

# The Process of Drawing Marine Animals

by Michel Salaün, France

In June 2006, the European Marine Institute and the Regional Centre for Brittany and Celtic Culture in Brest (France) proposed that I drew marine invertebrates to illustrate a linguistic atlas of Brittany marine fauna. This joint work managed by Iwan Le Berre was published in 2009 as a CD-Rom entitled "Ichtyonymie bretonne". This CD contains the data collected by Alan-Gwennog Ber in 130 ports of lower Brittany in the 1960's and includes the vivid Brittany names which are always given to the local marine species. Three versions of the CD-Rom were published: in Brittany, French and English. In the beginning, I didn't imagine that it would take nearly two years of my free time to make all these drawings. Now, I still improve some of them and I complete the collection with other views of the animals, especially crab front views, which will be presented in the next article. Finally, I have done more than two hundred drawings. They represent an overview of the marvellous marine Brittany fauna, particularly the invertebrates that are sometimes also called "the small people of the sea" (le petit peuple de la mer): sponges, sea anemones, medusas, corals, molluscs, crustaceans, echinoderms, ascidians. In this article, I invite you to discover how I proceeded to realize these drawings.

## Animal sampling

First, I have to look for the animal in their natural habitat. Different ways are possible, but the best is to go to the sandy or rocky shore where a lot of species that I need live. Most of the animals on the shore live under the stones (see the article "Drawing life of the seashore" in Micscape). This step is a nice moment but it's always a bit hard to take an animal out from his habitat. In some cases, I can release the animal after observing an attitude or a detail of its anatomy. Then, I have to prepare the animal before drawing. For that, it's necessary to kill the moving species, especially crustaceans, by placing them in the freezer since it is generally the best way to avoid them suffering as much as possible. Then, I put them in 70% alcohol during one or two hours before presenting the animal in a position showing the characteristics of the species (Take care ! alcohol harden leg's articulations). The preparation becomes dry after a few days, so it is ready for drawing. For small animals like marine worms or sandy grasshoppers, I must use pins to keep them in a convenient position.

Another way for obtaining marine animals is to get dead ones from a collection. For the crustaceans, it is necessary to hydrate articulations of such dry specimens to present it conveniently.

Sometimes also, I observe and take pictures of animals, such as cephalopods, which live in Oceanopolis aquarium. In any case, it is very important for me to work in the most realistic conditions.

## Drawing achievement



Drawing of *Eriphia verrucosa* in progress

Under the light of my articulated desk lamp, a magnifying glass in one hand and going ceaselessly from the animal to the drawing and the Rotring pen in the other, I am working in the same way that the naturalists did in the 18th century.

The drawings have been realized by using the thinnest nibs of Rotring pens (0.1 to 0.2) and a normal black China ink, on polyester sheet. It is a synthetic material, opaque and smooth, without rough parts, which ages better than paper and allows corrections by eraser and scalpel. On the polyester film, ink stays on the surface. It is a bit like another stronger support that I use sometimes: the white scrape card. A scalpel can also be used to make thinner points and lines or to clear black areas, such improvements being impossible on paper. In black and white, animal morphology is shown to advantage, without artifice and with the only preoccupation being the detail and realism. The outline is made by line; the relief, the shadows are shown by points of variable density. The difficulty is to transcribe the colours into black and white, as the light falls on the animal body.

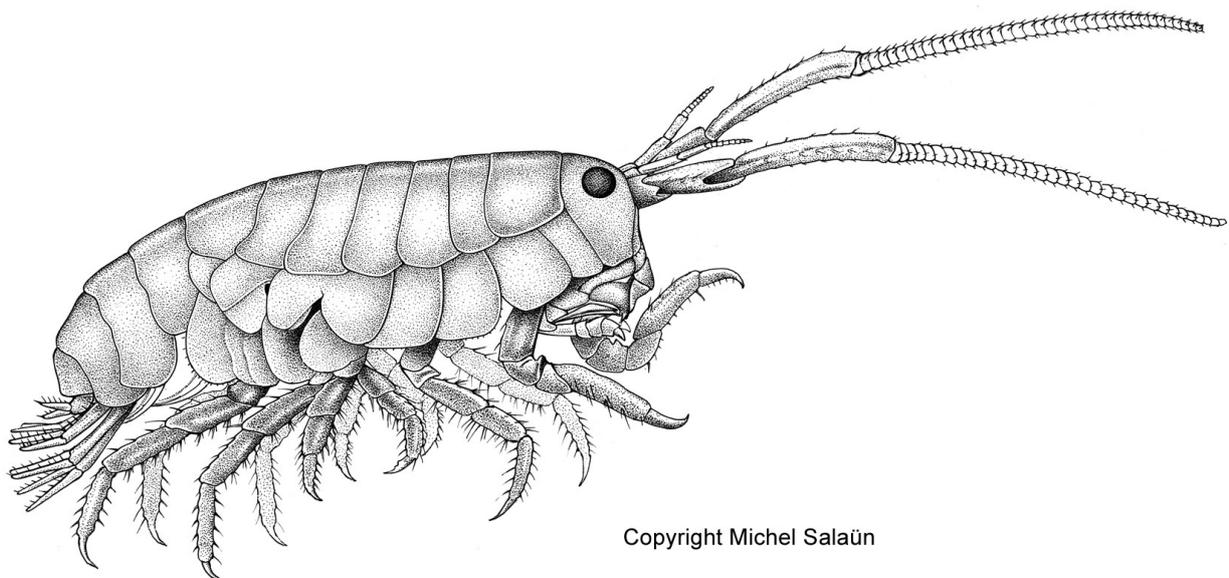
Nevertheless, when you digitally scan the drawing, the transparency of polyester appears to be a problem. Because of the thickness of the sheet, a slight blur is visible around lines and points. But it is possible to remove this artefact by increasing a bit the sharpness in Photoshop software. The scan generally does not appear totally immaculate, so dirty points have to be erased on the computer.

