Predator
Science - Carnivorous plants

Unfortunately, there is not much historical information about carnivorous plants as they don't fossilise easily, unlike bones or bark.

However, in 2014, scientists found a 40 million year old ancestor of *Roridula* (an *evergreen, insect-trapping shrub*) but most dead carnivorous plants simply rot away in their boggy (very wet and muddy) habitats.

Most carnivorous plants receive a lot of sunlight but grow in waterlogged soils that are extremely low in nutrients.

The ancestors of today's carnivorous plants needed to get their nutrition (particularly nitrogen and phosphorus) from another source, and the high light levels meant they could afford to be less efficient at photosynthesis by turning their leaves into traps instead.

Even non-carnivorous plants can absorb nutrition through their leaves (foliar feeding), so it's not hard to see how leaves that were deeply cupped or slightly sticky would've had an advantage.

Over millions of years, natural selection drove these traps towards greater specialisation; in the pitcher plants, the margins of the cupped leaves were 'zipped up', lids formed to prevent too much extra rainwater from flooding the traps, the mouths began to make nectar, and most even lost their hairs.

As for the sundews, the production of mucus made the leaves stickier, while 'acid growth' enabled the tentacles to quickly ensnare (catch) struggling insects.

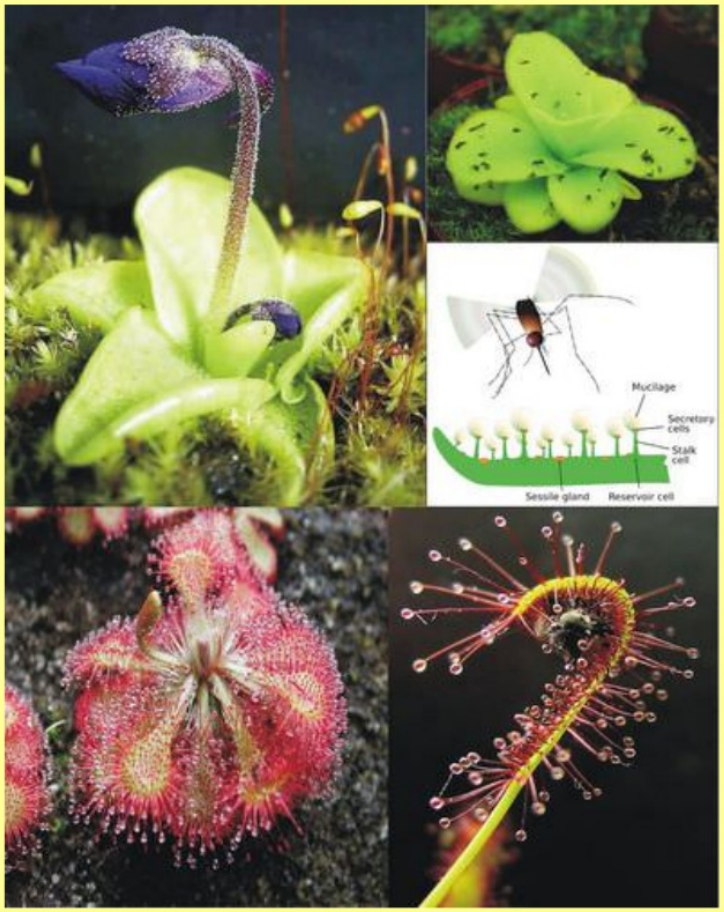
Types of traps fall into five basic categories:

1. Pitfall Traps

Pitfall Traps are modified, rolled leaves, sealed at their edges, which contain a pool of digestive enzymes and/or bacteria.

2. Flypaper Traps

Flypaper Traps coat leaves or hairs with sticky substances. Butterworts, sundews, and rainbow plants secrete gooey, polar glycoproteins to attract and trap prey.



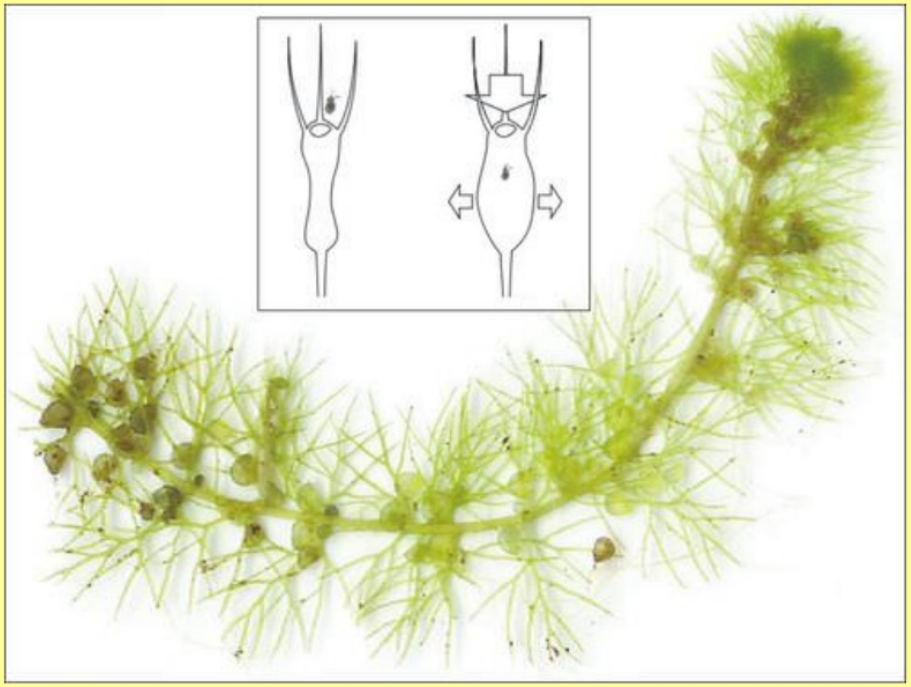
3. Snap Traps

Snap Traps catch prey with rapid leaf movements.

4. Bladder Traps

Bladder Traps create internal vacuums, which suck in prey.

It uses a mechanism to suck prey like you would suck through a straw to drink



5. Lobster-pot Traps

Lobster-pot Traps prod prey toward a digestive organ with inward-pointing hairs.

Although many pitcher plants use some of the features of lobster-pot traps, these are secondary to the "pitcher". A lobster pot is a trap which is easy to enter, but difficult to escape, due to inward-pointing bristles or hairs

Summary

- Carnivorous plants trap, digest, and absorb nutrients from animals but rely on photosynthesis for energy.
- Protocarnivorous plants may trap insects and other animals, but cannot digest or absorb their nutrients.
- Five types of traps are pitchers, sticky surfaces; snap traps, bladder traps, and lobster traps.
- Energy benefits of carnivory outweigh cost only in habitats with abundant light and low nutrients, (bogs).

I would like you to think about all of the information you have read about carnivorour plants and design your own. You are welcome to use the template if you want to, just make sure you include some labels and an explanation about how it traps things.

My Carnivorous Plant

Design and draw a plant that attracts, capture and digests insects or other animal life.

Remember!
Your plant will need roots, leaves and be able to trap insects or other animal life.

Think about trapping by...

- catching the animal in a cage of some kind.
- making the animal stick to your plant.
- having a trap that's easy to get into but impossible to escape from.
- containing a liquid.

Describe how your plant traps insects or animals: