sera guide

Shrimps and crayfish

- Shrimp and crayfish biotopes
- Successful setup and maintenance

Contents

The fascinating world of shrimps and crayfish

Shrimps and crayfish are useful and extremely interesting inhabitants of our aquariums. These animals are also frequently kept together with fish. Dwarf shrimps, in particular, have become more and more popular during the last years. Shrimps such as the Amano shrimp (*Caridina multidentata*) are mainly kept as scavengers and algae eaters in our aquariums. Above all, they rid plants of annoying algae.

Due to the splendid colors and the interesting behavior, it is a special pleasure to design underwater landscapes only for shrimps and crayfish. Nano aquariums are particularly well suited for this purpose. These are very small biotope aquariums close to nature.

This **sera** guide provides support when setting up and maintaining the fascinating world of shrimps and crayfish.

Shrimp species

Dwarf shrimps

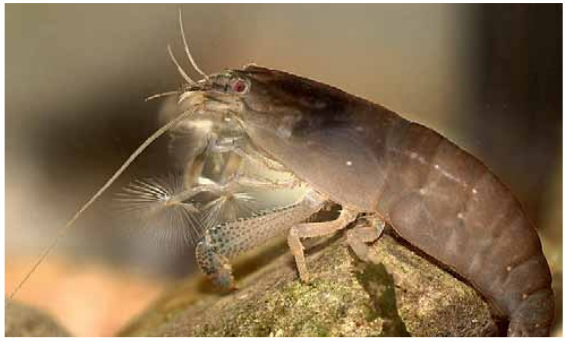
A crustacean group consisting of many small (often only up to 4 cm / 1.6 in.) shrimp species that is very popular among aquarists. Dwarf shrimps graze off algae and other periphyton from surfaces such as plants or rocks. The decorative and interesting animals are usually very peaceful and can be kept in large groups. They can also be kept together with calm fish and other aquarium inhabitants.

Longarm prawns

These shrimps have rather long claws. Some species grow very large, therefore some of them may also eat fish and other crustaceans. Furthermore, their distinct territorial behavior may cause fighting with other members of their own species. Smaller species such as the Pearl shrimp (*Macrobrachium cf. banjarense*) or the Riceland prawn (*Macrobrachium lanchesteri*) are usually more peaceful and require less space.

Fan shrimps

These animals have long bristle brushes at the ends of their first leg pair that they can extend like a fan. They use these fans to filter floating food particles (herbal and animal plankton) from the water current. Fan shrimps like to sit on coarse or solid surfaces where they can get a hold in the current.



Crayfish species

Dwarf crayfish – *Cambarellus* species

Cambarellus species are well suited for keeping in aquariums. Fully grown, their size is between 3 and 6 cm (1.2 – 2.4 in.). It is not advisable to keep them together with shrimps, since shrimps may be considered a welcomed snack. Plants are not eaten, therefore you can keep dwarf crayfish in planted aquariums. Their lifetime is between 1.5 to 2 years. *Cambarellus* species originate from South America.

Cherax species

These colorful crayfish are considerably larger than the *Cambarellus* species, and they live longer – up to 8 years. They are usually peaceful. Due to their large claws they move somewhat clumsily. *Cherax* species like to hide. Some species are nocturnal, whereas other look for food also during daytime.

Keeping shrimps and crayfish

There is a general rule for keeping, even with peaceful and sociable shrimps: Less is more! Furthermore, in case of keeping many specimens it is important to provide as many places to retreat as possible. Especially while exuviating, crayfish and shrimp need shelters to protect their soft body.

Exuviation

Crayfish and shrimps have a so-called exoskeleton, i.e. an external skeleton. It is regularly replaced with a new one by exuviation since it cannot grow. It is an exciting moment when the crustacean leaves its old shell, also named “exuvia”, and the new, soft and flexible “shell” becomes visible. After being stretched to the new size, the exoskeleton hardens by chemical processes and by depositing minerals such as calcium. Injured or severed limbs can be replaced by and by with the exuviations. Exuviation problems are usually caused by unsuitable keeping conditions, wrong or insufficient nutrition. You can prevent exuviation problems with the special food for crustaceans **sera crabs natural** and **sera shrimps natural**.

The skin (exuvia) after the exuviation

Community aquariums

Keeping shrimps and fish together requires some careful consideration. The danger is often not caused by the shrimps but by the fish. Especially guppies and cichlids tend to nibble at their co-inhabitants.
The same applies for crayfish. For keeping in community aquariums, mainly dwarf crayfish such as the Mexican Orange dwarf crayfish (*Cambarellus patzcuarensis* var. “Orange”) are recommended. Keeping larger crayfish bears the risk of them digging up the carefully set-up aquarium and destroying the plants. Furthermore, particularly aggressive crayfish might harass the fish. Larger crayfish should therefore be kept in a tank on their own. However, you must bear in mind that keeping too many animals in insufficient space may lead to increased aggression and cannibalism.

Mexican Orange dwarf crayfish
(*Cambarellus patzcuarensis* var. “Orange”)

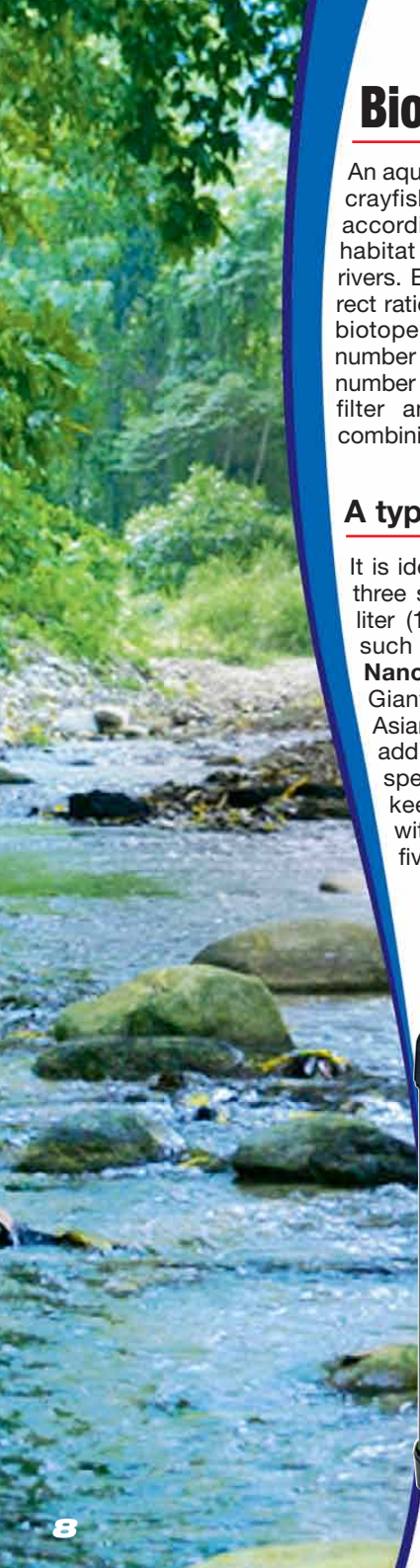
Hatchetfish

Armored catfish

Recommendation for community aquariums

Be sure to select the animals very carefully if you wish to keep crayfish or shrimps in a community aquarium. Surface fish (e.g. hatchetfish) or bottom-orientated fish (e.g. not too small armored catfish) are suitable fish for a community aquarium. Keeping them together with very lively livebearers, clown loaches or cichlids is not advisable. As for the larger crayfish species, only the rather peaceful Australian *Cherax* species such as the Red Claw (*Cherax quadricarinatus*) or the Yabby (*Cherax destructor*), if at all, can be recommended for keeping them together with robust fish species.

Yabby
(Cherax destructor)



Biotope aquariums

An aquarium with shrimps and crayfish is ideally set up according to their natural habitat – brooks and small rivers. Everything is in the correct ratio for the corresponding biotope, e.g. aquarium size, number and size of animals, number of plants, plant species, filter and light. This avoids combining animals that do not harmonize due to their size, nutritional requirements and origin. A natural biotope allows to optimally adjust water quality and maintain it permanently without much care effort. **sera** gives you the following biotope suggestions:

A typical shrimp biotope

It is ideal to keep only one to three shrimp species in a 60 liter (15.8 US gal.) aquarium such as the **sera Biotop Nano Cube 60**. African Giant Fan shrimps and Asian Fan shrimps (please add just one of the two species) are suitable for keeping them together with dwarf shrimps. Add five to, at the maximum, twenty animals in total. However, keep the number of larger animals such as African Giant Fan shrimps low.

Shrimps in the pictured **sera Biotop Nano Cube 60**:
2 African Giant Fan shrimps
15 Crystal Red Bee shrimps

See page 12 for information about the plants, please.

Amano shrimp
(*Caridina multidentata*)

African Giant Fan shrimp
(*Atya gabonensis*)

Crystal Red Bee shrimp
(*Caridina cf. cantonensis*)

Green shrimp
(*Caridina cf. babaulti* var. “Green”)

Bumblebee shrimp
(*Caridina cf. breviata*)

Asian Fan shrimp
(*Atyopsis moluccensis*)

Red Cherry shrimp
(*Neocaridina heteropoda* var. “Red”)

Biotope aquariums

A typical crayfish biotope

You should add 6 dwarf crayfish at the maximum in a 60 liter (15.8 US gal.) aquarium. Larger crayfish such as Yabbies require an aquarium at least 1.20 m (4 ft.) long for keeping one pair.

Dwarf crayfish in the pictured **sera Biotop Nano Cube 60**:
6 Mexican Orange dwarf crayfish

See page 12 for information about the plants, please.

Cambarus manningi

Yabby
(*Cherax destructor*)

Apricot crayfish
(*Cherax holthuisi*)

Rainbow crayfish
(*Cherax sp.* var. “Hoa Creek”)

Red Brick crayfish
(*Cherax sp.* var. “Red Brick”)

Red Claw
(*Cherax quadricarinatus*)

Mexican Orange dwarf crayfish
(*Cambarellus patzcuarensis* var. “Orange”)

Asian Tiger lobster
(*Cherax sp.* var. “Tiger”)

Plants

According to the natural habitat – brooks and small rivers – the number of plants should be limited. However, it is not advisable to go entirely without plants as plants break down pollutants. Furthermore, especially juvenile crustaceans will find hideaways and, due to the settling micro organisms, an excellent food source.

Java fern, vallisnerias, moss balls and different moss species such as Java moss are to be mentioned as especially suitable.

