

The Symbol of

The delicate structures rather remind of the complex sculpture of an artist than of the remains of a living creature. In fact, this object, which could also fit into an art exhibition, is the skeleton of a glass sponge of the species *Euplectella aspergillum*. Glass sponges or sponges in general have posed a mystery to mankind for a long time. Naturalists have long considered these organ-less, partly branched and, at first glance, motionless creatures to be plants. However, today we know that sponges are one of the oldest groups in the animal kingdom, that have inhabited our oceans even before the first dinosaurs or fishes.

Their bodies get their shape from an internal skeleton that is covered by living tissue. In the case of *E. aspergillum*, it is composed of silicate, forming a network of fine geometric shapes and chambers of different sizes. In the center of the sponge is one large chamber. Its surface is covered with needle-like structures called spicules. Glass sponges have many holes and pores through which they filter the water absorbing oxygen, silicate and food. The waste products are again excreted in a reverse process.

Adult glass sponges are sessile animals, attached to rocks or other surfaces on the seafloor by fiber bundles. Their offspring, on the other hand, are small mobile larvae that are dispersed by currents until they find a suitable substrate where they can settle. This can also be other glass sponges, which results in the formation of glass sponge reefs. These reefs sometimes reach a height of 8 stories. However, in most cases they are only preserved as fossils. It was not until 1987 that a living glass sponge reef was found, giving enthusiastic scientists a glimpse into the manifold activity of a long-forgotten glass kingdom.

Sponges with their beautiful and fascinating body structure are unique organisms in the world of animals. The delicate structures of glass sponges have already been appreciated in Victorian England. At that time, the skeletons had been regarded as desirable objects and could reach prices of 500 pounds.

Even today, the glass sponge *E. aspergillum* is still considered a popular gift in Japan, playing a symbolic role on the most important day of a couple's life. The sponge obtained this role, which has made it into the traditions of people, due to a symbiosis of a special kind:

E. aspergillum is often inhabited by pairs of deep-sea shrimps as it provides protection from predators. They clean the inside of their protector to feed. This in turn represents a benefit for the sponge. The pair moves into their new home when they are still small enough to pass through the net-like structure into the interior of the sponge. However, they continue to grow there until they are too large to swim through the fine mesh holes. They remain inside their glass cage for the rest of their lives, sending their offspring out into the world. For this reason, *E. aspergillum* is also called Venus' flower basket. "Till death do us part" thus also applies to the shrimp pair, making the glass sponge as vessel of this lifelong partnership the symbol of eternal love.

By Lea Leister

eternal Love

VENUS' FLOWER BASKET

This fascinating object is the skeleton of the glass sponge *Euplectella aspergillum* also known as Venus' flower basket. Its range extends over the Western Pacific Ocean near the Philippine Islands.



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