Before using Rotring pens and ink, I make some sketches on paper for parts of different worms or directly onto the polyester with pencil. After applying ink, I can erase graphite by a special smooth crumb eraser.

For the large specimens, photos can help me to get the different proportions of the animal. So I win time at the beginning, but a photo gives only gives an image in two dimensions viewed by one eye. On a drawing you can show all part of the animal in focus; on the front view of a crab, the claws and the eyes are sharp.

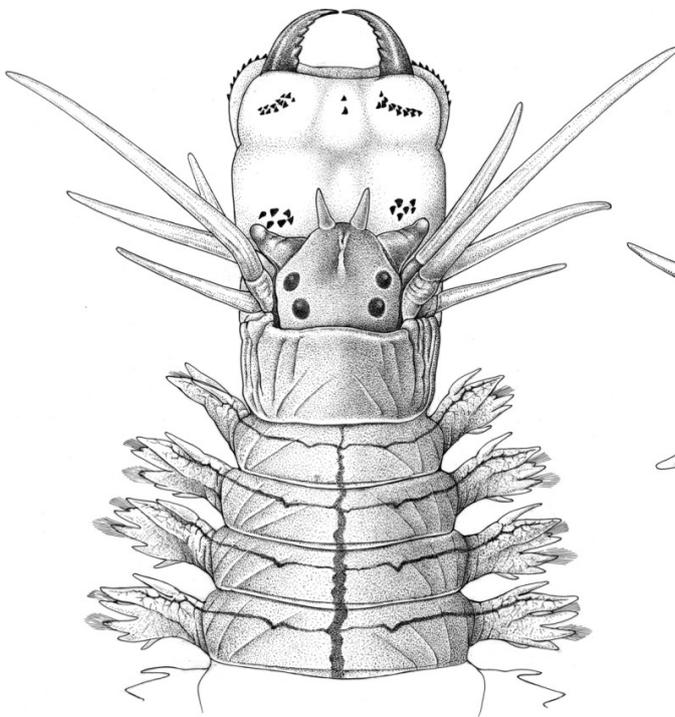
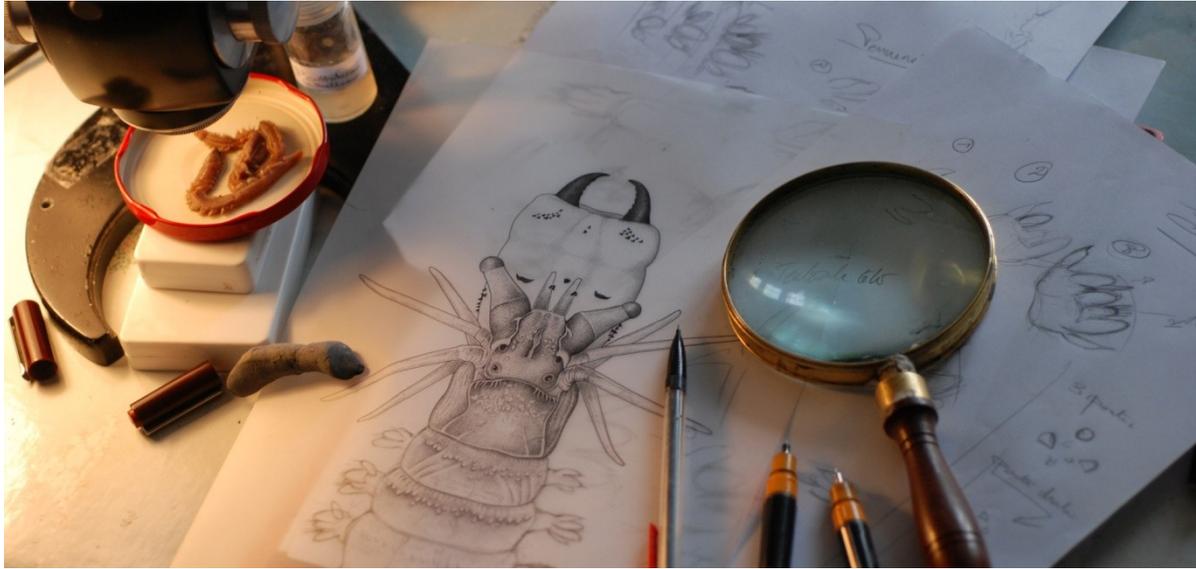
### **An obscure gallery: Sandy grasshopper and Nereis**

These strange animals, which look like micro monsters, seem to come from the fantastic universe of the "Avatar" film. For these animals, drawings are made from observation under a binocular magnifying glass. On the upper shore, in wet sand, I found the sandy fleas covered with a carapace. This small crustacean comes out of his gallery to eat dead seaweeds and detritus during the night or when the high tide arrives and may drown it.