The number of plants suggested here can be altered according to your personal taste. For example, a background consisting of Java moss can look extremely attractive. When scheduling the plant arrangement, please consider that the purchased plants are not fully grown yet.

6 *Vallisneria*
1 – 2 Java fern
2 – 3 Moss balls
Java moss according to taste

H1 *Vallisneria*

M1 Java fern
(*Microsorium pteropus*)

V1 Moss ball
(*Cladophora aegagrophila*)

V2 Java moss
(*Vesicularia dubyana*)

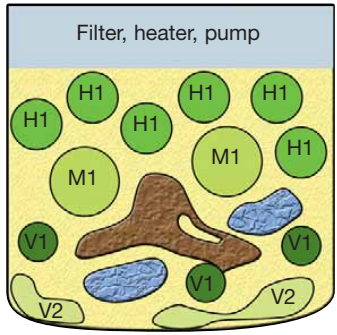
Location

Do not place the aquarium in direct sunlight. Otherwise, algae growth will be supported, and the water will heat up too strongly.

The cabinet for an aquarium must be stable and horizontal. Matching **sera** aquarium cabinets are ideal.

You should give some thought about the ideal setup before starting to decorate your aquarium. A sketch in which you draw all rock constructions, roots and plants, is a good basis.

sera Biotop Nano Cube 60



- Schedule enough hideaways. Caves are particularly popular. You can very easily build them using slab-shaped rocks or lime rock with holes.
- Large plants belong to the back of the aquarium, otherwise they will obstruct view. Small-growing and lawn-forming plants are suitable for the foreground.
- Suitable decoration material easily allows to hide technical equipment (filter, heater etc.) inside the aquarium.

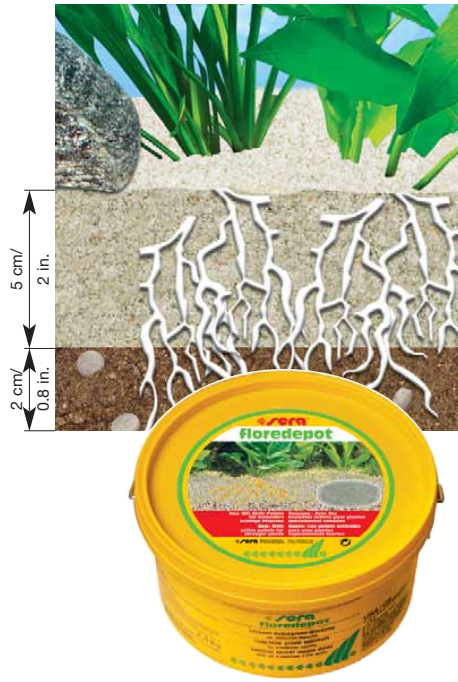
H1 *Vallisneria*
M1 Java fern
V1 Moss balls
V2 Java moss
Bog wood
Rocks

Bottom material and decoration

Bottom material

First distribute a **sera floredepot** long-time bottom gravel blend layer of approx. 2 cm (0.8 in.) where you want to add plants. During the initial phase, plants will be provided nutrients needed for strong roots and green leaves. Cover it with a 5 cm (2 in.) layer of freshly washed, undyed, finely grained aquarium gravel or river sand plus a few larger pebbles.

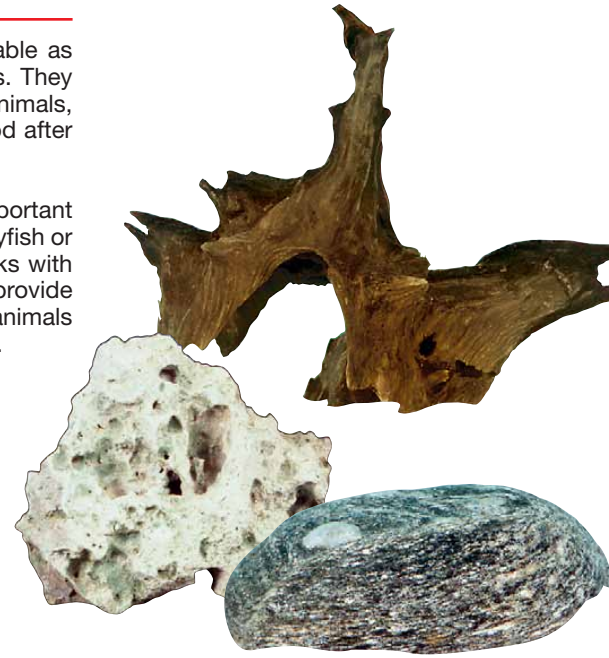
If you do not want to use sand in the aquarium, it is important for keeping crustaceans that you always blend some sand in with the gravel. The animals require single sand grains or very small gravel bits for depositing them in their sense of balance, the so-called statocyst.



Decoration

Just like plants, bog wood are suitable as “pasture” and as structural elements. They provide the shelter required by the animals, especially during the important period after exuviation.

Additional hideaways are very important especially if you keep aggressive crayfish or longarm prawns. In such cases, rocks with holes or tubes are suitable. They provide easily defendable shelters for the animals until their exoskeleton has hardened.



Technical equipment

Install the technical equipment after you have filled in the bottom material and the decoration.
This work is not necessary in case of the **sera Biotop Nano Cube 60**.

1

sera compact aquarium for an easy start

With its complete plug-in equipment, the **sera Biotop Nano Cube 60** is immediately ready for use. The bioactive filter system immediately starts the biological pollutant breakdown. This saves you weeks of biological activation.

1 Aquarium with bow front
Polished glass
Volume approx. 60 liters (15.8 US gal.)
Dimensions:
width 40.3 cm x height 46 cm x depth 48.4 cm (15.9 in. x 18.1 in. x 19.1 in.)

2 Aquarium cover with
2.1 fluorescent tube T5 PL-18 W
2.2 food opening
2.3 fold-and-push mechanism

3 4 chamber internal filter with
3.1 net
3.2 filter sponge for mechanical filtration
3.3 1,000 ml (290 g / 10.2 oz.) **sera siporax** with 270 m² (2,900 sq.ft.) filter surface for biological filtration
3.4 **sera heater 50 W**
3.5 **sera flow pump STP 1000**

Includes:
- 100 ml (3.38 fl.oz.) **sera blackwater aquatan** water conditioner
- 50 ml (1.7 fl.oz.) **sera filter biostart** biocultures for biological pollutant breakdown

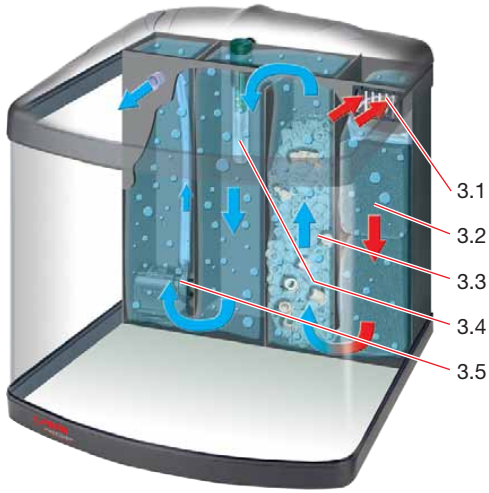
The **sera Biotop Nano Cube 60** is equipped with a glued-on safety frame. Place the aquarium with its frame directly onto the cabinet. Do not use any additional mats.

2.1

2.2

2.3

2.3



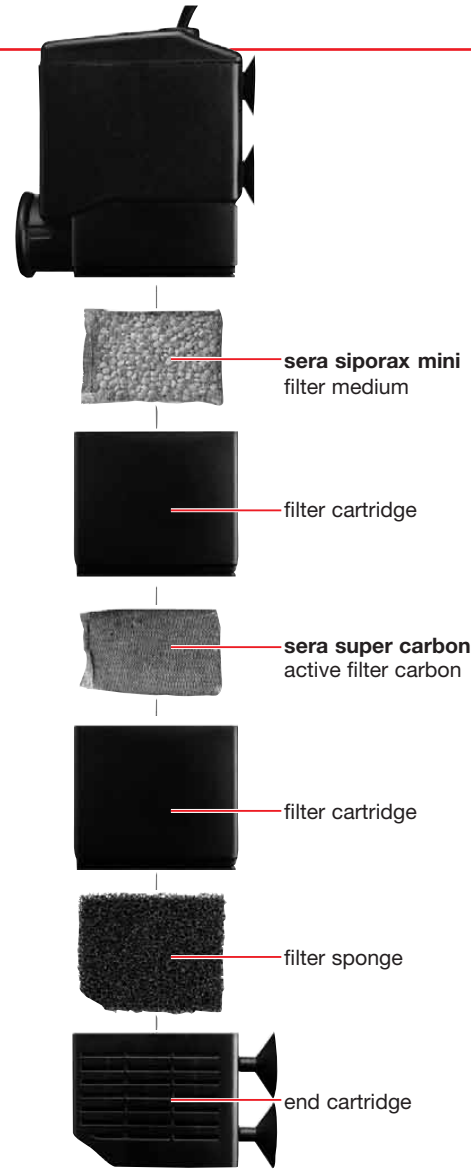
Technical equipment

Filter

A filter fulfills two important tasks in a crayfish or shrimp aquarium. On the one hand, it purifies the water, on the other hand it creates a constant water flow that imitates a brook. For example, fan shrimps can take up their food only from a current. **sera** internal filters for small aquariums – **sera fil 60** or **sera fil 120** – are ideal for the effective mechanical and biological filtration. In connection with the biofilter medium **sera siporax mini,** they provide biologically clean water.

The **sera fil internal aquarium filters** can be extended with additional cartridges.

The surface of **one liter (one US quart) sera siporax mini** has almost as much biological breakdown power as 34 liters (9 US gal.) of ceramic filter material



Light

Shrimps and crayfish have no special requirements concerning light. Therefore, hoods with several lamps allow to choose one lamp that specially takes the requirements of the plants into account, e.g. the **sera plant color**. We recommend the **sera tropic sun** in case only one lamp is used.

Heater

Many shrimps originate from subtropical climate zones. Seasonal temperature variations are therefore natural and can even increase breeding success. The optimal temperature range is between 19 and 25°C (66 – 77°F), e.g. for Tiger, Bumblebee and Bee shrimps. Amano shrimps even feel well between 10 and 30°C (50 – 86°F). Most crayfish require temperatures between 20 and 27°C (68 – 80°F). The animals have optimal growth rates at about 25°C (77°F). The **sera aquarium heater thermostat** is recommended for heating up the aquarium.

