



Herbology 101

Herbology is an ancient study of plants, similar to what Muggles call Botany (study of plants) or Mycology (study of fungus). For centuries, wizards and witches have been discovering the secret properties that these living organisms possess, not unlike how Muggle scientists have uncovered naturally occurring compounds in plants for use. In order to unlock their mysteries, we need to first understand that all plants are related. From screaming mandrakes to whomping willows, plants share a similar set of characteristics. At the same time, each plant species shares more traits with some over others. This can be seen among groups of other living things as well; a wizard and a chimpanzee, for example, are more similar to each other than they are to a dragon or phoenix.

To begin to understand these similarities and what they tell us, we must turn to taxonomy. Taxonomy is the grouping of organisms based on their characteristics. In this activity, you will use evidence to determine the relationship that exists among groups of plants that any potions master may have in the cupboard. Knowing how these plants are related can lead us to better understand their specific properties.

- ⚠ Using the information cards which include drawings and descriptions, group the plants you think may be more closely related to each other. Each species card has a picture, name, and information together on the cards. Then you are to sort them into 4 groups based on their physical characteristics. The groups DO NOT need to be equal. You just need to cite specific evidence as to why you grouped them the way you did.
- ⚠ Justify why you grouped them into the groups you did. What are the plant similarities per group? Put your data in your Herbology Notebook.

Group 1

Common names of plants you put in this group - Reason why you put these plants together

Group 2

Common names of plants you put in this group - Reason why you put these plants together

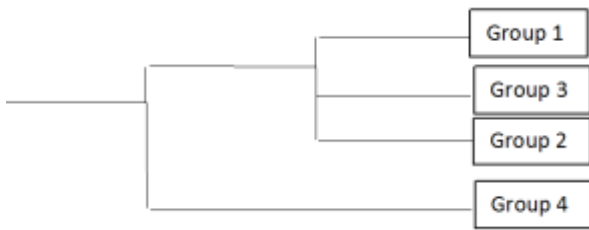
Group 3

Common names of plants you put in this group - Reason why you put these plants together

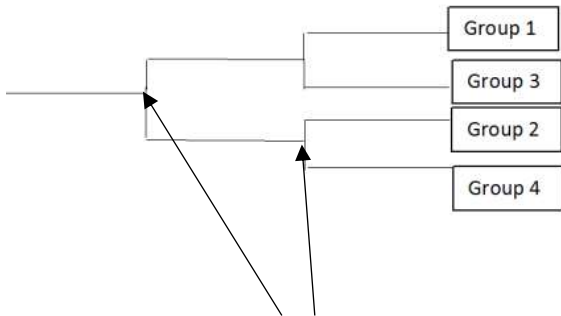
Group 4

Common names of plants you put in this group - Reason why you put these plants together

- ⚠ Now we are going to take that information and make a tree of evolutionary connection. Taxonomic trees can help us to understand how these plants could be related to extinct varieties, how they are able to survive in their habitat, and how they are related to each other.
- ⚠ Have a discussion with your group and see if you can come to an agreement about what groups seem more similar to each other and we place similar groups closer together on a tree.



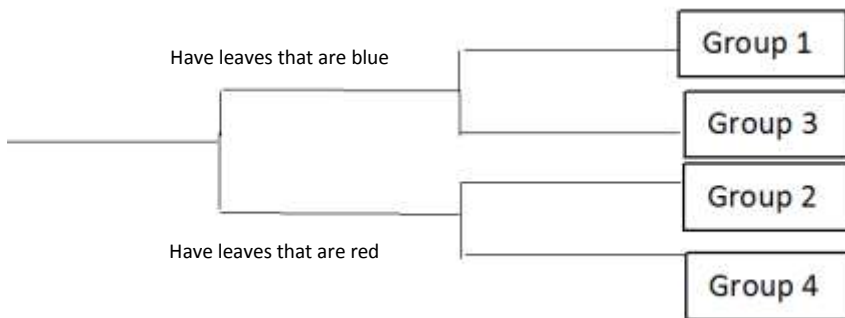
This tree is stating that group 1, 2, 3 are all very similar and group 4 is different



This tree is stating that group 1, 3 are similar and group 2,4 are similar

Please note that branch nodes can rotate. For example moving group 2 with 4 in the second tree does not change the information you are trying to convey.

⚠ Now we are going to start making our tree. For each time you divide your groups write a reason why that branch is separated from the rest. For example



⚠ Keep dividing your tree down until there is only one individual at the end of each branch. Remember you need to tell me why that group divided by writing your statement on the branch. Submit your finished tree in your Herbolgy Notebook and answer all the appropriate analysis questions.

⚠ You now have a taxonomic tree. At one point in time this is all we had for our understanding of how things were related to each other. We now have GENETICS to help us with our understanding. Continue on to the phylogeny activity, part 2.