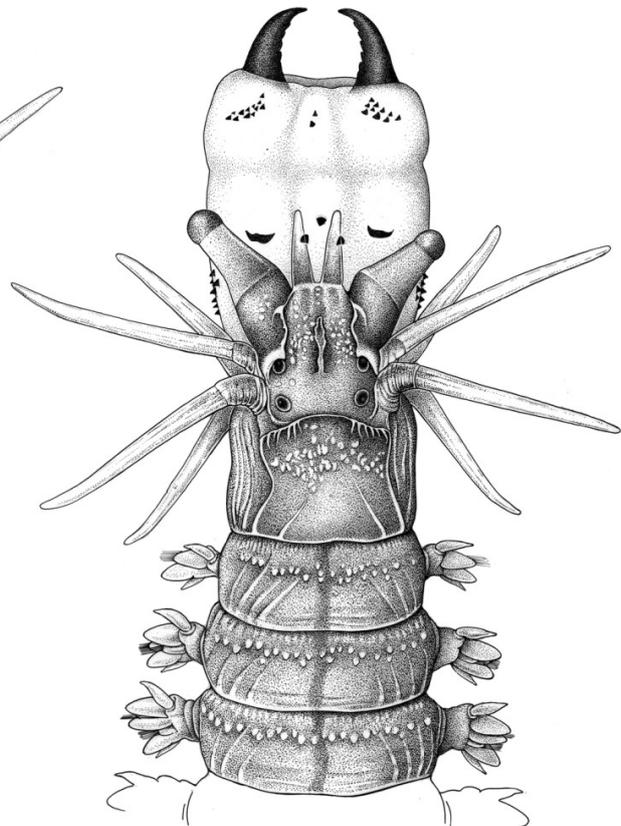
*Talitrus saltator* (Montagu, 1808), puce de mer

Nereides are annelid worms with sharp jaws. *Nereis diversicolor* have been found in the muddy banks of the Elorn estuary at Plougastel-Daoulas. Another species, *Perinereis cultrifera*, was sampled from gravel of Le Dellec, near Brest. When comparing the locomotive appendages of the two nereides, one sees that those of the mud living species are large and look like a flipper while those of species taken from gravel are thicker and look like short fingers to dig galleries through gravel. That is an example of the many functional adaptations in Annelids.



