

DIET TYPES OF ORGANISMS OF THE PHYLUM TARDIGRADA

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The phylum Tardigrada is of high interest to Astrobiology due to its poliextremophilia. It comprises about 1300 known species, which have different preferences in their food. They are mainly classified into carnivores, herbivores, and omnivores. The great variability in their feeding habits enables this group of animals to colonize many possible diverse habitats around the planet Earth. In this work, we have made a revision of the main food habits of tardigrades and their relationship with the buccofringial type.

Among the carnivorous tardigrades, we have the genus *Milnesium* sp., which feeds mainly on rotifers and nematodes. In the group of herbivores, we find those belonging to the genus *Hypsibius*, which feed mostly on algae and cyanobacteria; some of them ingest whole cells, others absorb their contents with their stylet. Finally, included in the omnivorous tardigrades are those of the genus *Paramacrobiotus*, which feed on detritus, algae, fungi, bacteria, and cyanobacteria, as well as nematodes, rotifers, and sometimes protozoa.

To know the type of diet they present, it is possible to study the content of their digestive system (Bryondová et al. 1998), sequencing the contents of their digestive system, and comparing the anatomy and morphology of their buccopharyngeal apparatus (Schill et al. 2011). This type of analysis allows us to know a little more about how their diet affects their reproduction, fertility, and survival; it also helps us understand their ecological functions in the trophic networks of the various environments they inhabit, and also facilitates the identification of methodologies for their cultivation in the laboratory.

In addition to their diet, it is necessary to know what chemical elements are necessary to achieve their survival, such as those present in the salts, CaCl₂, NaCl, and KCl. This data set gives us an idea of the types of extraterrestrial environments that tardigrades could colonize, considering the type

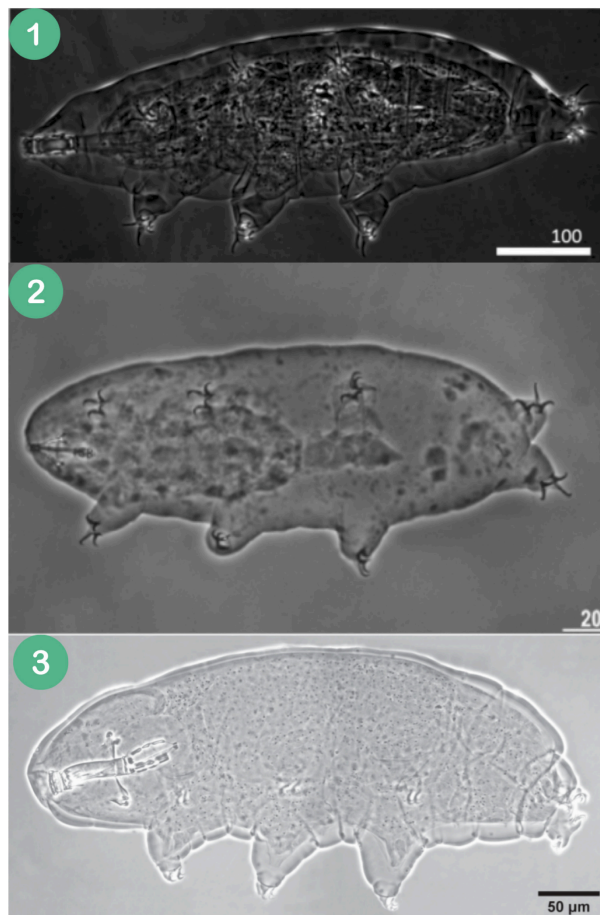


Fig. 1. Different species of tardigrades. 1. *Milnesium pacificum*, carnivore. 2. *Hypsibius dujardini*, herbivore. 3. *Paramacrobiotus saganii*, omnivore.

of food they need and the chemical compounds they require to live.

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