Cover

Both crayfish and shrimps require a cover on top of the aquarium that prevents them from escaping, since they like to explore their closer surroundings and might leave the aquarium to do so.

Oxygen supply

Just as in the fast flowing brooks of the natural habitats of these animals, high oxygen levels are also required in the aquarium water, as this is important for both exuviation and reproduction. It is achieved with an additional pump apart from the filter, e.g. the **sera air diaphragm pump** in connection with an air stone from the **sera air set**.

Water conditioning

Filling in water correctly

First place a shallow plate on the gravel as to avoid water swirling up the gravel and the under gravel bottom substrate. Then pour the lukewarm (24 – 26°C / 75 – 79°F) water on top of it until the tank is filled by two thirds. The **sera precision thermometer** makes temperature control easier.

Conditioning the water

Crustaceans generally are even more sensitive to chemical water pollution than many fish species. It is therefore necessary to condition tap water. Always add **sera aquatan** or **sera blackwater aquatan**, specially developed also for crustaceans, to the water every time you fill the tank, be it the first filling or a partial water change. They will immediately bind the heavy metal ions, clarify the water and neutralize toxic substances such as aggressive chlorine. It is additionally recommended, e.g. during the biological activation phase of if necessary, to use **sera super carbon** as an active carbon that reliably removes other toxic substances from the water.

Also consider the correct water hardness. The water hardness describes the concentration of dissolved alkaline earth metals. Soft water contains less of these ions – mainly calcium and magnesium – than hard water. Most shrimp species have adapted to rather soft water in their original habitats.

For example, Red Cherry and Amano shrimps require a carbonate hardness of 4 – 16°dKH, Bee and Tiger shrimps an even lower range of 2 – 10°dKH. A carbonate hardness of 5 – 10°dKH is therefore in any case correct. Crayfish are usually adapted to environments with slightly harder water. If you need to lower the carbonate hardness due to hard tap water, you can do so by placing **sera super peat** (peat granulate) in the filter. This will also inhibit the growth of harmful fungi and bacteria.
You can check the carbonate hardness with the **sera kH-Test** kit and increase carbonate hardness with **sera KH/pH-plus** if necessary.

Immediate help

If in spite of all diligence the concentration of pollutants should quickly rise strongly, **sera toxivec** will immediately prevent acute intoxication of the animals in the aquarium.

Amano shrimp
(*Caridina multidentata*)

Red Cherry shrimp
(*Neocaridina heteropoda* var. “Red”)

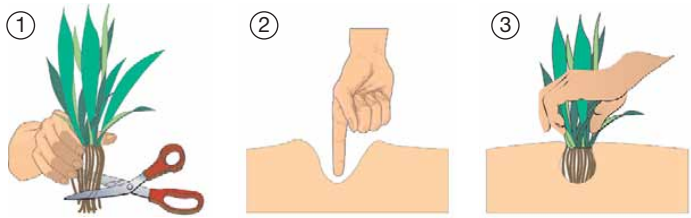
Adding plants

Newly purchased plants should always be watered in a separate tank for several days. Change the water several times while doing so as to remove excess fertilizer and possible remainders of treatments and plant protecting agents. Furthermore, planting stem plants may cause some trouble as some of them can release harmful plant substances when cutting them.

1. Shorten the root tips slightly with a pair of sharp scissors before planting (fig. 1), and remove rotten or frayed leaves.

2. Dig a planting hole with your finger into the gravel which has been prepared with **sera floredepot** (fig. 2).

3. Carefully put the roots into the hole (fig. 3) and cover them with gravel. Press the gravel carefully and pull the plant slightly, so that the roots face downwards again.



Fertilize plants correctly

Successfully keeping plants becomes easy with the finely adjusted **sera** fertilization system. The **sera floredepot** bottom substrate provides the plants an optimal basis for strong growth. Use **sera floreplus** as a growth promoter during the first 4 – 6 weeks. The faster the plants grow, the sooner they will contribute to the biological water purification and supply the aquarium inhabitants with oxygen. Then start regular fertilization. Plants that take up their nutrients mainly via the leaves are fertilized with **sera florena**. Plants that take up the nutrients mainly via the roots are ideally cared for by means of **sera florenette A**. Top up the nutrients consumed daily with **sera flore daydrops**.

Introducing the animals

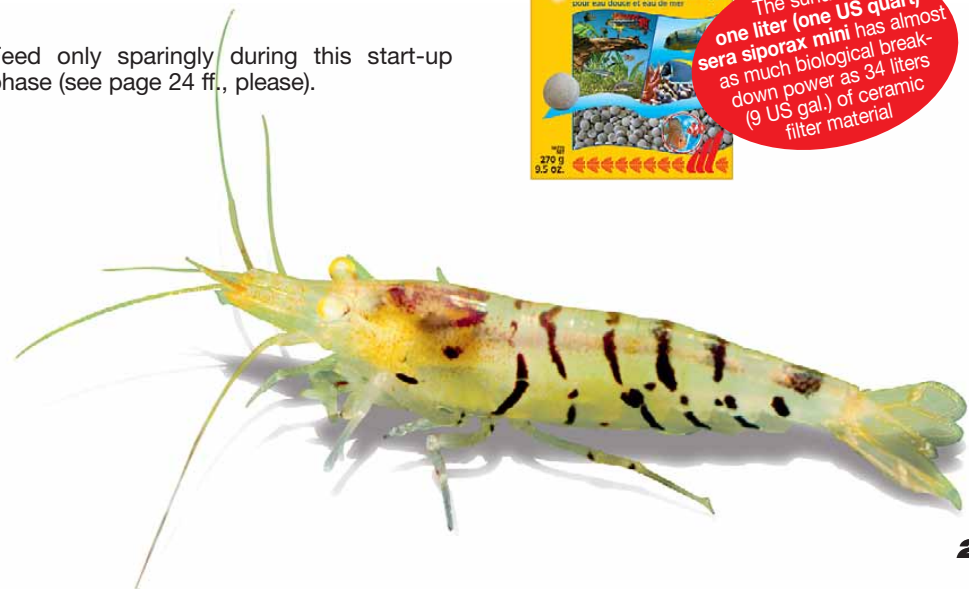
Now, finally, the aquarium is decorated and planted; filter, heating and lighting work as they should. The **sera** tests reveal good water quality.