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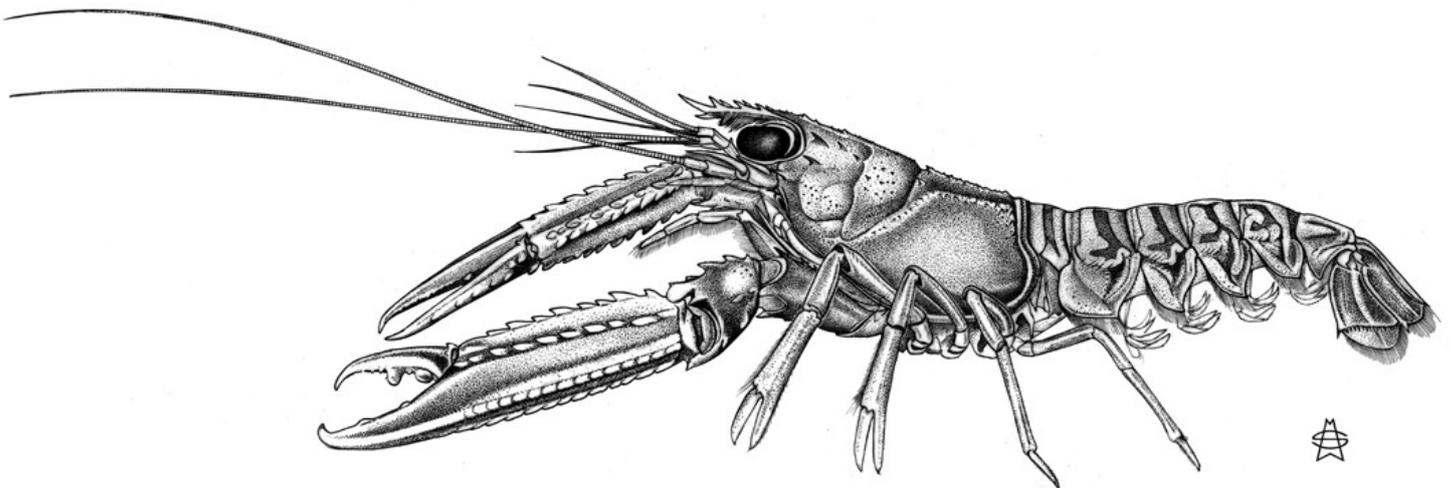
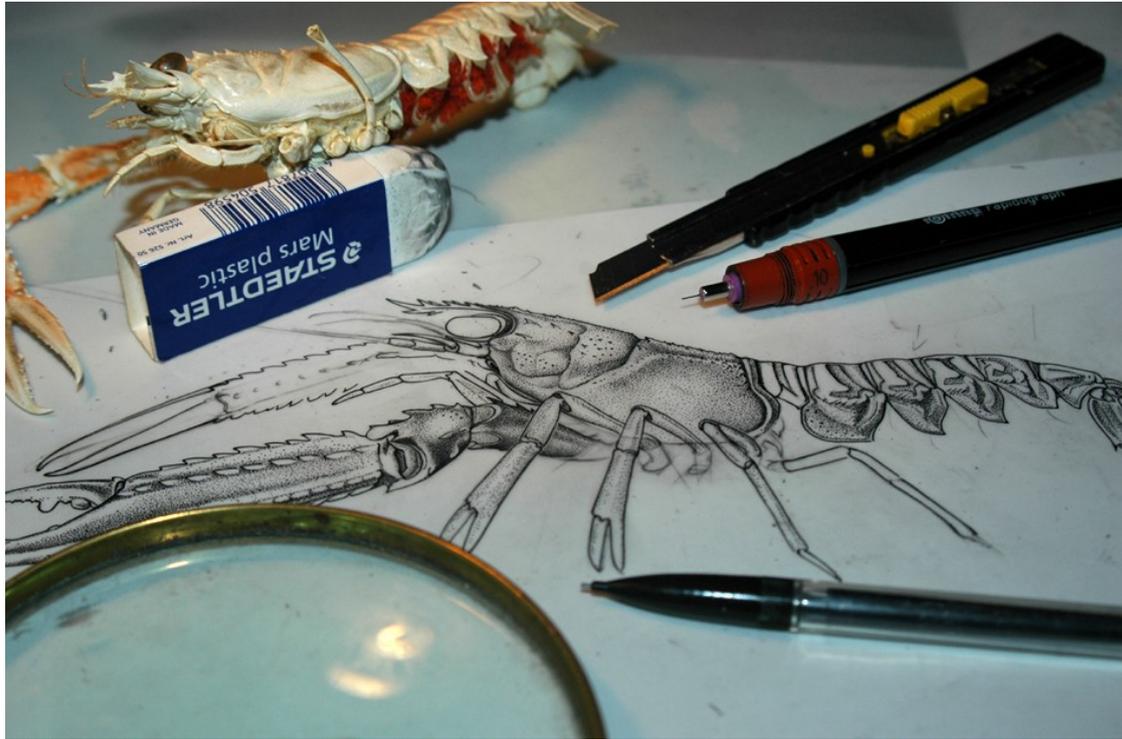
*Hediste diversicolor* (Grube, 1840),  
gravette rouge



