

Richard James



The Neocaridina Shrimp Handbook

A COMPREHENSIVE GUIDE



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Human Written
- No AI



**The Neocaridina Shrimp Handbook
A Comprehensive Guide**

1st Edition (revised)

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***Thank you to my beautiful wife,
who supports me in everything I do.***

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About the Author

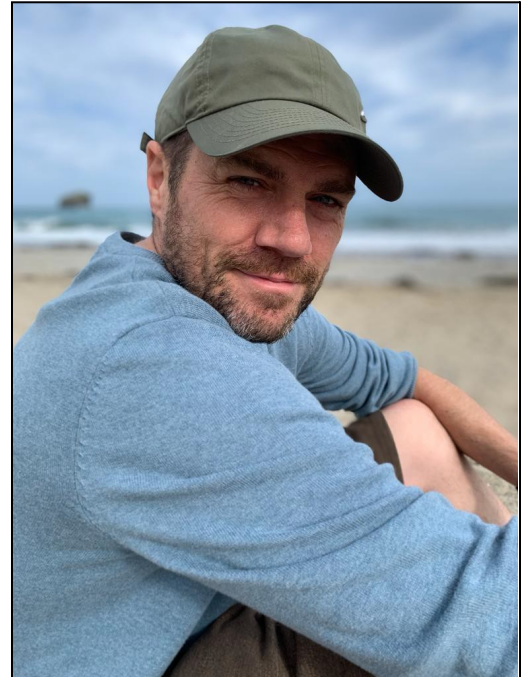
Hi, my name is Richard, and I have been keeping and breeding fish and shrimp since the early 1990s. Over the last 30+ years, I have pretty much done it all. From keeping the stereotypical 'community' aquarium, with its eclectic mix of fish, to working full time in my local fish store.

I have had great success, and made terrible mistakes, like the time I bought a *Clarias batrachus*, which it turns out has the common name The Asian Walking Catfish for a very good reason.

In recent years I have spent a lot of time keeping and breeding Neocaridina Shrimp. For a good many years, my wife and I bred and sold thousands of shrimp each year. Running a shrimp breeding business was extremely enjoyable, but also incredibly time-consuming.

In 2022 we made the switch from breeding and selling shrimp, to producing YouTube videos about keeping and breeding aquarium fish and shrimp. I can honestly say, starting a YouTube channel has proved to be a life-changing experience. Every day I get to chat with like-minded hobbyists, some of whom are just starting on their journey, and others who are many years ahead of me.

Helping others in their shrimp-keeping adventure has turned out to be incredibly fulfilling, and I am hoping this book will prove to be the single most helpful resource on the subject I have ever produced.



Richard James

Introduction to Neocaridina Shrimp



Over the last 15 to 20 years, the popularity of Neocaridina Shrimp in the aquarium hobby has rocketed. When I first started fish keeping in the 1990s, we rarely, if ever, came across shrimp. Occasionally we would see Ghost Shrimp for sale, but these were often sold as 'feeder shrimp'.

Unlike our friends in the marine fishkeeping hobby, which had a wide selection of invertebrates, we freshwater fish keepers had a poor selection of shrimp to choose from.

In the 1980s, the late, great, Japanese aquascaper, Takashi Amano introduced the world to the wonderful algae-eating shrimp from his homeland that would later become known as the Amano Shrimp.

It wasn't until around 2003 that the first red color variants of the wild *Neocaridina denticulata sinensis* (later to be reclassified as *Neocaridina davidi*) were introduced to the hobby.

In the early days, although certainly more colorful than Ghost Shrimp, these shrimp didn't have anywhere near the vibrant red colors we see today. It is only through many years of selective breeding that we have ended up with the kaleidoscope of colorful shrimp we now find in aquariums around the world.

I personally believe that the wide selection of colors available, matched with the shrimp's placid personality, and desire to eat algae and clean up uneaten food, is what has propelled the Neocaridina Shrimp's popularity to the point that many of us now keep dedicated shrimp only tanks.

At the time of writing, I have 12 aquariums that contain just water, live aquatic plants, and shrimp. This would have seemed bizarre 30 years ago.

When Neocaridina Shrimp first started to become a regular feature in local fish stores, they were primarily sold as 'clean-up crew', with their sole job being to eat the leftover fish food, decaying plant matter, and fish poop that can build up in an aquarium.

These days, they are sold to be as much of the main display tank as the fish themselves. It's incredible how far these tiny creatures have come in such a short space of time.

What are Neocaridina Shrimp?



So let's start by looking at what Neocaridina Shrimp are.

According to Wikipedia, "*Neocaridina is a genus of atyid shrimp, containing 26 species as of March 2023*".

