Fruits and seeds dispersion

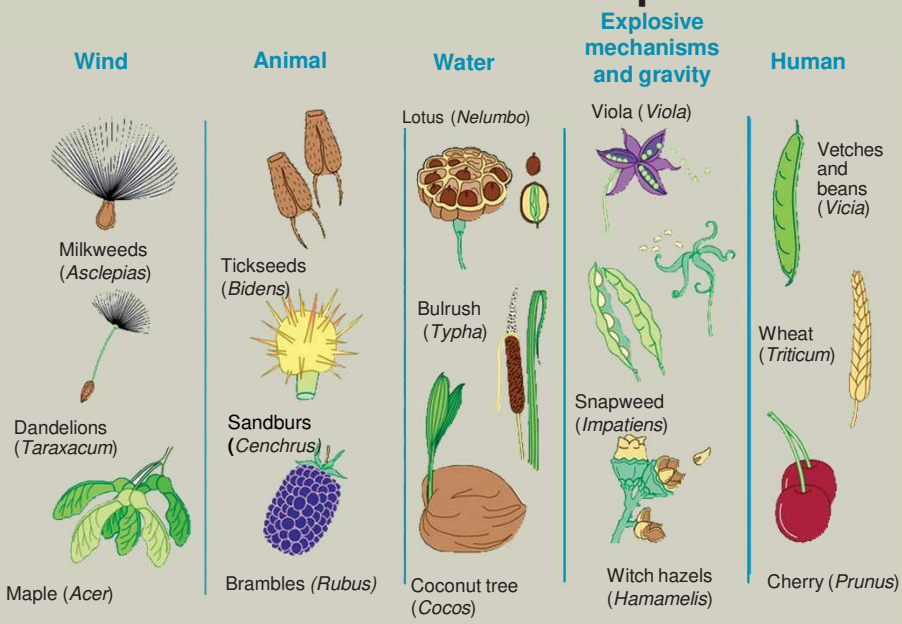
The plants are characterized by high fertility. Nettle can produce about 100 thousand seeds, birch up to 2 million, and poplar even up to 28 million seeds. The abundance of seeds and the diversity of their distribution mechanisms help the plant's descendants to survive and colonize new areas. Wind, water, fire, animals, and humans aid in the dispersal of seeds and fruits.

How do seeds travel?

The process of spreading fruits and seeds is called dispersal.

It occurs with the involvement of various abiotic and biotic factors.

Fruit and seeds dispersion



The **wind** carries very small seeds, such as those of wintergreen.

- Many seeds and fruits, like aspen and willow seeds or the fruits of the goldenrods, have structures such as hairs that aid in dispersal.
- Some plants, such as spruce and pine, and fruits like maple and ash, have wings. For example, the winged seeds of the maple can be carried up to 10 km from the mother plant.
- Seeds of orchids are small and light, allowing wind dispersal even without special appendages.

This method of seed and fruit dispersal is known as **anemochory**.

Coastal, wetland, and aquatic plants spread with the help of **water**.

- The seeds and fruits of such plants often have air bubbles or other adaptations, making them buoyant and preventing them from sinking (such as those of sedges and black alders).
- Additionally, the fruits or seeds of some aquatic plants possess air chambers, known as aerenchyma, which help them remain afloat on the water's surface.
- For instance, coconut palm fruits can be carried long distances by ocean currents, aiding in their distribution.

The dispersal of fruits and seeds by water is called **hydrochory**.

Infloresense of black alder

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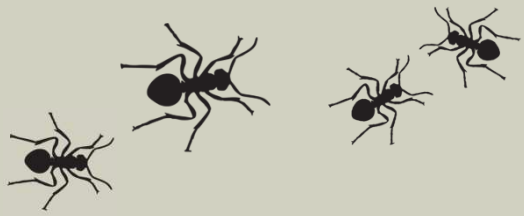
Plants have adapted to spread with the help of animals in many ways, a phenomenon known as **zoochory**.

Small seeds and fruits are often transported by animals through attachment to their fur or feathers. Fruits of certain plants possess sticky bristles or outgrowths that enable them to cling to animals or people's clothes, such as burdock. For example, the legume of yellow unicorn-plant, also known as devil's claws, feature "horns" that aid in attaching to large animals to disperse the seeds.

Yellow unicorn-plant (Ibicella lutea) legume grown at Botanical garden Vingis department.

Some plants produce fruits that are spread by birds and have a sticky texture, such as mistletoe. Animals and birds often consume juicy fruits, but the seeds are not digested and can germinate after passing through the animal's digestive system, aiding in their dispersal. Additionally, certain animals like squirrels and jays gather fruit reserves and bury them, inadvertently aiding in seed dispersal.

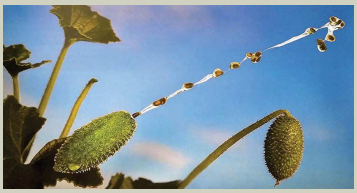
Mistletoe branch with fruits



Myrmecochory is the dispersal of fruits and seeds by ants. The cotyledon, a small outgrowth of the seed rich in nutrients, plays a key role. Ants carry seeds with juicy cotyledons, such as those of the viola, corydalis, celandines, wintergreen, and wild ginger. The nutritious seed appendages attract ants, which carry the seeds back to their anthills to feed their larvae. Once the cotyledons are consumed, the ants discard the plant seeds into the anthill dump, where the soil is enriched with ant excrement and corpses. Some seeds are inadvertently lost by the ants along the way.

A single large ant colony can collect approximately 10 thousand plant seeds per season, making ants the primary insects involved in sowing plant seeds in large quantities.

The dispersal of fruits and seeds by humans is called **anthropochory**. This can occur unintentionally, but it can also be intentional. Foresters collect various fruits and seeds to cultivate future forests and other plantations. In the late Middle Ages, oaks were planted for acorns to feed pigs, while later deciduous trees were cultivated for fuel and conifers for construction and furniture.



Plants themselves have mechanisms for dispersing their seeds. For instance, when touched, the ripe fruits of the wood sorrels suddenly rupture due to tissue tension, ejecting the seeds. The fruits of the exploding cucumber release seeds with a mucilaginous liquid when they detach from the fruit stalk. This phenomenon is known as **autochory**.