- Pour **sera filter biostart** onto **sera siporax mini**. Put the filter into operation. The biological breakdown within the filter starts right away.
- Add **sera bio nitrivec** to the aquarium water. This will start the biological pollutant breakdown in the aquarium.
- Add 10% of the animals on the next day (1st day).

  Add **sera bio nitrivec** (normal dose) each day for 10 days running. You will shorten the time in which the filter bacteria become active by doing so.
- 4th day: Add 30% of the animals.
- 5th and 7th day: check ammonium and nitrite. **sera toxivec** quickly neutralizes too high values.
- 8th day: Add another 30% of the desired animals.
- 10th day: same as 5th and 7th day.
- 11th day: Add the final 30% of the desired animals.

The surface of **one liter (one US quart) sera siporax mini** has almost as much biological breakdown power as 34 liters (9 US gal.) of ceramic filter material

Feed only sparingly during this start-up phase (see page 24 ff., please).



Introducing the animals

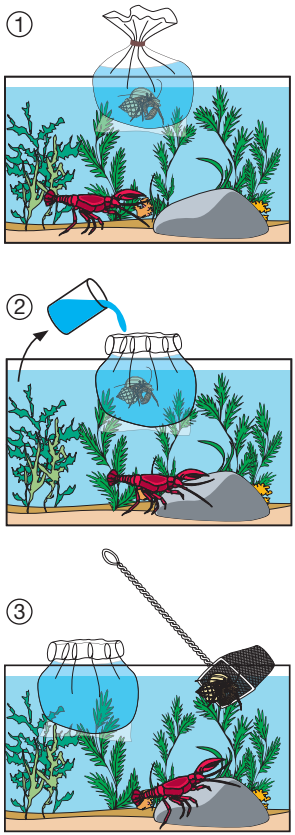
Introducing the shrimps and crayfish

Transfer into a new aquarium means a climate change for the animals. Switch off the aquarium light. Avoid bright light.

1. Put the fish bag into the aquarium (opening on top) and make sure the bag floats.

2. Open the bag and turn up the edges several times. The bag then floats open in the water. Fill aquarium water (approx. the two- or threefold original amount of the bag content) into the bag in portions within the course of half an hour.

3. After thirty minutes you can transfer the animals using the **sera fish net**. Be sure to dispose the transport water into the sink!



Water care

Aquariums set up correctly require only little care. Successful breeders recommend to change 30 – 50% of the aquarium water weekly. This simulates rainfalls common in nature, which then increase the readiness to reproduce. The changed water can be some degrees colder. However, you should always condition the added water with **sera aquatan** or **sera blackwater aquatan**. The low tolerance of shrimps and crayfish regarding nitrate is another important reason for regular partial water changes. Elevated nitrate levels cause problems during exuviation. You can check the nitrate level with the **sera NO_3-Test** kit.

It is advisable to siphon the forming sludge off with the **sera gravel washer** during the partial water change. However, a small amount of sludge should remain inside the aquarium, as shrimps – especially juveniles – like to use it as an additional food source. You should not remove the exuvia the animals discard during the exuviation. They contain valuable minerals and are usually completely eaten by the animals.

Feed according to nature

Both crayfish and shrimps are omnivorous animals, i.e. they eat herbal and animal food. Their natural habitats mostly provide rather few plants but an abundant variety of leaves and wood that have fallen into the water. This decomposing organic material (debris and sludge) along with the micro organisms growing on it (fungi, bacteria, protozoans) and algae serve as an important nutrient source. Anything the crustaceans can find and catch will add to the diet: small organisms such as snails, mussels, worms, sometimes even small fish, but often also carrion or ripe fruit. Some of the crustaceans do not even stop at cannibalism for meeting their protein requirements.

Most valuable ingredients

sera has developed the innovative crustacean foods **sera shrimps natural** and **sera crabs natural** for the various requirements of the crustaceans. The valuable ingredients and the careful processing make these foods an ideal staple diet for crustaceans. The unique nutrient composition results from the sole use of aquatic organisms such as marine fish, Gammarus, Spirulina and marine algae as protein and fat suppliers. The proteins they contain are therefore characterized by an amino acid composition that can ideally be utilized by the crustaceans.

Particularly easy to digest

The food becomes very easy to digest this way, which prevents water pollution by undigested breakdown products.

Optimal supply

Furthermore, this composition ensures an optimal supply with essential omega fatty acids. High percentages of spirulina, marine algae and numerous high quality herbs and vegetables provide the animals with important minerals, vitamins and trace elements such as the natural iodine of marine algae, which supports regular exuviation. Stinging nettle – confirmed by numerous observations – is effective against inflammations and increases the fertility of shrimps and crayfish. Willow bark and alder cones provide a natural ballast substance source, furthermore these ingredients have antibacterial and fungicidal effects. Gammarus and green-lipped mussels make the food very attractive. Therefore it was possible to go without added flavors – as is the case for all **sera** foods. Furthermore, **sera** wishes to be even closer to nature by not using any artificial dyes at all.

Natural dyes

Both foods contain exclusively the valuable natural dyes from their ingredients, e.g. the strongly color-enhancing and vitamin-like astaxanthin from Haematococcus algae. These components of the **V**ital **I**mmune **P**rotect Formula as well as the entire composition of **sera shrimps natural** and **sera crabs natural**, blended according to newest scientific findings, support healthy development (with regular, safe exuviation activity), brilliant colors, fertility and vitality for crayfish and shrimps.

Feed according to nature

Ideal shapes of food

Due to the shape of both foods – spherules in case of **sera shrimps natural** and the unique rings in case of **sera crabs natural** – the animals can carry the food to a shelter where they can eat without any stress.

Smaller shrimps like to pick up a spherule and bite off food particles with rotating movements. This is also how they graze off pebbles etc. in nature. In case of very small or juvenile shrimps a **sera shrimps natural** food spherule is sufficient even for several animals. When a shrimp ate its fill, it will drop the morsel so the next one can continue eating.

Crayfish prefer the loops of **sera crabs natural**. The crayfish actually carry out some kind of “tug-of-war” until they retreat to a calm corner with an entire ring or – in case of small species – a fragment. The ring shape is especially easy to grab for the claw-bearing crayfish.

Both foods sink down quickly and keep their shape for at least 24 hours in the water. Their taste and their ingredients are not lost during this time. Therefore, the food optimally meets the natural nutritional habits of these animals, and the water is not unnecessarily polluted. We recommend feeding these wholesome foods daily. They are, by the way, also excellently suited for marine crustaceans, and they are also readily accepted by catfish.

Provide some variety

You can occasionally feed scalded vegetable bits (e.g. peas, zucchini, carrots) and leaves (e.g. oak, beech, walnut, Indian almond) for adding some more variety to the diet. In case of vegetables you must by all means make sure that they originate from unpolluted cultivation, as shrimps and crayfish are extremely sensitive to pesticides. **sera marin gourmet nori** – natural, easily digestible Nori algae – also is an excellent additional food when attached to a food clamp that makes it sink.

Feeding in community tanks

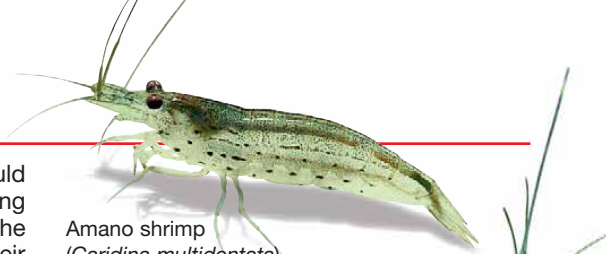
In community tanks where food of the **sera vipan** product family (**sera vipan**, **sera vipagran**, **sera vipachips**) is used, the crustaceans will happily share the food with the other inhabitants. **sera Spirulina Tabs** are also readily accepted. Therefore, no food remainders will be left over in the aquarium, and excess organic water pollution is avoided. However, you should feed **sera shrimps natural** or **sera crabs natural** at least once weekly also in a community tank as to fulfill the special requirements of the crustaceans.

Reproduction

If you wish to breed shrimps you should already take it into account when choosing the shrimps. Some shrimps, such as the Amano shrimp, require saltwater for their larvae (primitive type), and therefore are rather unsuitable for breeding. Shrimps that can easily be bred in an aquarium include, e.g., Crystal Red Bee shrimps (*Caridina cf. cantonensis*), Red Cherry shrimps (*Neocaridina heteropoda* var. "Red") and Tiger shrimps (*Caridina cf. cantonensis* var. "Tiger"). The particularly easy-to-breed crayfish species include Florida lobsters (*Procambarus alleni*), Mexican Orange dwarf crayfish (*Cambarellus patzcuarensis* var. "Orange") and Asian Tiger lobsters (*Cherax sp.* var. "Tiger").

Please consider the following advice for successfully breeding shrimps or crayfish: Do not keep too many animals in too small tanks. Always feed a high quality diet. Ensure proper water quality with a sufficiently high oxygen level, and carry out weekly water changes. Your animals will reward you with plenty of offspring.

Especially the juveniles require numerous suitable shelters as to prevent cannibalism. Please be aware that undesired cross-breeding among shrimp species may occur due to their sometimes close relationships. Bee, Tiger and Bumblebee shrimps should not be kept together as to prevent this from happening.