When we in the shrimp-keeping hobby refer to Neocaridina Shrimp, we are almost always talking about *Neocaridina davidi*. *Neocaridina davidi* is certainly the most popular member of the Neocaridina Shrimp family.

Neocaridina davidi are often referred to as 'cherry shrimp'. Whether they be red, green, yellow, or blue, the name Cherry Shrimp is frequently used. Throughout the rest of this book, I use the names Neocaridina Shrimp and Cherry Shrimp interchangeably, and whenever I refer to Neocaridina Shrimp, you should assume I am talking about *Neocaridina davidi* unless otherwise stated.

Neocaridina davidi is a type of freshwater shrimp that was originally found throughout much of eastern China and northern Taiwan, but in recent years has been introduced to rivers and streams in the rest of Taiwan, Japan, and Hawaii.

The wild variety of *Neocaridina davidi* is a greenish-brown color. However, thanks to the dedicated efforts of breeders, these shrimp are available to hobbyists in red, green, blue, yellow, orange, brown, black, violet, white, and clear (often referred to as Snowballs).

To this day, the red form, commonly called Red Cherry Shrimp, is the most popular color variant, although many of the other colors are becoming more widely available leading to an increase in their popularity.

Anatomy of a Neocaridina Shrimp

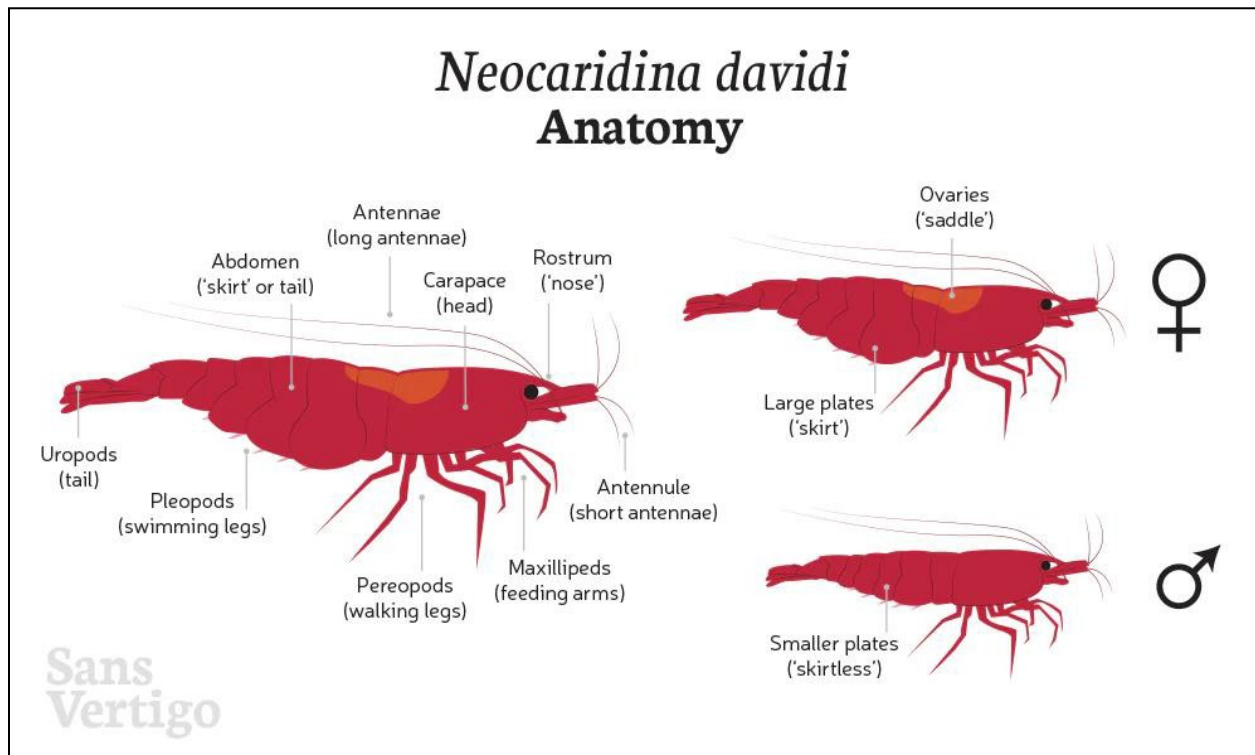


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Basically speaking, the external anatomy of a *Neocaridina* Shrimp comprises a carapace (head), abdomen (which is divided into 6 segments), rostrum (nose), pereopods (walking legs), pleopods (swimming legs), maxillipeds (feeding arms), and a tail.