Common name: Larkspur

Scientific name: *Delphinium tricorne*

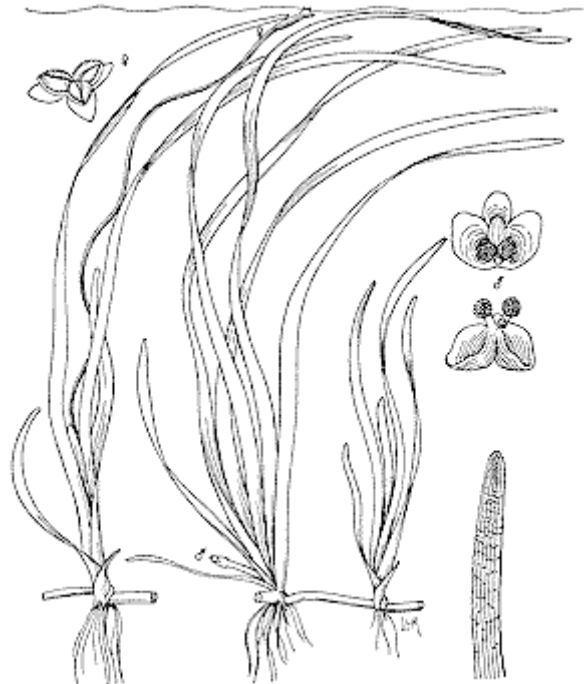
- ⚠ Between 1/2 to 1 1/2 feet tall
- ⚠ palmate leaves deeply lobed
- ⚠ cluster of 6-24 flowers (purple) at the top of the plant
- ⚠ delphinium refers to dolphin in Latin (flower description)
- ⚠ Foliage is very toxic to mammalian herbivores
- ⚠ Seeds are toxic as well and may cause skin irritations.



Common name: Corkscrew eelgrass

Scientific name: *Vallisneria americana*

- ⚠ Long tape-like leaves that are very thin
- ⚠ Plant can reproduce via runners which clone the plant
- ⚠ Aquatic plant that must be underwater for a majority of time
- ⚠ Tolerant of brackish waters (fresh/salt water mix)
- ⚠ White flower exposed above water surface
- ⚠ Great food source for aquatic animals



Common name: *Monkshood, wolfsbane*

Scientific name: *Aconitum napellus*

- ⚠ *Palmate leaves that are deeply lobed.*
- ⚠ *These leaves can come in 3-5 leaves*
- ⚠ *Purple flowers that appear at the top of the flower in clusters of 3-5*
- ⚠ *Incredibly toxic. This plant will cause paralysis even if when handling the leaves.*



Common name: *Poison Ivy*

Scientific name: *Toxicodendron radicans*

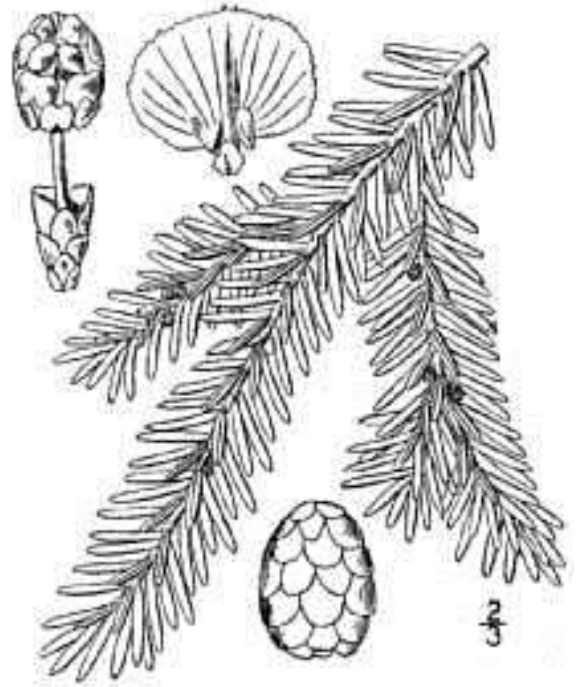
- ⚠ *Leaves come in three joined together and are almond shaped*
- ⚠ *They tend to have one to two teeth per leaf (mitten look)*
- ⚠ *White berries*
- ⚠ *Use a very fibrous root to climb other trees and secure themselves*
- ⚠ *Produce an oil that induces dermatitis (itching skin rash)*