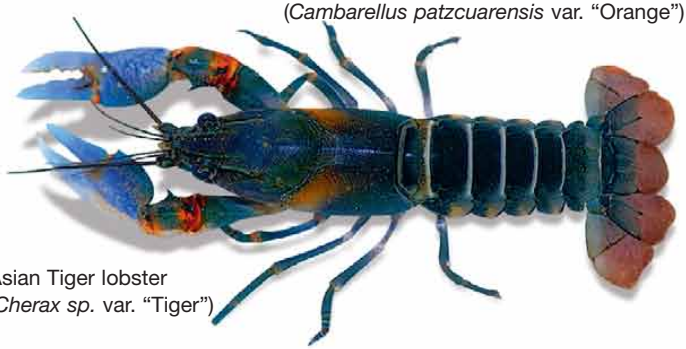
Amano shrimp
(*Caridina multidentata*)

Crystal Red Bee shrimp
(*Caridina cf. cantonensis*)

Red Cherry shrimp
(*Neocaridina heteropoda* var. "Red")

Tiger shrimp
(*Caridina cf. cantonensis* var. "Tiger")

Mexican Orange dwarf crayfish
(*Cambarellus patzcuarensis* var. "Orange")



Asian Tiger lobster
(*Cherax sp.* var. "Tiger")

Treatments or care products and crustaceans?

Shrimps and crayfish are not yet as well researched as fish. Therefore, only little is known about diseases and their treatment. Infections by viruses, fungi (e.g. fungal shell disease of crayfish) and microsporidia can currently usually not be treated effectively. Therefore you should always maintain best possible care conditions for the animals. Animals that are fed a wholesome diet and live as stress free as possible in an environment according to their requirements are considerably less sensitive to diseases. Furthermore, using **sera blackwater aquatan** helps preventing diseases or, in case of small injuries, accelerates wound healing. Always make sure the animals are healthy when purchasing new ones.

Not all care products and treatments suitable for the well-being of fish are tolerated by crayfish or shrimps. If a treatment in the community tank becomes necessary, you can safely use various products from the **sera** range. For example, the **sera med Professional** treatments **Protazol**, **Tremazol** and **Flagellol** have been extensively tested on and considered safe for crustaceans. Furthermore, using **sera ectopur** is possible without hesitation. The animals need **sera fishtamin** after a treatment. These vitamins strengthen the animals and ensure quick recovery.

Attention!

When crustaceans are present, you must unfortunately abstain from the well established reliability of **sera med Professional Nematol** und **sera mycopur**. If in doubt, the crustaceans should be removed from the community tank during the treatment and not treated along with the fish. As an alternative, you may treat the fish separately in a treatment tank.

Land hermit crabs

Land hermit crabs do not live in water. They are interesting and easy-to-keep terrarium inhabitants. The crustaceans originate from the tropics and are active during dusk and night. They can best be kept in a group of 3 – 5 animals, depending on the terrarium size. The terrarium should not be smaller than 50 x 30 x 30 cm (20 x 12 x 12 in.) at the minimum.

Common terrarium ground, such as pine bark blended with sand, is suitable as a bottom material. Land hermit crabs like to climb. Therefore be sure to attach coco mats to the terrarium walls. In nature, land hermit crabs mainly live in lagoons and frequently take up salt and fresh water. Therefore, the crabs should have access to both kinds of water. It is easy to prepare the saltwater with **sera marin basic salt** – rich in natural calcium and trace elements – in the required amounts.

Land hermit crabs are omnivores. The crab food **sera crabs natural** is of course also ideally suited for these terrestric animals. You can choose from different kinds of fruit and vegetable as well as salad or herbs (e.g. dandelion, dead-nettle or ribwort plantain) from unpolluted cultivation as an addition to the diet. **sera marin gourmet nori** as a treat provides the crabs with iodine that is important for exuviation. These easily digestible algae also contain plenty of vitamins, highly unsaturated fatty acids and other important trace elements.

The animals enjoy an occasional piece of fish or meat. However, be sure to remove uneaten food from the terrarium soon, as it would quickly start to rot. A bowl with **sera crabs natural** can remain in the terrarium for a longer time as a depot.

A specialty of land hermit crabs, to which their name refers, is that they use an empty snail shell to live in. As this shell cannot grow, the crab switches shells in regular intervals. Therefore, the crabs always should have a selection of snail shells to chose from. You can purchase them as decoration items, or you may find an empty shell of a Burgundy snail.

During exuviation, land hermit crabs leave their shell. During this time they urgently require shelters and a moist bottom ground into which they can dig. As the animals originate from the tropics they require a temperature of 25 – 30°C (77 – 86°F) and an atmospheric humidity of 60 – 80%. Depending on the terrarium size, a normal light bulb and daily spraying with water is sufficient.

This guide gives you a first view into the fascinating care for crayfish and shrimps. Among others, you can find further information about the exciting shrimps and crayfish topic in the book **"Garnelen & Krebse"**, issued by **Christian W. Hofstätter**. The author, a biologist, knows the natural environments of the crustaceans and runs a breeding station in Venezuela.

Kosmos Verlag
121 pages
ISBN 978-3-440-10471-2
(available only in German language)

You will find further advice on keeping shrimps and crayfish on the web sites of the author:
www.garnelenzucht.de and
www.shrimp-pictures.com

If you require special information, e.g. concerning keeping conditions of specific species, please contact your specialized retailer or breeder.

We will inform you in detail about aquarium setup and aquarium care in the **sera** guides "How to set up an aquarium" and "Aquarium care according to nature". The guides are available from the specialized trade or on the Internet on **www.sera.de**.

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