

Lizzie Harper's handout: Leaf Anatomy

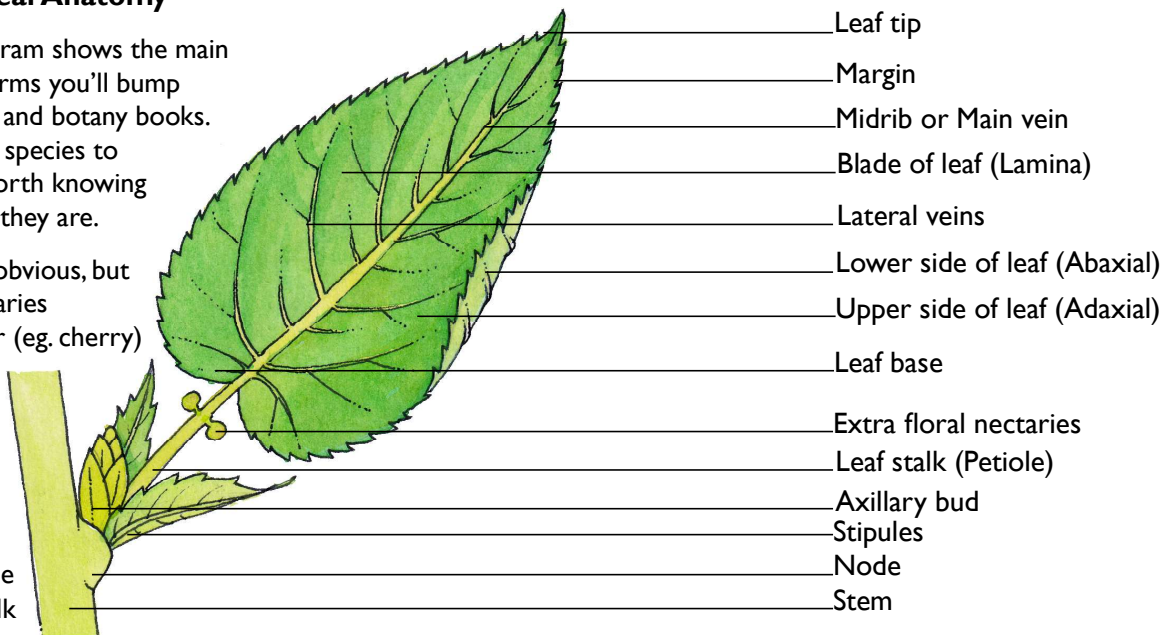
Introducing Leaf Anatomy

The labelled diagram shows the main parts of a leaf, terms you'll bump into in i.d guides and botany books.

These vary from species to species, so it's worth knowing what and where they are.

Most terms are obvious, but extra-floral nectaries sometimes occur (eg. cherry) and give sugary treats to ants who'll fight off leaf eaters.

Stipules are leafy outgrowths at the base of a leaf stalk



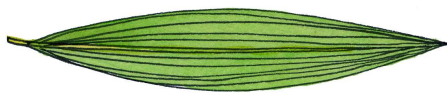
Monocot or Eudicot?

Plants are Monocot or Eudicot, you can tell by their leaves. Once you know which they are, you know a lot about the plant as a whole.

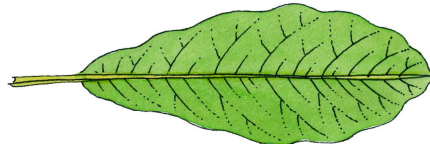
Monocot leaves are narrow and elliptical with lots of parallel veins and no distinct central midrib. Monocots also have fibrous roots, one-leaved seedlings, and flower parts are in threes or sixes. As well as grasses and sedges; lilies, orchids, iris and tulips are monocots. There are about 50,000 species of Monocots.

Eudicots leaves are often broader, with a network of veins (aka being reticulate or having netted veins) and (mostly) one main midrib. Eudicots have tap roots with lateral roots, two-leaved seedlings, and flower parts in multiples of 2 or 5. Many plants are eudicot, over 200,000 species of them!

Monocot leaf



Eudicot leaf



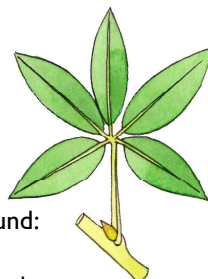
Is the leaf compound or simple?

Simple leaves grow from the plant stem, and often have a secondary growth bud. This is the axillary bud which you can see at the junction of the main stem and leaf stalk (this junction is known as the Axil). It may be small, or be hiding behind the leaf stalk.

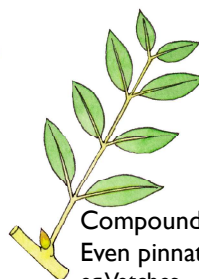
Compound leaves are made of lots of leaflets (each of which may look like a normal, simple leaf). Check to see where the axillary bud is; with compound leaves it's at the axil of the main stem and the leaf branch. Look for the axillary bud in the diagrams below. Compound leaves have different arrangements of their leaflets:



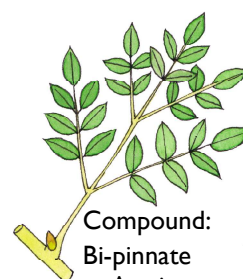
Simple leaf with axillary bud at axil (stem / petiole junction)



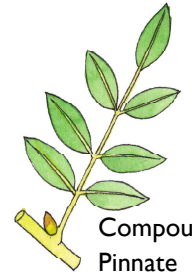
Compound: Palmate eg. Horse chestnut



Compound: Even pinnate eg. Vetches



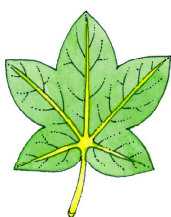
Compound: Bi-pinnate eg. Acacia



Compound: Pinnate eg. Rose



Parallel



Palmate



Pinnate



Tessellate

Leaf vein patterns

Leaf veins are arranged differently, according to species, but we can simplify it down to four main patterns to look for. Look out for the position of, and how many main veins you can see on a leaf.

Remember, monocot leaves will always have many parallel veins,