Common name: Eastern Hemlock

Scientific name: Tsuga canadensis

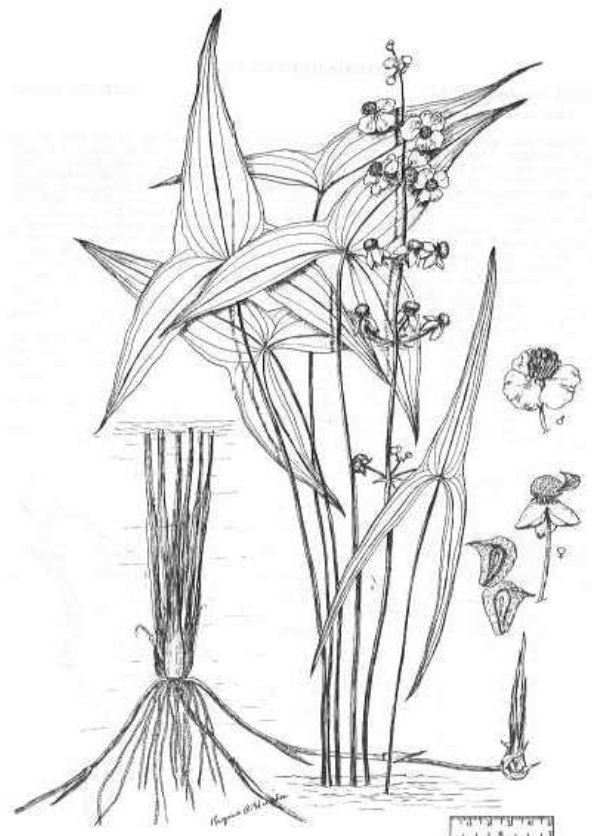
- △ Upright tree that can reach 100 feet tall
- △ Member of the conifer family (makes cones) - no fruits
- △ Green flat needles that are about an inch or less
- △ A good wood for building
- △ Not toxic
- △ Not to be confused with poison hemlock, which is not a tree.



Common name: Arrowhead plant

Scientific name: Sagittaria latifolia

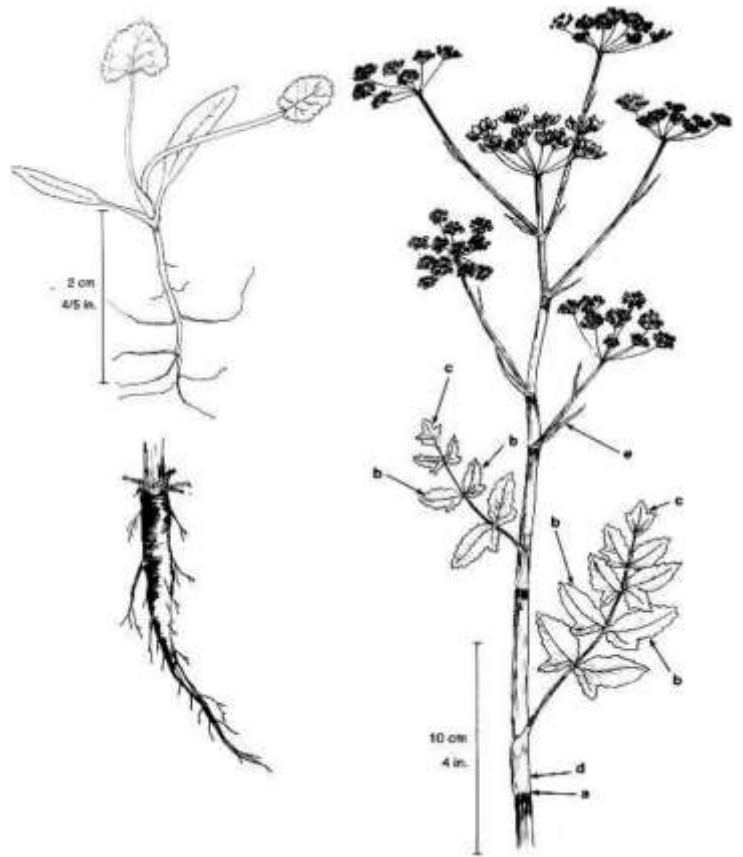
- △ Mostly aquatic plant that keeps its roots submerged but leaves grow to reach above the surface
- △ Leaves are a characteristic arrow shape.
- △ White flowers off a central stalk
- △ Very edible plant. Have an enlarged root (tuber) that is similar to a potato,



