Institute of Earth Sciences

ORIBATID MITES

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

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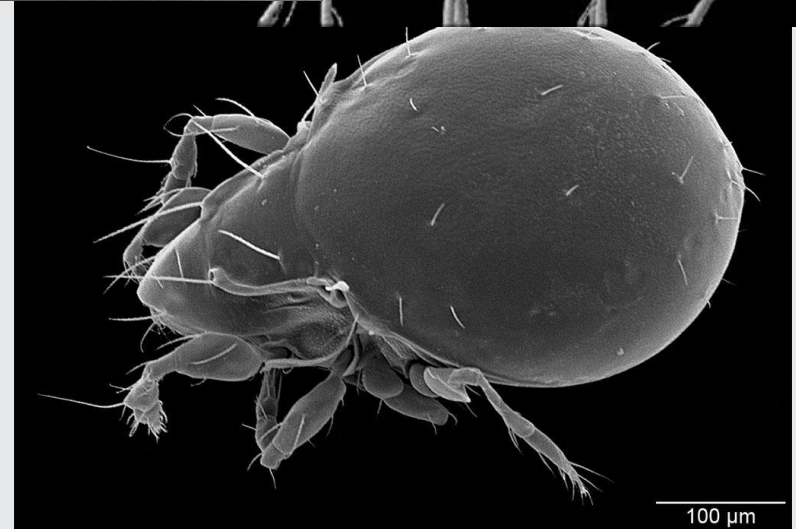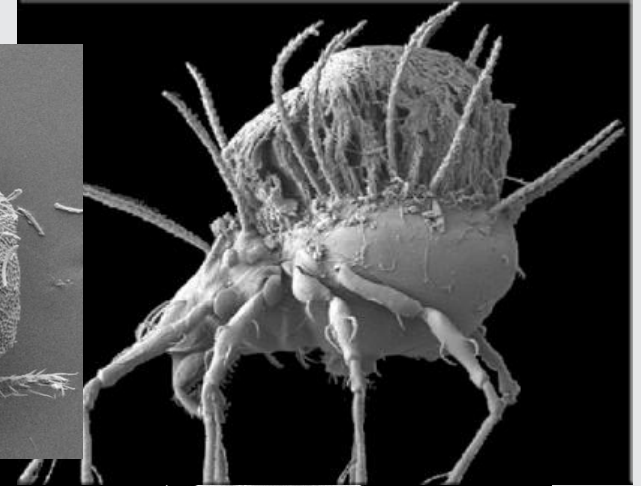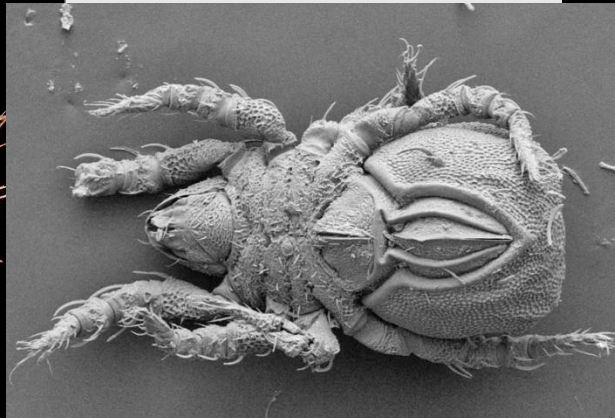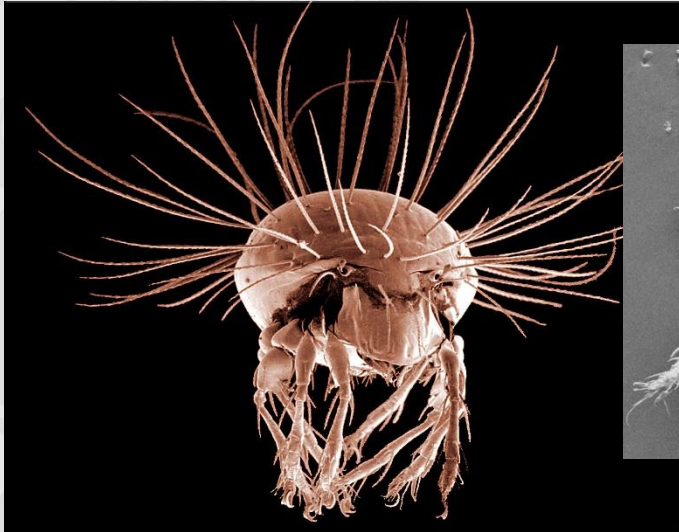
Oribatid mites are known as fossils back to the Middle Devonian period and Early Ordovician.

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

Eon	Era	Period		Epoch
Phanerozoic	Cenozoic	Quaternary		Holocene
				Pleistocene
		Neogene		Pliocene
				Miocene
		Paleogene		Oligocene
				Eocene
				Paleocene
	Mesozoic	Cretaceous		~
		Jurassic		~
		Triassic		~
	Paleozoic	Permian		~
		Carboni-ferous	Pennsylvanian	~
			Mississippian	~
		Devonian		~
		Silurian		~
		Ordovician		~
		Cambrian		~
Proterozoic	~	~		~
Archean	~	~		~
Hadean	~	~		~

Younger — Older

Today
11.8 Ka
66 Ma
252 Ma
541 Ma
2.5 Ga
4.0 Ga
4.54 Ga

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

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 <u>lakes, tarns, bog pools</u> and even in very <u>wet fens</u> where they often are found in great densities. They may be more abundant in <u>eutrophic</u> than in <u>oligotrophic</u> waterbodies (Bennike, 2000).

Hydrozetes

Oribatid mites could help reconstruct the arrival and possible <u>succession of trees</u>, some may even be associated with only a <u>single tree/shrub</u> 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).
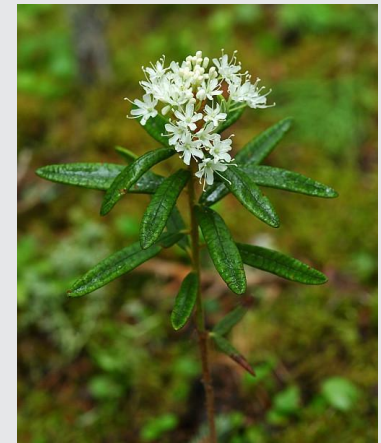
In tree ecosystems, oribatids are often associated with <u>bark, epiphytic lichens and mosses</u>.

Ledum groenlandicum

Thank you for attention!

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