*Perinereis cultrifera* (O.F. Müller, 1776),  
gravette de gravillon

## The lady of Loctudy: "la Langoustine"

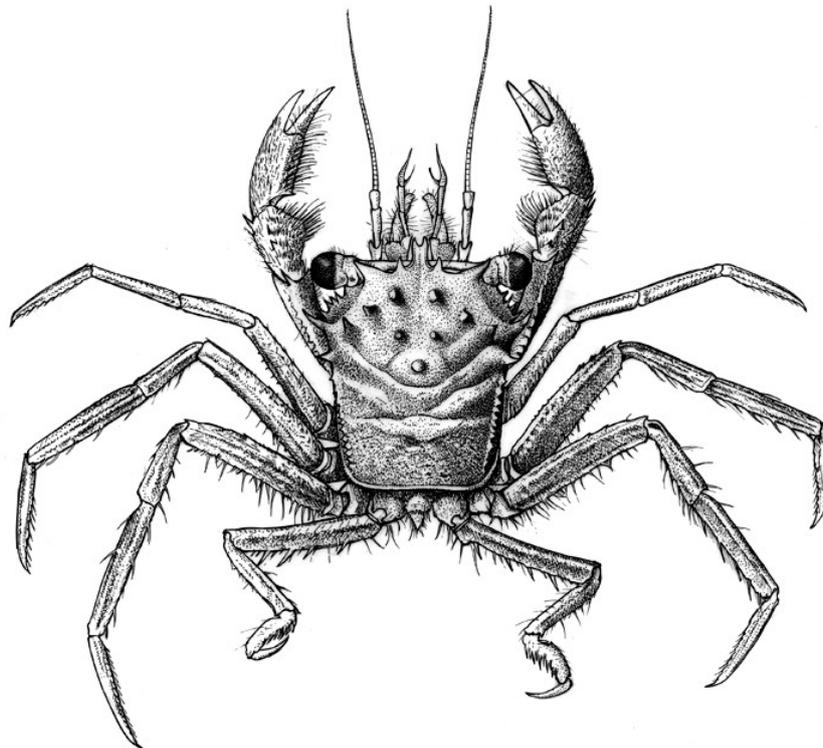
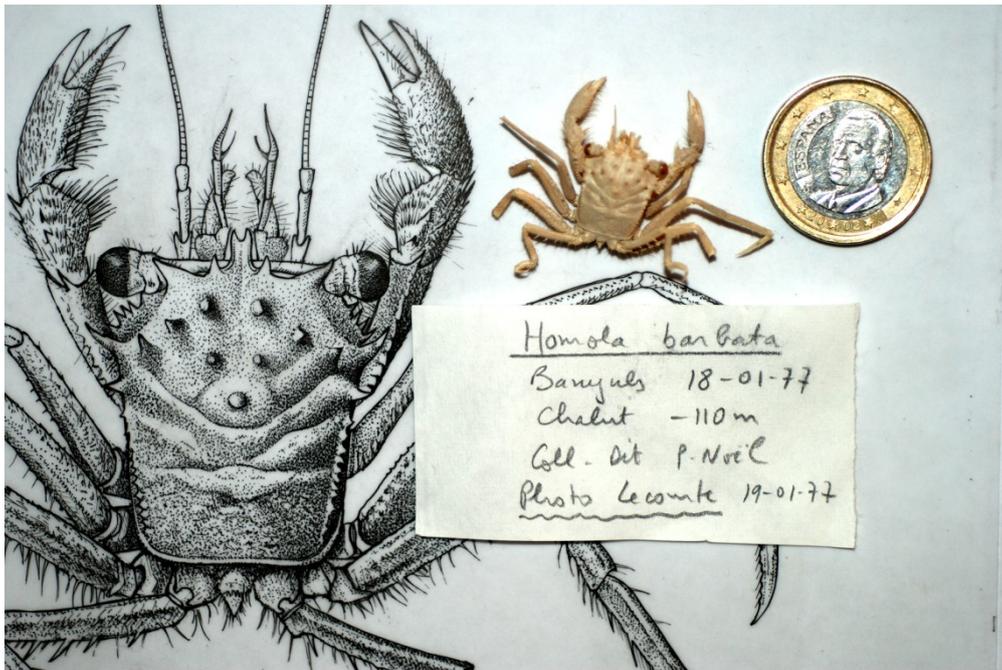
It required a long period of observation to see all the details of the anatomy of the famous « lady of Loctudy », who prefers dark galleries than the sunny beaches: the Dublin Bay prawn, dredged from mud bottoms at a 100m depth. I didn't find this nice lady in nature but on the stall of my favourite fishmonger. I have spent many long evenings with this pink articulated lady.



*Nephrops norvegicus* (Linnaeus, 1758), langoustine

## In the depth of Paris Natural History Museum: *Homola barbata*

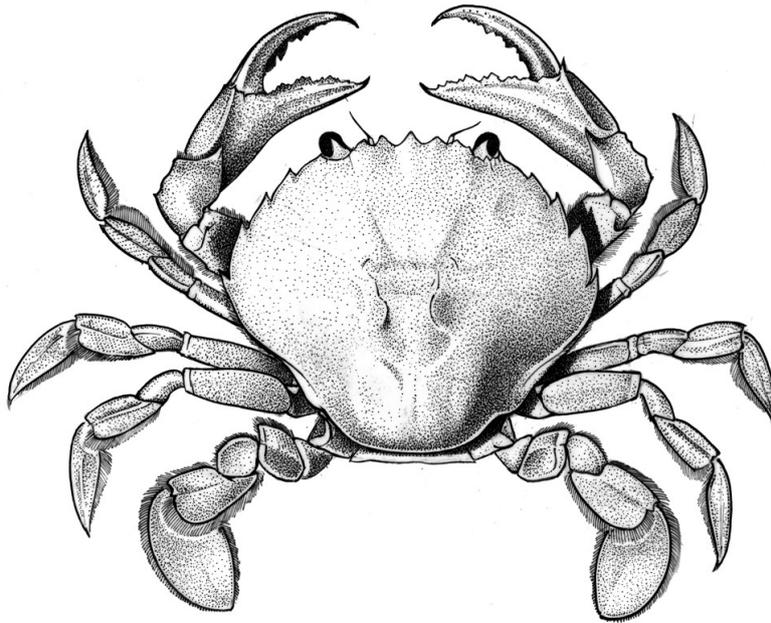
I had to go far from the sea to find this little crab. It was in Paris, on one of the numerous shelves of the basement in the Natural History Museum. There, sleeps a part of the Museum's collections. There was only one *Homola* specimen. He has a carapace less than 2 cm and was collected at 130 meters deep in the bay of Banyuls, in 1977! The small square crab returned to the capital after some weeks in Brest. It was a rebirth for this crab in detached pieces which has waited drawn in a small bottle of alcohol for 30 years!