Common name: *Wild parsnip*

Scientific name: *Pastinaca sativa*

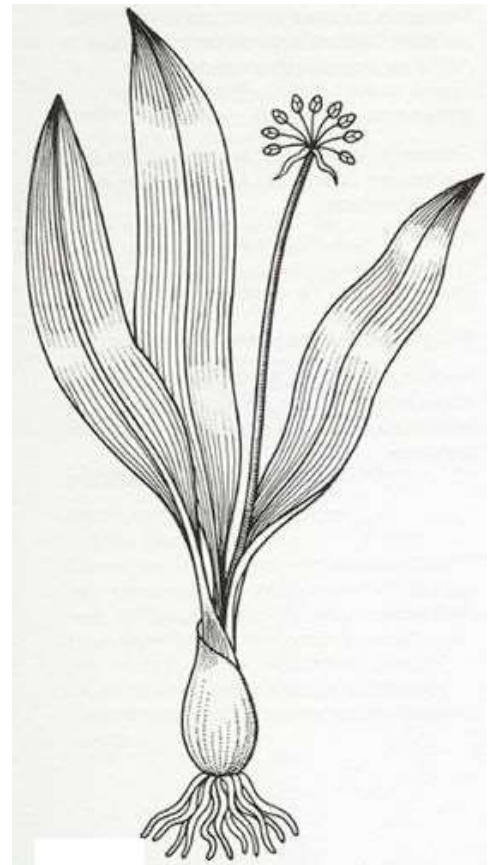
- ⚠ 2-5 feet tall
- ⚠ Leaves have 7-9 leaflets.
- ⚠ Umbel flower structure with yellow color.
- ⚠ Very large tuber (tap root) that is white/yellow in color
- ⚠ Leaves produce an oil that is phototoxic. (UV light causes a burn/rash)



Common name: *Wild leek (onion)*

Scientific name: *Allium tricoccum*

- ⚠ Thin leaves that appear to look like grass blades
- ⚠ Purple pompom flower
- ⚠ Has an enlarged cluster of leaves at ground, subground level (bulb)
- ⚠ The bulb is very edible
- ⚠ Grow 6-8 inches tall
- ⚠ A forest floor of them will give a distinct onion smell



Common name: Virginia creeper

Scientific name: *Parthenocissus quinquefolia*

- ⚠ Palmate leaves with 5 leaflets
- ⚠ Leaflets tend to be highly toothed
- ⚠ Creeping vine that uses tendrils to grab and climb
- ⚠ Black berries when ripe
- ⚠ Berries can be toxic
- ⚠ Leaves cause irritation in a few people



Common name: Cherry tree

Scientific name: *Prunus avium*

- ⚠ Woody plant (tree)
- ⚠ Simple oval leaves with light toothing along the edge
- ⚠ White flowers
- ⚠ Red berry with hard stone seed
- ⚠ Very edible fruit
- ⚠ Medium sized tree with rounded crown 50 feet tall



Common name: American Elm

Scientific name: Ulmus americana

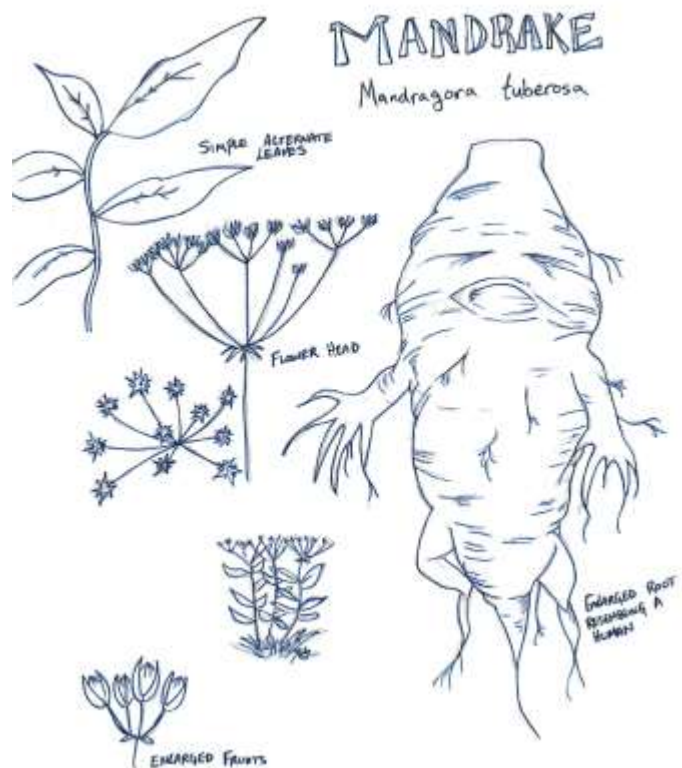
- ⚠ Large tree reaching up to 120 feet tall
- ⚠ Ovulate leaves with lot of teeth along the edges
- ⚠ White droopy flowers
- ⚠ Seeds/fruits are flat discs with seeds in the center
- ⚠ Often planted for its amazing ability to produce lots of shade



Common name: Mandrake

Scientific name: Mandragora tuberosa

- ⚠ Herbaceous plant that gets 2.5 feet tall
- ⚠ Has yellow flowers clustered at the end of the plant
- ⚠ Simple alternate leaves
- ⚠ Small capsule fruits
- ⚠ Large taproot that matures with plant
- ⚠ The plant's screams can knock a botanist out
- ⚠ Grinding mature plant can make several antidotes for petrification



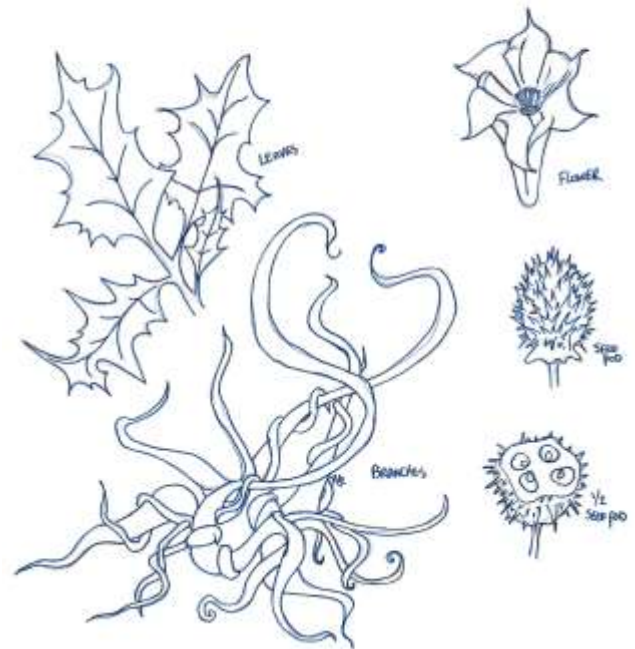
DEVIL'S SNARE

Datura stramonium

Common name: *Devil's snare*

Scientific name: *Datura stramonium*

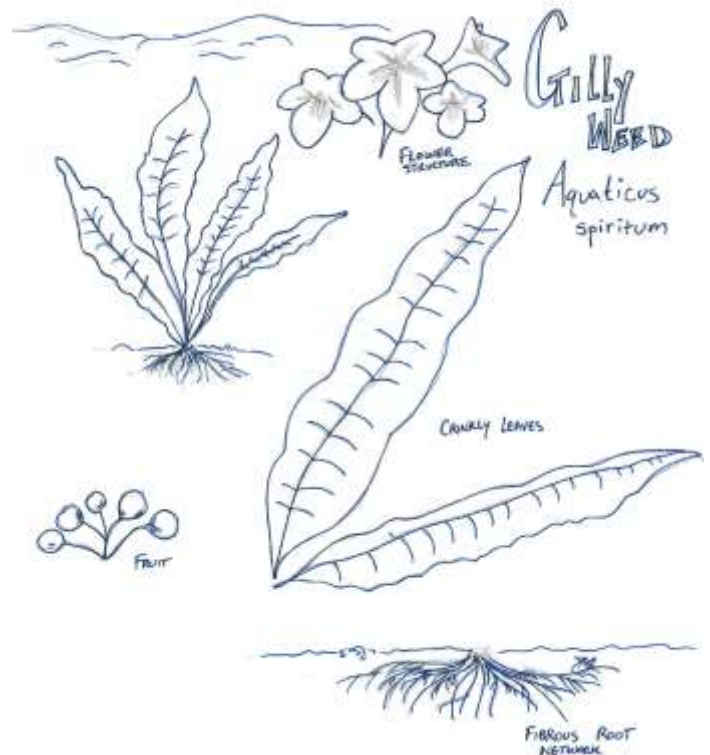
- ⚠ *Low growing plant that loves to climb (tendrils)*
- ⚠ *Unlike most plants it loves moon light as its energy source*
- ⚠ *Instantly repelled from direct light*
- ⚠ *Thigmotropic: Will bind and surround anything that touches it*
- ⚠ *Dark green/purple leaves*
- ⚠ *Droopy dark purple flowers*



