

ANIMAL DISTRIBUTION

Lecture 5

PROF. DR. SABIHA FAZAL

Subject: Zoology

Course Title: Zoogeography

&

Paleontology

M.Sc. II (Evening) Semester III



FACTORS INDUCING DISPERSAL

- The basic principle of evolution and biogeography is that each species of an organism originated only once.
- The particular place where it occurred is known as its **“Centre of Origin”**.
- The animals migrate to other locations in search of food, shelter, space, etc., as their number increase.

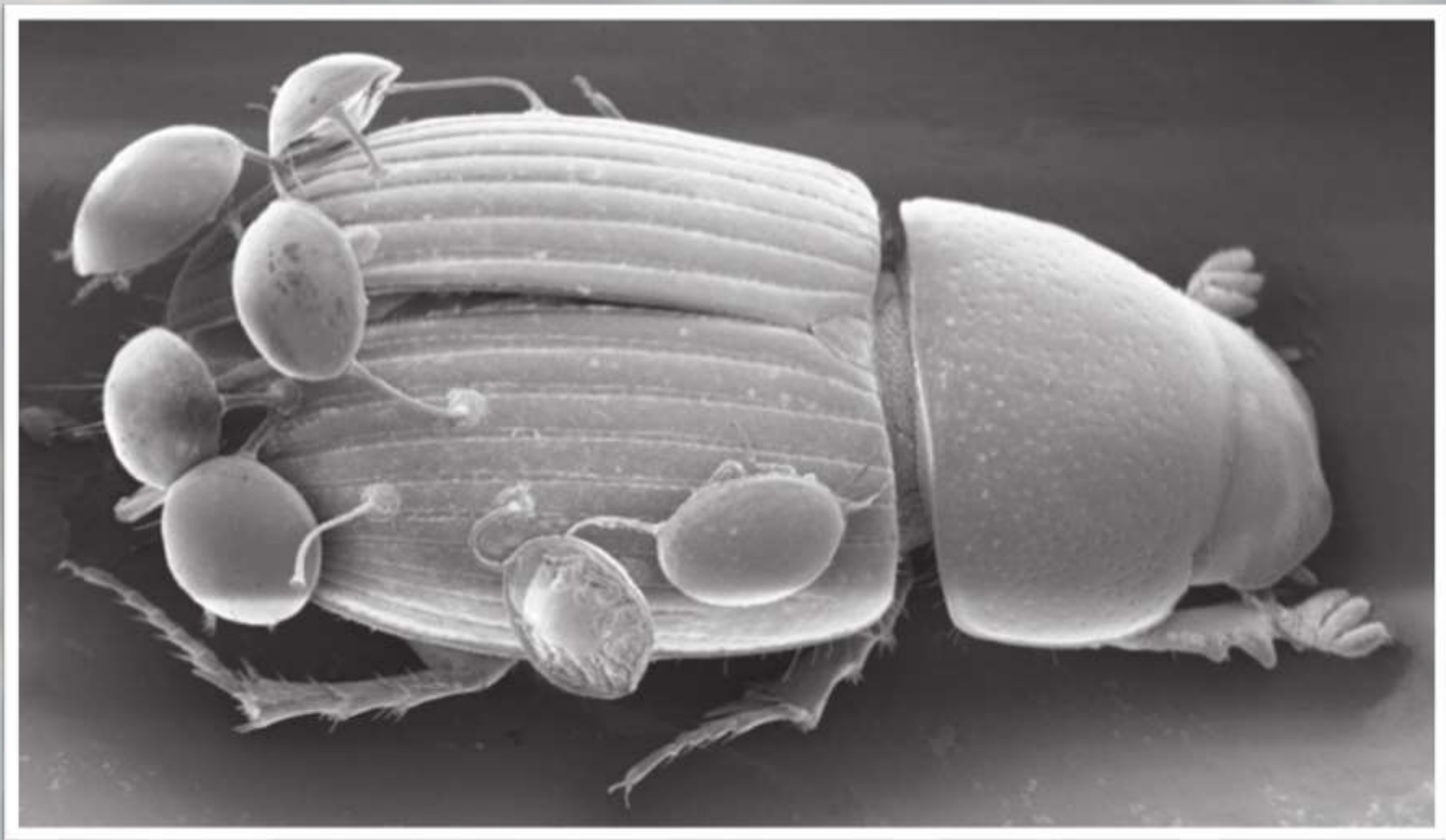
- The **occurrence** of an animal species in a particular area is due to two things:
 - a) The environment is conducive for its growth and within its range of tolerance.
 - b) The species possessed the ability to get there (unless it originated in that particular area)

- The **absence** of an animal species in a particular area may be due to:
 - a) Its inability to migrate or reach that area on account of some barrier.
 - b) After reaching there, it was unable to compete or survive or maintain itself.
 - c) Because of long isolation it became altered or differentiated into a new species.

