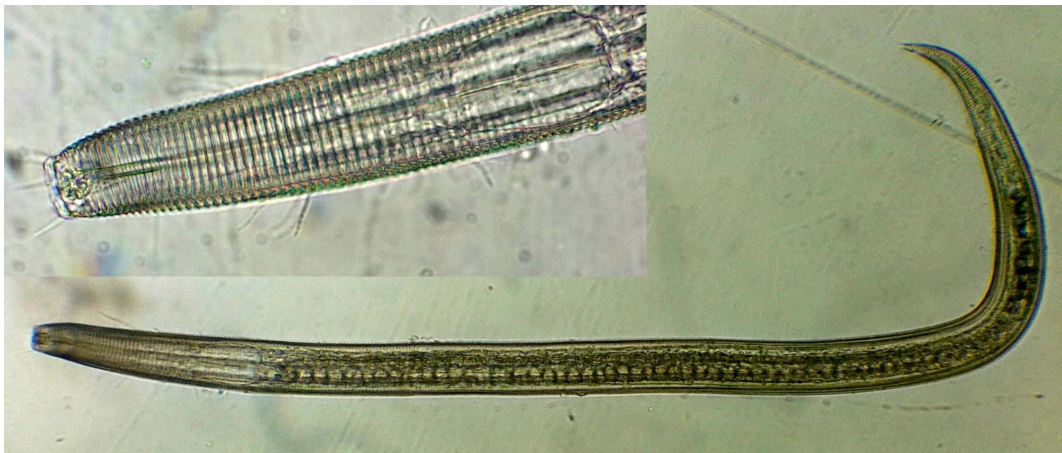


SOME MARINE WORMS JM Cavanilhac - France

Among the various species that make up marine plankton, worms are not often described. They are not the most aesthetic subjects (who likes worms?) but in the state of larvae or very young adults they can be observed under a microscope. Moreover, worms are not really planktonic species! (See on the Web if necessary for macroscopic pictures of adults)

The most frequently found are nematodes of which there are numerous marine or freshwater species: here is an example: the part constituting the head and especially the oral apparatus allows a more precise identification (May be here: *Prochromadorella*) - see this site: <https://nematode.unl.edu/key/nemakey.htm>

The only difficulty for the photo: they move a lot!



Other species often encountered in the larval stage are polychaetes worms so here are two examples of a larvae: At this stage it is difficult to identify the species of the adult; we notice the eye spots and setae :



The setae, often very developed at this stage, are perhaps a way of avoiding predation: how can a fish swallow something so indigestible! (Defensive position in the image on the right):



A little later the adult becomes an annelid which can reach several centimeters in length but we find in the plankton samples of young adults that it is easy to observe, for example this nereid worm; we see the detail of the formidable proboscis that the worm projects outward to capture its prey (Image objective 2.5 X Rheinberg lighting)



Classification : Kingdom: *Animalia* → *Annelida*(Phylum)→*Polychaeta* (class)→*Errantia* (Subclass)→ *Phyllodocida*(order) → *Nereidiformia* (sub order)

Another less common species of annelid: *Syllis Amica* (same observation condition as in the image above).



We can clearly see the cylindrical pharynx followed by the proventricle and its muscular bands. A little anecdote: This image is part of a fairly old series and while doing research on this species I learned that the pharynx contained a tooth, which is difficult to see in this image. So I went back to the stock of photos to find this detail (taken with the 6.3x objective) where we see this tooth and we also see the 4 eye spots better:



We also come across amusing specimens like this “trumpet worm”, which builds a tube on which it sticks grains of sand. Its head has claws which it uses to dig the sand to bury itself there (*Lagis koreni* for its scientific name).



Another worm that builds a tube (but here it is absent) *Lanice conchilega*: two different specimens (image taken with a 2.5 x objective):