*Homola barbata* (Fabricius, 1793), crabe-crapaud

### **A swimming crab, hanging in the water**

The swimming crab comes from collection boxes of a dried crustacean. I need two dry crabs to make one crab drawing. One marvels at the living genius by seeing this surprising crab with all his legs outstretched and using his circular and plate carapace to slow down his fall when he swims in the water at several meters above the bottom. This nocturnal predator, with big eyes and two claws armed with pointed teeth, catches sardines!

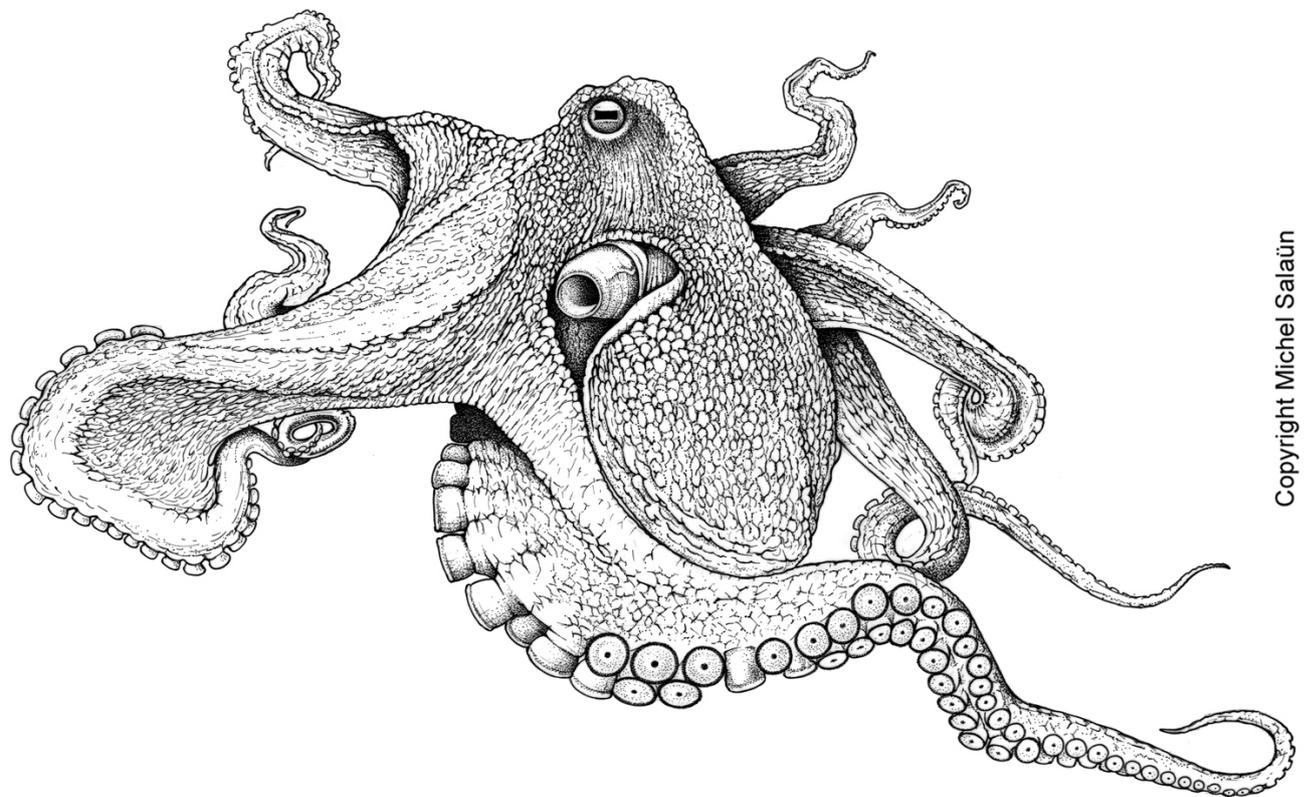
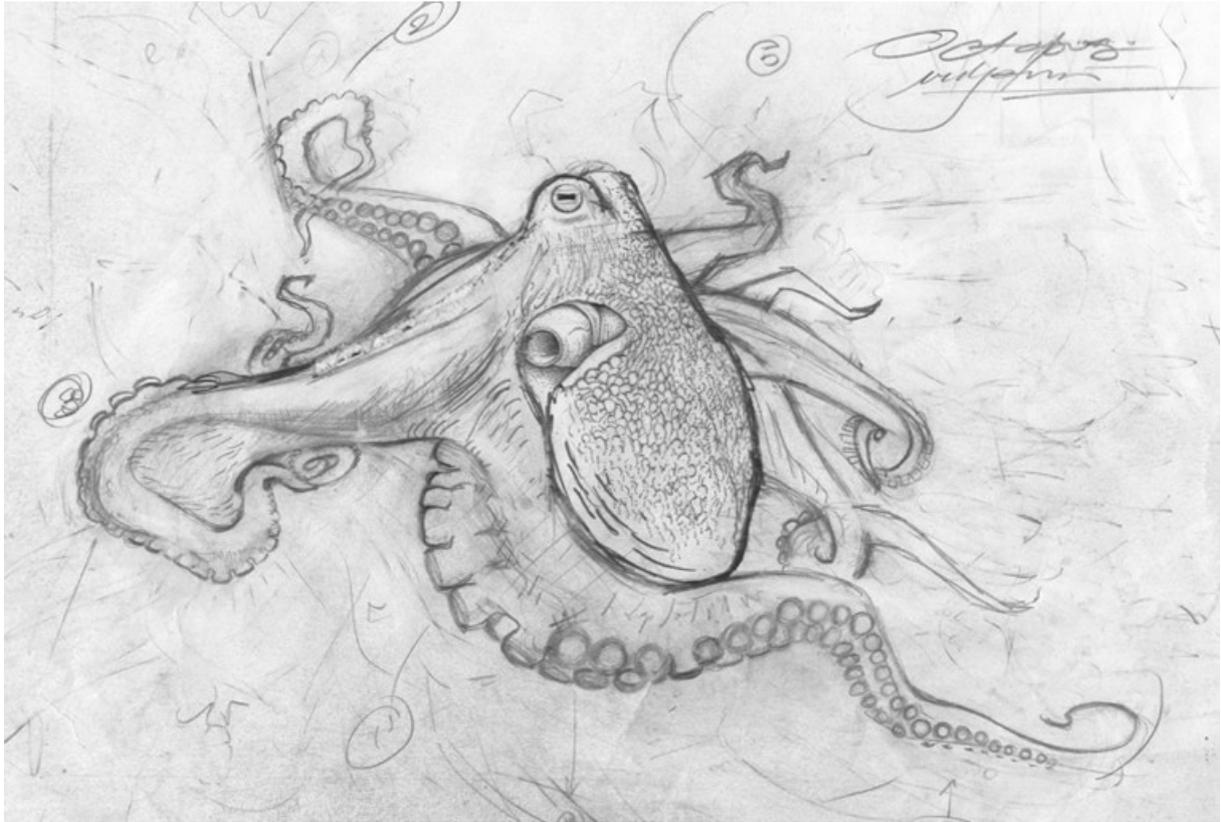