Common name: *Gilly weed*

Scientific name: *Aquaticus spiritum*

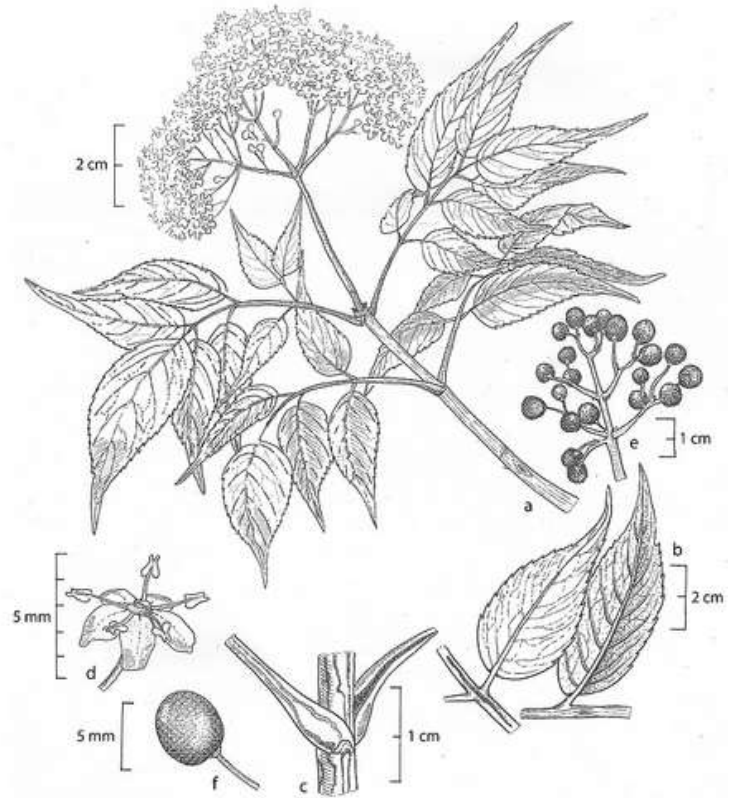
- ⚠ *Simple aquatic plant*
- ⚠ *Fibrous root system*
- ⚠ *Crinkly leaves that are very thin*
- ⚠ *White flowers that bloom at water surface*
- ⚠ *Red berry fruits*
- ⚠ *Eating leaves can give a botanist the ability to grow temporary gills for aquatic respiration*
- ⚠ *Fruits are a laxative*



Common name: Elder tree

Scientific name: Sambucus magicae

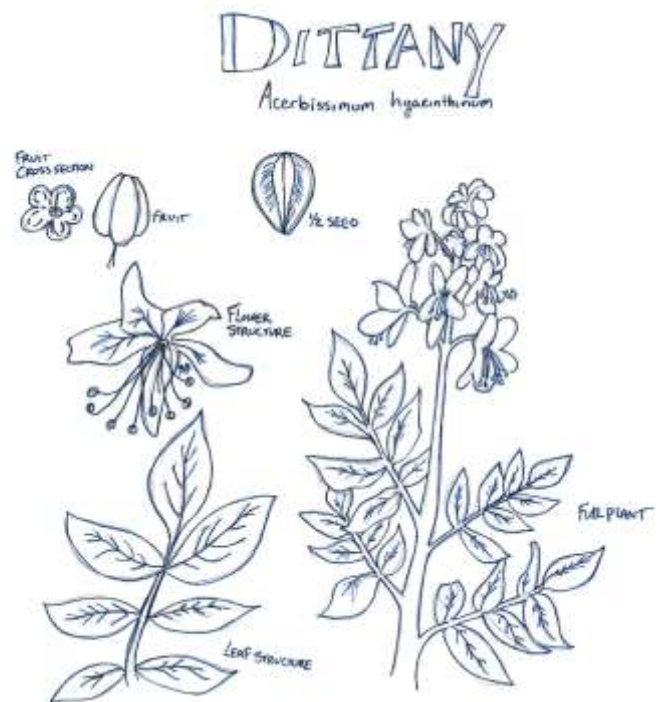
- ⚠ Incredibly rare tree and distribution is unknown
- ⚠ Leaves are compound with leaflets of 5-7
- ⚠ Tree has incredibly smooth textured bark
- ⚠ Grows 150-200 feet tall
- ⚠ White flowers in an umbel at terminal end of branches
- Small black berries that are very edible



Common name: Dittany

Scientific name: Acerbissimum hyacinthinum

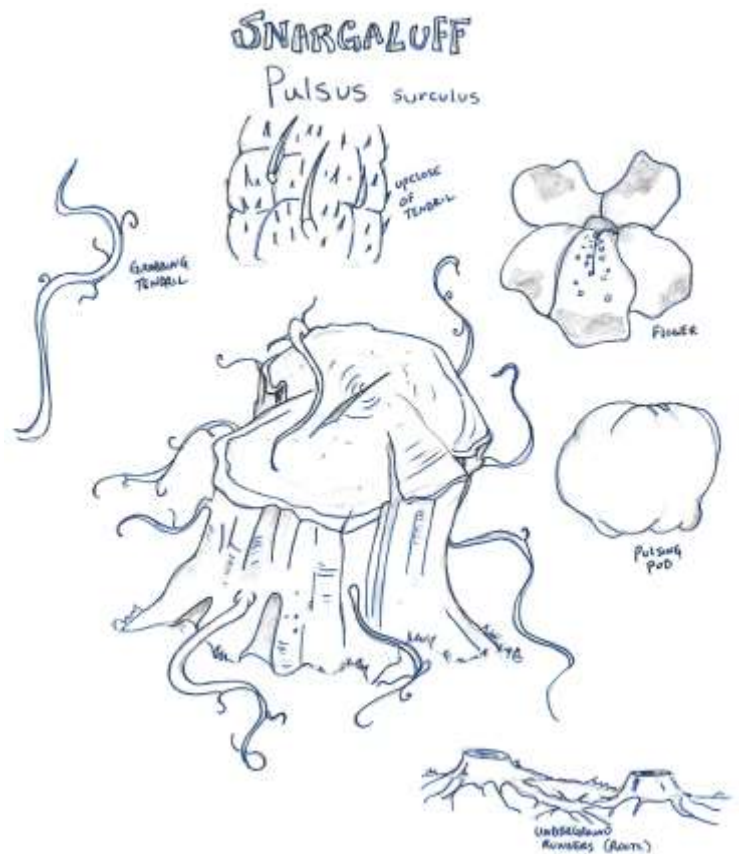
- ⚠ Compound leaves with six tough textured leaflets
- ⚠ Oils produced by the plant can cause photodermatitis
- ⚠ Leaves have a citrus smell but has an incredibly bitter taste
- ⚠ Flowers are purple/pink
- ⚠ Roots have small numerous tap root structure
- ⚠ Grows 2-4 feet tall



