

Institute of Earth Sciences



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# ORIBATID MITES

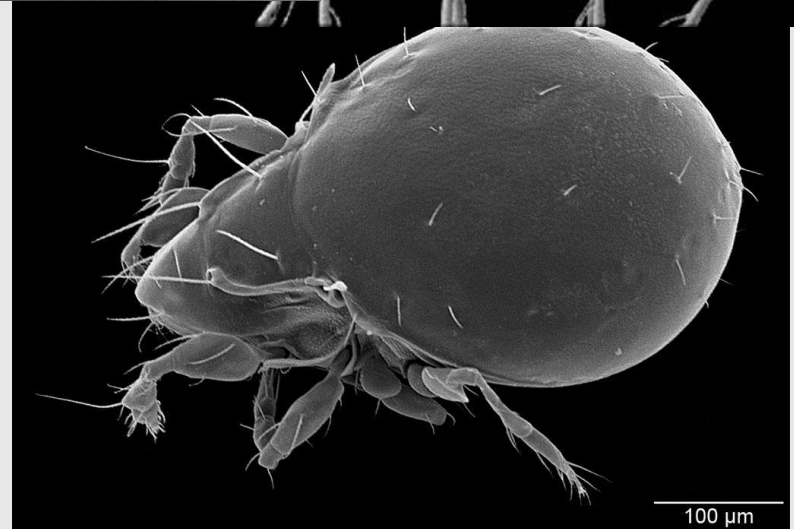
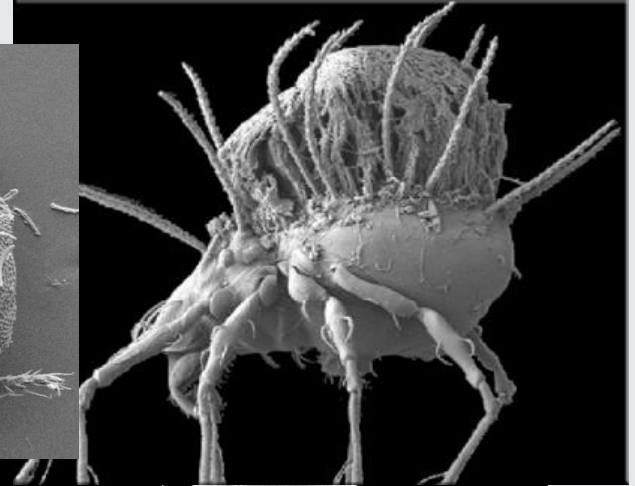
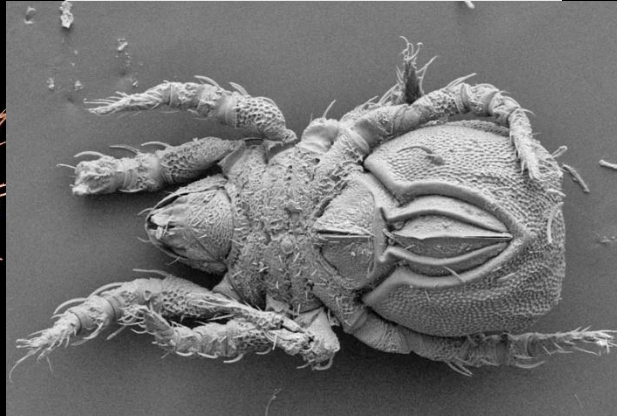
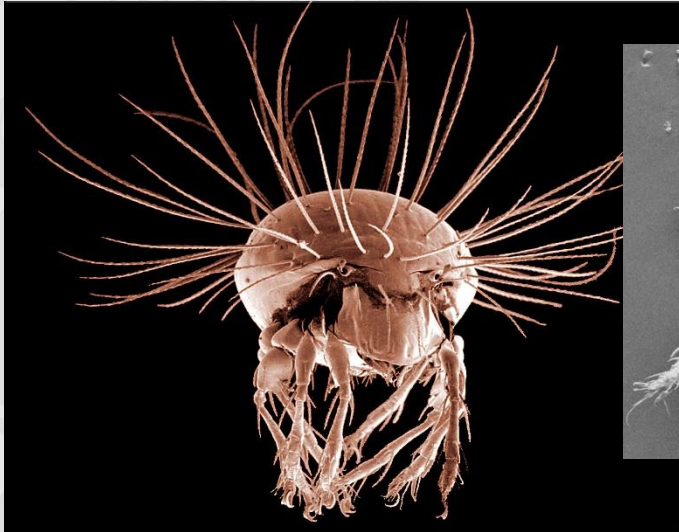
prepared by Anastasia Baranova

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# ORIBATID MITES

Oribatid mites are one of the numerically dominant arthropod groups in soils.





Oribatid mites are known as fossils back to the Middle Devonian period and Early Ordovician.

Oribatid can also be found, like beetle fragments, in interglacial and pre-Quaternary sediments and in different types of buried soils.

Eon	Era	Period	Epoch		
Phanerozoic	Cenozoic	Quaternary	Holocene	← Today	
			Pleistocene	← 11.8 Ka	
		Neogene	Pliocene		
			Miocene		
		Paleogene	Oligocene		
			Eocene		
	Mesozoic	Cretaceous	~	← 66 Ma	
			~		
			~		
		Jurassic	~		
			~		
		Triassic	~		
			~	← 252 Ma	
		Paleozoic	Permian	~	
				~	
Carboniferous	Pennsylvanian		~		
	Mississippian		~		
Devonian	~				
Silurian	~				
Ordovician	~				
Cambrian	~	← 541 Ma			
Proterozoic	~	~	~	← 2.5 Ga	
Archean	~	~	~	← 4.0 Ga	
Hadean	~	~	~	← 4.54 Ga	



Their abundant occurrence in most bog sediments was first recorded by Baron Nordenskiöld (1901), but only in recent decades has their potential as indicators of paleoclimate and paleoenvironments been fully recognised.



Baron Nils Adolf Erik Nordenskiöld



## Oribatid mites occur in:

- marine and brackish water littoral sediments,
- saltmarshes, as part of lake ecosystems,
- bogs and fens,
- all types of soils,
- arboreal habitats.

Past shifts in oribatid assemblages can hopefully be used to reconstruct environmental variables such as temperature, lake chemistry, ice cover, succession of trees and lake-level fluctuations.

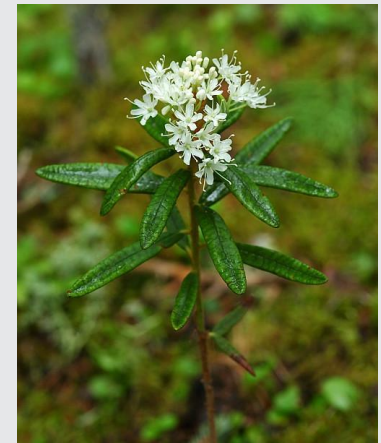


The genus *Hydrozetes* occurs in most lakes, tarns, bog pools and even in very wet fens where they often are found in great densities. They may be more abundant in eutrophic than in oligotrophic waterbodies (Bennike, 2000).



*Hydrozetes*

Oribatid mites could help reconstruct the arrival and possible succession of trees, some may even be associated with only a single tree/shrub genus or even a single or a few species. For instance, *Dentizetes ledensis* is so far known only from leaves of *Ledum groenlandicum* (Behan-Pelletier, 2000).



*Ledum groenlandicum*

In tree ecosystems, oribatids are often associated with bark, epiphytic lichens and mosses.



Thank you for attention!

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