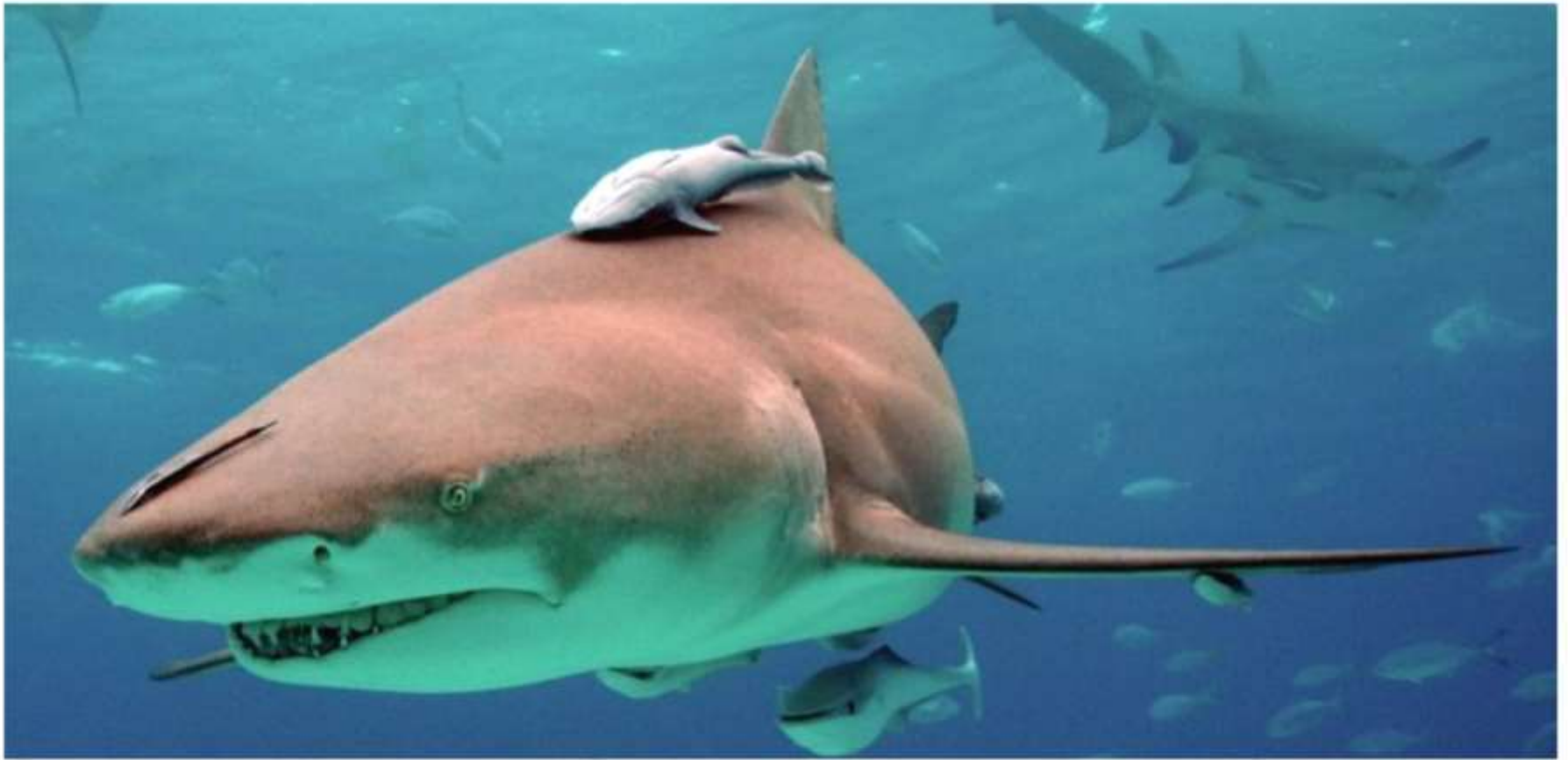
- Organisms of all kind reproduce themselves at astonishing rate.
- Since they are provided with the means of dispersal, they tend to increase the boundaries of their range.
- Due to possession of locomotory organs, the animals disperse more efficiently than plants.

PASSIVE DISPERSAL

- Some **Abiotic** and **Biotic** agents can also assist the movement of organisms. Such dispersal is known as “**Passive Dispersal**”.
- **Examples of dispersal by biotic agents:** Parasites and symbionts are dispersed from one place to another by their hosts.
- Eggs and larvae of many aquatic animals like snail, crabs and fishes may become attached to the feet, feathers of aquatic birds and carried away to long distances.



Deutonymphs of *Uropoda orbicularis* using dung beetle



By attaching itself to the shark, the remora is carried along by the shark, allowing the remora to travel to different areas without having to expend its own energy to swim

ABIOTIC AGENTS CAUSING PASSIVE DISPERSAL

- Abiotic agents such as strong winds are responsible of transporting the cysts, eggs and larvae of many insects, snails, spiders, etc.
- Small birds may be blown away to long distances by severe storms or tornadoes.
- Animals float with water currents from one place to another.



Dispersal of spiders by strong winds

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Snake in flood water

ACTIVE DISPERSAL

- If an animal moves from one place to another by its own efforts or locomotory organs and with intent, it is called **Active Dispersal**.



Active Dispersal

FACTORS INDUCING DISPERSAL

- Population pressure.
- Lack of space or food supply.
- Predation.
- Adverse climatic conditions.
- Change of habitat.
- Opening of new areas elsewhere.
- Sudden calamities such as earthquakes, fires, floods, typhoons, etc.