Common name: *Snargaluff*

Scientific name: *Pulsus surculus*

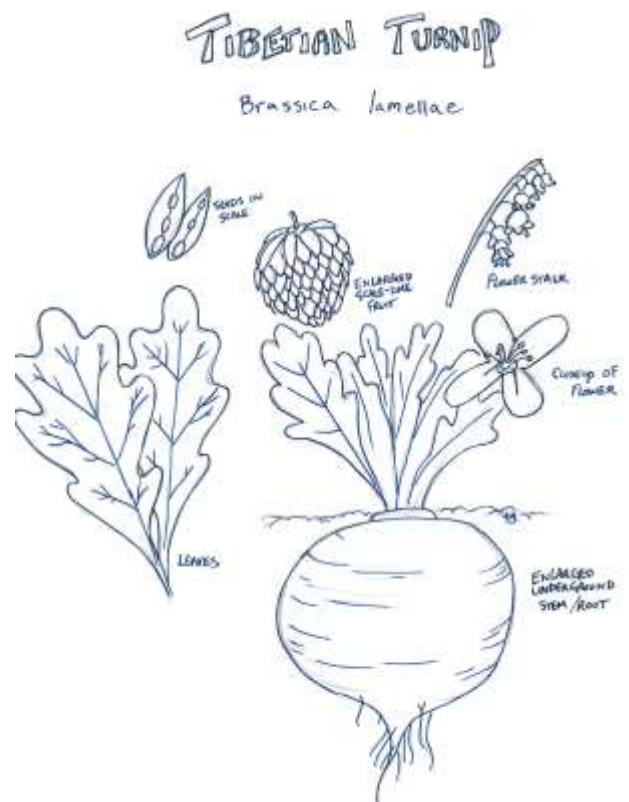
- ⚠ Low-growing spreading plant resembling a gnarled stump
- ⚠ Small leaves-usually turn into microscopic thorns
- ⚠ Blue/black flower
- ⚠ Flowers turn into pulsating pods about the size of grapefruits
- ⚠ Pods can be used to make a variety of potions
- ⚠ Grows very well under or on other plants
- ⚠ Roots produce runners that allow the plant to spread



Common name: *Tibetan turnip*

Scientific name: *Brassica lamellae*

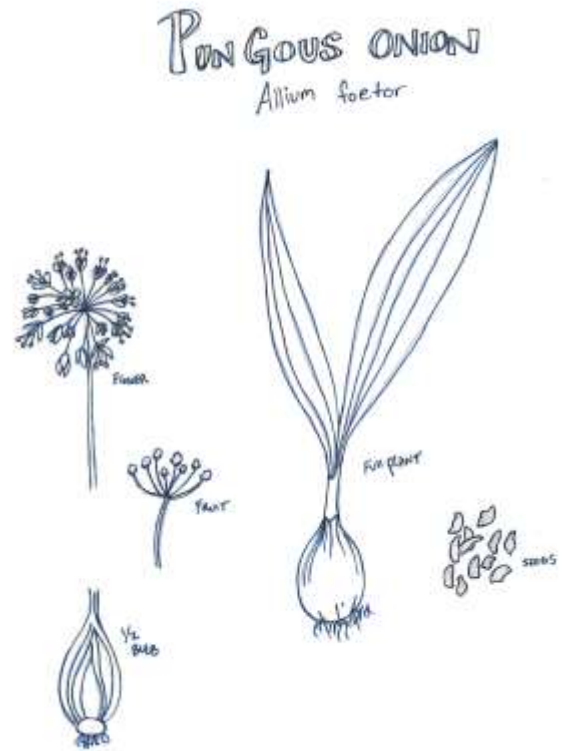
- ⚠ Green herbaceous plant
- ⚠ Leaves are big and oblong. Edges are rough and a deep green color
- ⚠ Plant grows 1 foot high
- ⚠ Base of plant has an enlarged root that is a marbled red and purple
- ⚠ Root can be ground up to allow a person to breathe underwater - uncertain how this is achieved