*Polybius henslowii* (Leach, 1820), crabe-sardine

### **An animal which became famous in summer 2010: "Paul le poulpe"**

The octopus is a mollusc, endowed with a developed nervous system and a keen vision. It was widely distributed along the Brittany shore several decades ago, before most of them disappeared because of a cold winter in the sixties (1962-1963). The inshore collect may be another reason of the depletion of the cephalopod. Accordingly, his hole can be identified easily by the fisher; near his hiding place, he leaves the remains of his meal: empty shells of crustaceans or molluscs.

Today, due to global warming, octopus populations seem to be increasing in Brittany. For this species, I have observed and photographed the animal in the aquarium of Oceanopolis. By using photos and observations, I have made an interpretation of an animal in motion.



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*Octopus vulgaris* (Linnaeus, 1756), poulpe

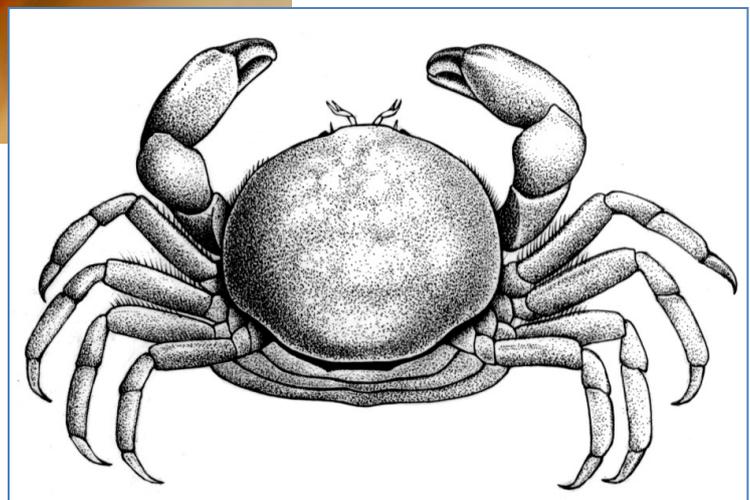
## The lobster and the pea crab.

To draw a lobster, I have used a moulting, i.e. an empty carapace. But I needed to go to the fishmonger to see the real position of the legs, mouth appendices and antennae. In many of the old drawings, the large antennae are represented curved while in fact, they are straight. In my crustacean collection, the king lobster cohabits with one less noble species: the pea crab, a tiny crab less than one centimeter in size. In this species, the female has a soft carapace and she lives inside the mussel protected behind the shell, in the gill cavity. The pea crab also benefits from the food collected by the mollusc with gills. As one says in French: « il a le gîte et le couvert ». In her comfortable hotel, the female crab waits for a male. This one enters in the mussel by the short siphons. And then the gill chamber becomes the nuptial chamber and soon a nursery which protects the larvae before they go outside. It is not so surprising that when you ask children: "what do mussels eat?" they answer "little crab"!

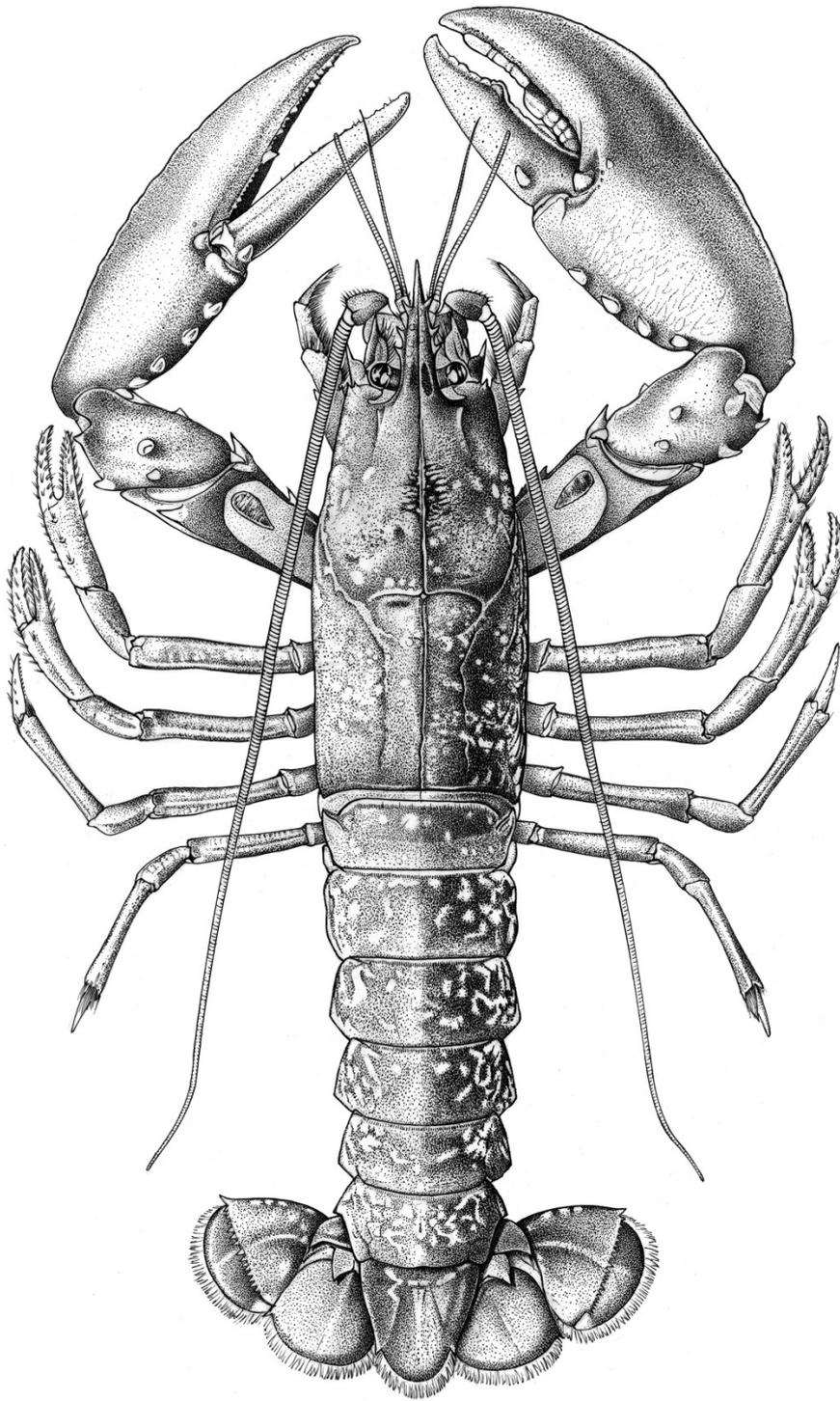
As for the lobster, he may share a hole with a long fish: the conger. But a problem then arises: the crustacean moult. It leaves his shell, and stays smooth for a few days when his new shell becomes hard like a cuirass. That's enough to give the conger appetite. And most of the time, the co-tenant devours the defenceless crustacean.

At least, if the lobster or the mussel is not eaten before, they both end in the pot: the lobster in the gourmet stomach and the pea crab in the dustbin with mussel shells!

If Jean de la Fontaine had been interested in the marine biology, he would probably have imagined a fable about the peculiar life of these two crustaceans.



*Pinnotheres pisum* (Linnaeus, 1767), crabe des moules



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*Homarus gammarus* (Linnaeus, 1758), homard

See also in Micscape, 2004

<http://www.microscopy-uk.org.uk/mag/indexmag.html?http://www.microscopy-uk.org.uk/mag/artdec04/michel.html>

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