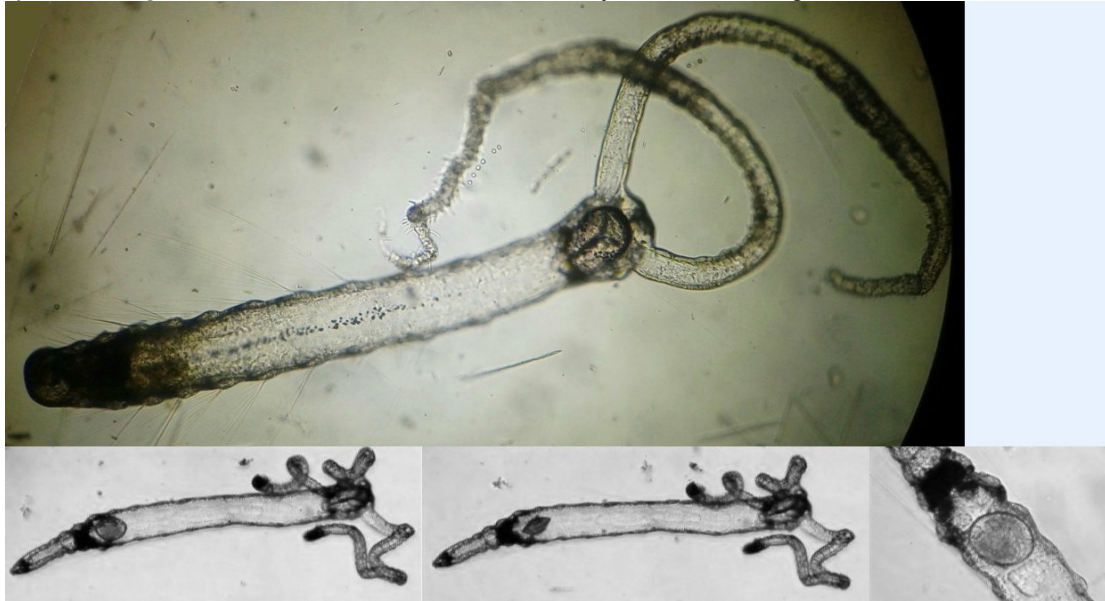


Still with tube worms: *Serpulida*: the tube is calcareous and is often found on mollusc shells (on a mussel at bottom left). Note the conical-shaped cap which closes the tube (right) and the tentacles bearing cilia which also serve as gills

Classification: *Annelida* (Phylum) → *Polychaeta* (Class) → *Sedentaria* (Subclass) → *Canalipalpata* (Infraclass) → *Sabellida* (Order) → *Serpulidae* (Family)

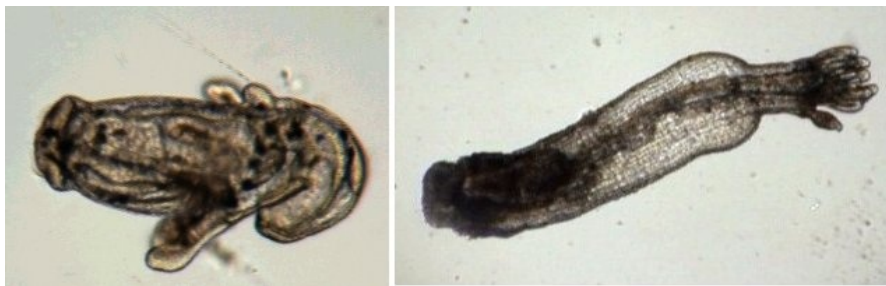


Another worm with very long tentacles: *Magelona* – On the 3 images below it is probably the species: *Magelona mirabilis* which feeds exclusively on mussel veligers: see a shell inside

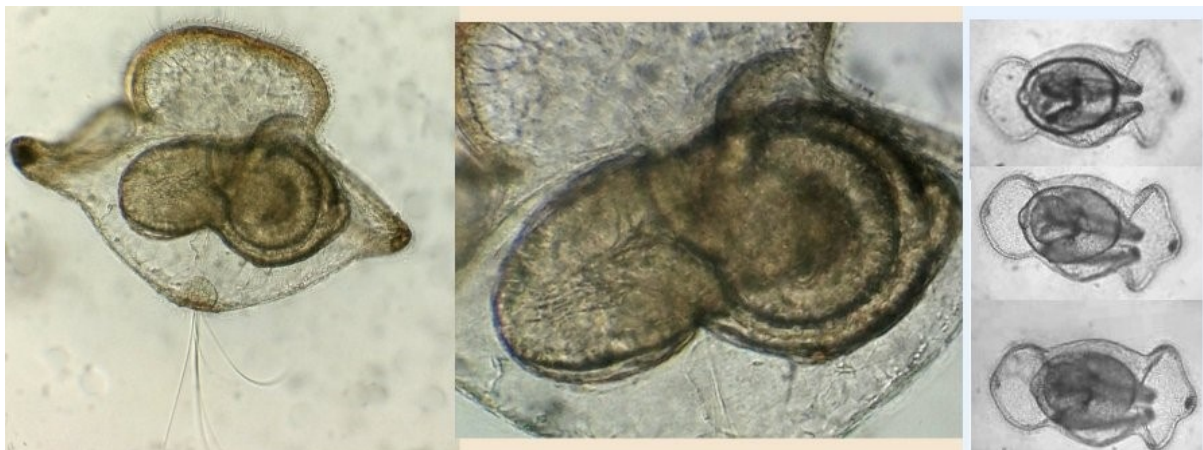


Beautiful pictures of polychaetes worms here: <https://plankton.photography/polychaetes/>
Look also on the page « home » for other planktonic specimens in dark field lighting !

Sometimes the sampling of a larva allows us to see the transformation into a young adult as with this phoronid worm: the transformation takes place quickly in half an hour:



A very pretty larva is the pillidium form of the nemerta worm which looks like a Greek warrior's helmet: we see the worm developing inside (central photo): on the right three unusual views taken from a video (bottom view)



<https://upload.wikim...94-10-47-S4.ogv>

Nice video taken from this link showing its way of feeding; the pillidium is held by a micropipette:

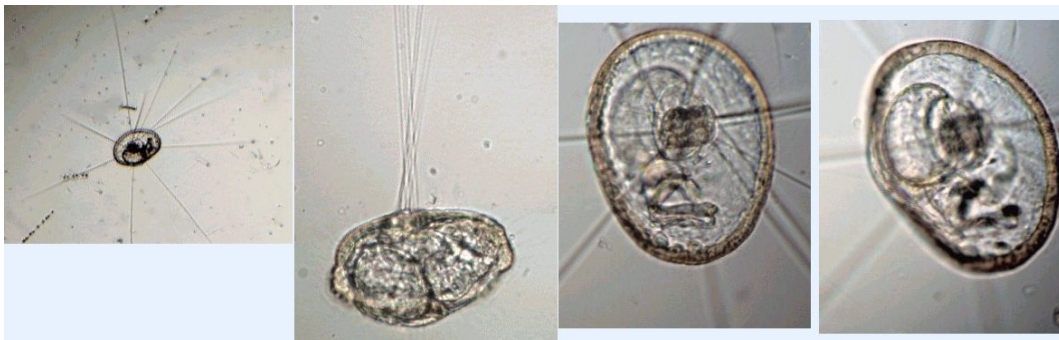
https://www.researchgate.net/publication/255713946_How_the_pilidium_larva_feeds

A recently found larva that was difficult to identify; pelagosphaera stage of a sipuncula worm (Peanut worm)



to learn more : <https://www.mdpi.com/1424-2818/13/2/43>

A larval form (mitraria larva) of the Owenia worm may be *Owenia fusiformis*?



So these were some of the best-known specimens of marine worms. But there are other species in the Platyhelminth phylum, that are less harmless.

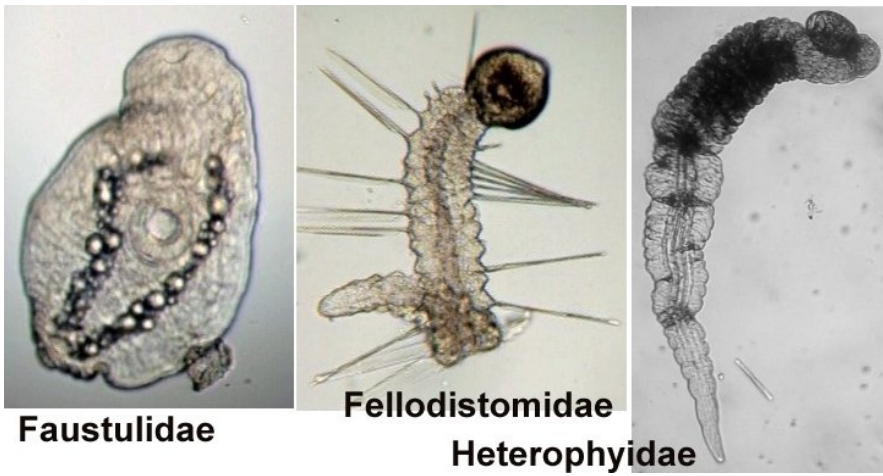
Trematode worms for example: All species have a complex reproduction cycle which uses a vector before infecting the definitive host; for example cercaria form of trematode is swallowed by a bird (Gull, flamingo...) thrown into the feces of the bird then swallowed by a snail or a fish which is the definitive host. The vector is not affected by the worm.

It is rare to find these isolated forms because they are most often fixed on the host

Below is parasite of fish in the cercariae form of trematode worm: its the same specimen into the two pictures. we can see the central suction cup which allows attachment to the host, mouth at the bottom in the left image



Other forms of cercaria of trematode worms:



Comments to the author J.M. Cavanihac are welcomed, email:
micromars1 AT orange DOT fr
Published in the December 2023 issue of Micscape magazine.
www.micscape.org