide will know where he can find resident Zeno crabs if these are on your hit list.

Both shrimps and Zeno crabs are often very small so are best shot with additional magnification whether you use a DSLR or compact. Sea whips are mostly found on walls or slopes where they can reach out into the current to feed. If there is current flowing then the sea whip is likely to be vibrating which makes focusing a real challenge. You may be able to position your body upstream of the current and create a lee to reduce the current flow on to your target and mitigate the movement, but this often is not the best position for your composition! Try also fixed focus and shoot as the subject drifts in and out of focus – many will be out of focus but now we have almost endless image capacity you can simply discard these and thank the photo gods that you are no longer shooting film!

Crinoids (Feather Stars)

You will find feather stars in the Red Sea and throughout the Indo-Pacific regions. The main difference between the locations appears to be that in the Red Sea you will most likely see feather stars out at dusk and during the hours of darkness, whereas in the Indo-Pacific seas they decorate the reefs throughout the day and night often in huge numbers. In the Red Sea I have seen cling fish, squat lobsters and only once a shrimp in the arms of feather stars, but you have to look hard for them. In contrast Indonesia, Malaysia or the Philippines finding these critters is much easier, but getting a good image of course is another matter.

To begin your search choose crinoids that are fully open and feeding in the current. When the host is fully open the shrimp and squat lobsters often



Crinoid squid lobsters are normally very closely coloured and camouflaged to their host and so can be quite difficult to spot. If the crinoid is open and feeding then look towards the ends of the arms where they are often located to feed themselves. If the crinoid is closed then may guides have a method using a chop stick to encourage the crinoid to open and reveal the critters. You need to decide if you accept this level of manipulation and advise the guide. Nikon D100, L&M Titan housing, 105mm micro, Inon wet lens, Inon Quad flash, ISO 200 f22 1/160.



There are some exceptions to the camouflage rule and occasionally you will find a crinoid shrimp like this one that contrasts totally with its host. Whether this is intentional or perhaps this shrimp is a refugee from a yellow crinoid I do not know but it provides a striking contrast. Nikon D7100, Subal ND7100, 105mm micro, Inon Z240 flash guns, ISO 200 f22 1/125.

find their way toward the end of the arms to feed as well which helps to spot them and also makes them more accessible to photograph. If the crinoid is partially closed or the critter is at the bottom of the arms close to the body then there are tricks that the dive guides employ with chop sticks or reef sticks to encourage the crinoid to open and make the subject more accessible. Once again, it is your personal choice if you accept this level of intervention by the guides, but if you don't then make it clear as for most guides it is standard practice.

These subjects are very small and will need additional magnification to fill the frame and need patience to shoot, so when you find a co-operative subject make the most of it. Good buoyancy control, a stout reef stick and neutrally trimmed camera rig will help to stay steady enough at high magnification to capture sharp images.

Anemones

Anemones maybe most commonly associated with a variety of clown fish species, but they are also host to numerous different crustaceans as well. Sometimes finding these critters is the easy part as there are some clown fish that take the defence of their anemone host very seriously and will launch persistent attacks on the persistent photographer..... one actually drew blood biting my hand in the Philippines early this year! So be prepared to suffer for your art if the clown fish mob decide to see you off the premises.

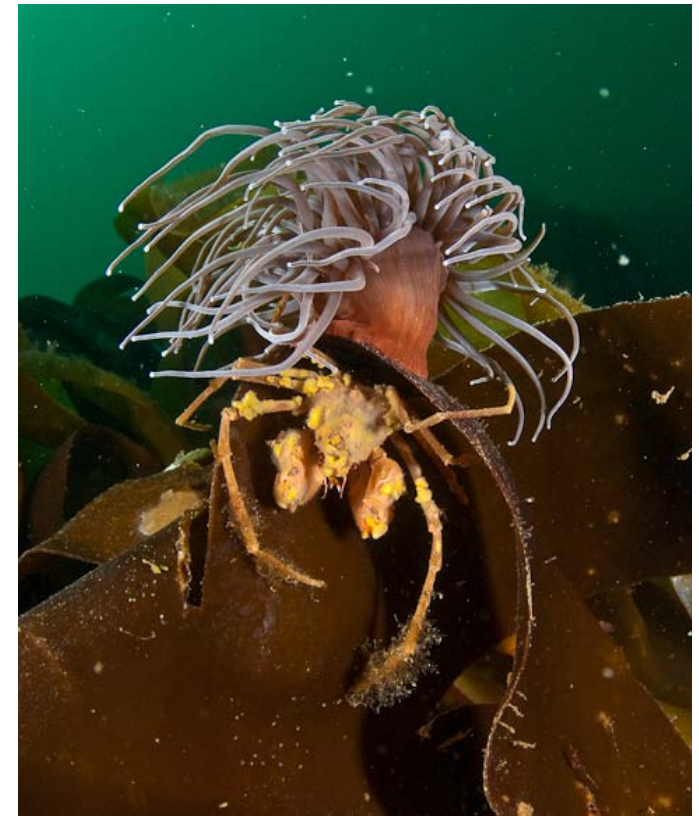
Those anemones that do not host clown fish are equally good hunting grounds for colourful species of shrimp and crabs. Some are almost transparent, but still show well under flash, whilst others are brightly coloured in red, blue, yellow and white. You will find the striking clown crab most often just



There are numerous different species of translucent shrimp to be found in anemones. Some are only associated with a specific anemone species, but they can all be a challenge to list well enough to create a contrast with the host and also avoid casting shadows from the anemone tentacles. D7100, Subal ND7100, 105mm micro, SubSee +10 wet lens, Inon Z240 flash guns, ISO 100 f22 1/125.

under the skirt of carpet anemones or at the base of tube anemones, whilst porcelain crabs prefer the edge of the anemone where they can sift passing plankton.

Perhaps surprisingly we also have critters dwelling symbiotically with anemones in UK



We even have our own anemone crabs in UK waters. The symbiotic relationship between the Leach's spider crab and the snake lock anemone is very similar to the tropical species. The crab helps keep the anemone clean and healthy and also shares any meals that may come their way. Nikon D300, Subal ND20, 10-17mm FE zoom, Inon Z240 flash guns, ISO 200 f11 1/40.

waters. The Leach's spider crab is commonly found on snake lock anemones in the summer months and a Mediterranean species of shrimp (*Periclimenes sagittifer*) is now seen regularly off the coast of Devon and Dorset in the snake locks, although I have yet to find one in Cornwall. Fortunately there



There are a number of similar looking species of small porcelain crabs that live amongst hard corals, soft corals, sea pens and in this case a gorgonian. They are most active at night but can be seen during the day as well. This one has some even smaller neighbours in the background. Nikon D300, Subal ND20, 105mm micro, Inon wet lens, Inon Quad flash, ISO 100 f25 1/40.

are no clown fish to attack us in the UK!

Most of the anemone critters can be shot with a 60mm or 105mm macro lens or compact system, although there are some smaller shrimps that will benefit from the use of a wet lens to fill the frame.

Corals and Sea Fans

You will find many similar species of crab and shrimp on corals,

but they are often more difficult to spot particularly during the day when many prefer to hide amongst the polyps. At night it is a different story as many of these critters come out to feed and will remain exposed under your lights long enough to capture a few images. Sea fans and soft corals are a good place to look for decorator crabs and various shrimps whilst porcelain crabs are common on hard corals and sea fans too. The porcelain



All sorts of fantastic critters emerge at night like this decorator crab that has a spectacular covering of polyps to camouflage itself. At night they creep out onto a gorgonian in this case in search of a meal. Nikon D300, Subal ND20, 105mm micro, Inon wet lens, Inon Quad flash, ISO 100 f25 1/100.

on capturing any critters discovered before they shy away from your light.

Sponges

Sponges are another popular habitat for a variety of crustaceans including exotics like the hairy squat lobster, tiger shrimps, bumblebee shrimps, decorator crabs, hermit crabs and other more humble looking shrimps. Some of these species only reside on particular sponge types and have very good camouflage to blend in with either the sponge or other residents. For example the hairs on the hairy squat lobster have evolved to match the appearance of the hairs on brittle stars that inhabit the barrel sponges so that they are very difficult to spot until have seen them a few times.

If you are seeking the exotics like the tiger or bumble bee shrimp then the habitat is very specific and you will really need the help of a good guide to locate them for you. These shrimp, the bumble bee in

crabs in particular will retreat into the coral fairly quickly after a few seconds of surprise when caught in your focus light, so it is often best to pre-focus and lock the lens before moving in to take a shot, which will avoid the lens hunting whilst the crab disappears back into the coral. Decorator crabs are much bolder and move more slowly and can look quite spectacular with their decoration of polyps or sponges. In your search don't ignore sea pens on the sand between the reef patches as they also provide a habitat for many of these critters. In the dark it is best to keep your rig simple with a fixed flash position so that you can concentrate



Another really striking but very tiny shrimp is the bumble bee shrimp. This is another species that you are very unlikely to find without the help of a guide who generally know which rocks to look under. They will stay still for a few moments before they hop a short distance so need a good dose of patience to photograph well with the extremely narrow DOF of a wet diopter. D7100, Subal ND7100, 105mm micro, SubSee +10 wet lens, Inon Z240 flash guns, ISO 250 f40 1/180.

particular, are very small and will need high magnification which can be a real challenge when you have water movement and subject movement at the same time. Shoot lots and be prepared to discard lots of images due to soft focus or poor composition!

Nudibranchs

The same species of imperial shrimp that hitch a ride on sea

cucumbers can also be found on some species of nudibranch. In the Red sea the large nocturnal Spanish dancer nudibranch often has a small imperial shrimp which resides around the gills and normally sports a livery of red or orange to closely match the host. Further east in Indonesia and the Philippines there are several species of nudibranch that attract Imperial shrimps, but rarely with colours



Imperial shrimps are also found on larger nudibranch species, although sometimes the shrimp can be almost as large as the host. Nudibranchs move slowly enough for the shrimp to share a meal or leave the host briefly to feed and then return. Nikon D100, L&M Titan housing, 105mm micro, Inon Quad flash, ISO 200 f22 1/125.

on top and even poses on the head of the host for you.

If you want to shoot the nudibranch and shrimp together then a 60mm lens will be ideal whilst a 105mm will allow you to focus on the shrimp and detail of the host.

that match their host. Finding them on the larger species on nudibranch is most common but I have seen shrimps that almost dwarf their host, so there must be occasional jumping from one host to another or perhaps a fully grown shrimp has to join a juvenile nudibranch if an adult host expires. Observing the pair it would seem that the shrimp is simply along for the ride and will feed as the nudibranch cruises along and occasionally share a food source if it is suitable. The combination of these two critters together is irresistible to photographers and generally an easy subject to work with as the nudibranch is moving slowly and the shrimp stays

Whilst this overview is by no means exhaustive hopefully it will have given a flavor of the variety of different crustaceans and their symbiotic lifestyles with different hosts. The relationships between species in the macro world is fascinating and offers seemingly endless opportunities to photographers who are prepared to slow their pace and concentrate on the detail of both the hosts and hitchhikers. This will produce pleasing compositions and a glimpse into a surreal world for those who view your images.

Mark Webster
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