Unlike mammals, or fish for that matter, *Neocaridina* Shrimp do not have a rigid internal skeleton, but rather an external skeleton, which is referred to as an exoskeleton. Their exoskeleton is essentially their shell.

Whilst an exoskeleton is a great line of defense, much like a suit of armor was for a knight, it has the disadvantage that it does not grow as the shrimp grows. Rather, as the shrimp get

bigger, the exoskeleton has to be shed (or molted) to allow the shrimp to grow. More on molting later in the book.

The abdomen of the Neocaridina Shrimp is divided into 6 segments. Being divided into sections makes the shrimp incredibly flexible despite the rigid nature of the exoskeleton. At the end of the abdomen is the shrimp's tail, which is itself divided into a number of different segments.

The shrimp uses its tail as its main form of propulsion to swim through the water. Shrimp can move surprisingly quickly over short distances. Swimming or darting away is a shrimp's main form of defense.

Directly beneath the abdomen are the shrimps pleopods, or swimming legs. Neocaridina Shrimp have 5 pairs of pleopods, one pair under each of the first five segments of the abdomen. There are no pleopods under the sixth segment which is directly adjacent to the shrimp's tail.

Neocaridina Shrimp use their pleopods to help them swim through the water, and female shrimp also use them to hold on to their eggs, suspending the developing young beneath their bodies.

The pleopods are frequently also referred to as the shrimp's swimmerets.

In front of the shrimp's pleopods are its pereopods. Neocaridina Shrimp have 5 pairs of pereopods, 3 of which they use for walking, and 2 pairs they use for feeding and fighting (although they are not very good at fighting). The front 2 pairs of pereopods have small claws to help the shrimp hold on to food.

Research has shown that the 3 pairs of walking legs are also used by the shrimp to sense the environment around it.

In front of the pereopods, the shrimp have maxilliped, which are essentially feeding arms that the shrimp use to bring food to their mouths.



At the very front of the Neocaridina Shrimp, we have the rostrum (from the Latin *rōstrum* meaning “Beak”). The shrimp’s rostrum is a hard extension that extends forward of the eyes. The rostrum’s primary job is to protect the eyes, however, it also helps keep the shrimp stable in the water when they shoot backward.

At the end of their rostrums, Neocaridina Shrimp have Antennae (two long antennae) and Antennule (two short antennae).

The long antennae are used by the shrimp to gather information about their immediate environment. They can sense vibrations in the water through these antennae. The short antennae are used to collect chemical information, kind of like smell and taste in humans.

Neocaridina shrimp have a pair of eyes, which sit on either side of their rostrum. They can move each of their eyes independently thanks to their short eyestalks. Shrimp eyes are very good at detecting movement. The shrimp benefit from having panoramic vision, meaning they can see in all directions, which is especially important when you are as close to the bottom of the food chain as dwarf shrimp are.

Internally, Neocaridina Shrimp are just as fascinating as they are externally. The vast majority of their internal organs are located in the head and chest area (known as the Cephalothorax). The intestine system is located in the abdomen.

Neocaridina Shrimp have what is often known as an open circulatory system, meaning the entire abdominal cavity is filled with blood.

The internal organs of the Neocaridina Shrimp are incredibly small, but they manage to pack everything they need into their tiny bodies. Just behind their eyes sits the shrimp's brain. The brain is connected to a nerve cord that runs the length of their body.

Directly behind the brain is the shrimp's stomach. One of the fascinating parts of shrimp keeping is the stomach often turns the color of whatever they have been eating. This is especially prevalent in the light or clear-colored shrimp, such as the Snowballs.

The shrimp's stomach is connected to their intestine, which also runs the length of their bodies, terminating at the anus, just beneath the tail.

Next, it's the heart, which lies just behind the stomach. The heart's job is to circulate blood around the body cavity, supplying the internal organs with oxygen and nutrients.

Interestingly, Neocaridina Shrimp blood is actually a light blue color rather than red like our own. Shrimp blood is blue because they do not have hemoglobin in it, but rather hemolymph. Hemolymph contains hemocyanin, which contains two copper ions. Therefore, shrimp need a certain level of copper in their diets for proper blood circulation.

Just below the heart, female Neocaridina Shrimp have their ovaries. This is where their eggs are produced. Lighter-colored shrimp are famed for their ability to show they are developing eggs inside their bodies. We hobbyists refer to female shrimp that have developing eggs inside their body cavities as being 'saddled'.

After mating with a male, the female starts moving the eggs (squeezing) from the 'saddle' to the brood pouch. At that moment the eggs go through the sperm and become fertilized. The brood pouch itself is formed by the females' pleopods. They hold the eggs until they are ready to hatch.

We often refer to females who are holding eggs as being 'berried'