Common name: Pungous onion

Scientific name: Allium foeter

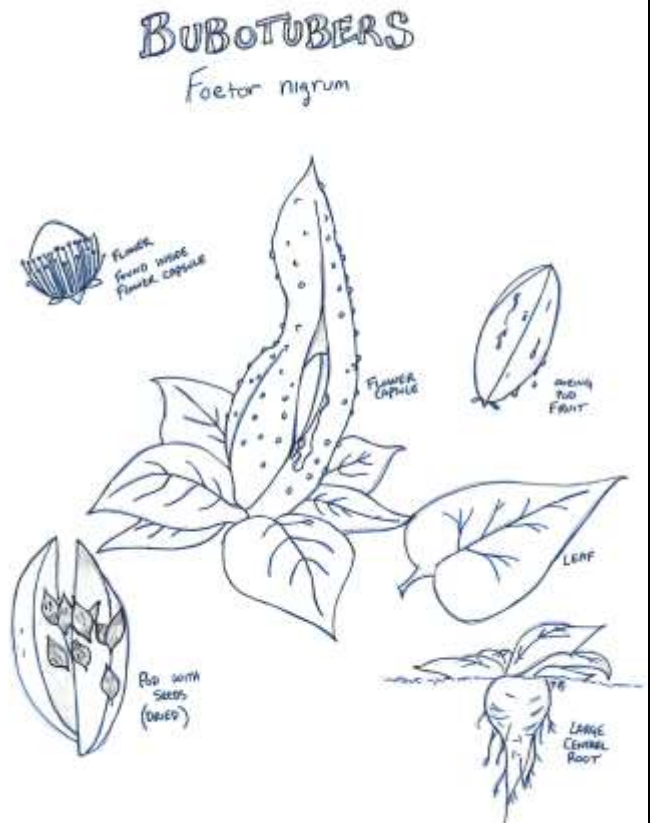
- ⚠ Simple long slender leaves
- ⚠ Plant has been described as smelling like a trash can that contains rotting food and a dead skunk
- ⚠ Base of leaves swell into an edible bulb underground
- ⚠ Bulb can be ground up to produce an elixir that clears skin, wrinkles, and whitens teeth
- ⚠ Purple-yellow flowers that grow in a pompom fashion



Common name: Bubotubers

Scientific name: Foetor nigrum

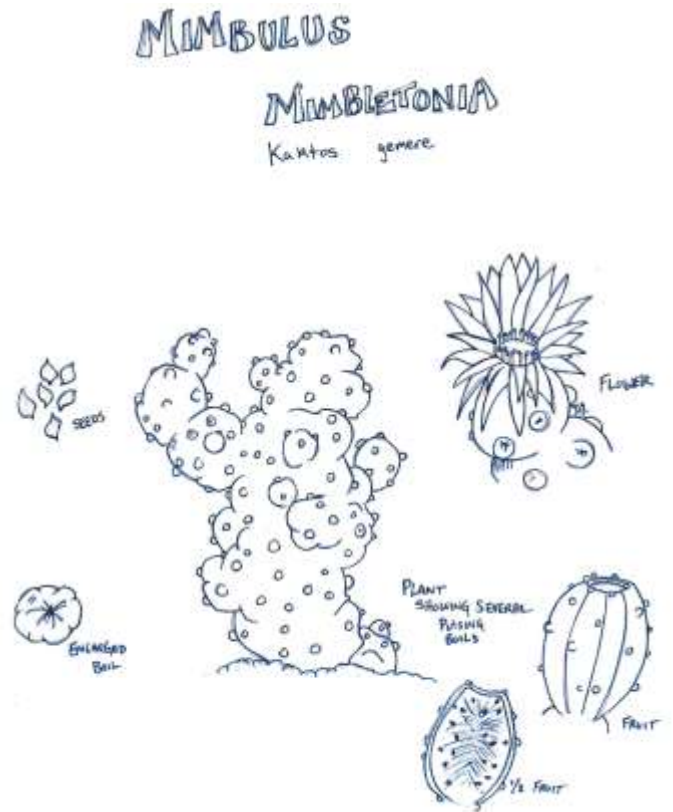
- ⚠ A herbaceous plant that grows low to the ground
- ⚠ Large, dark green leaves lay on the ground
- ⚠ A spike of flower/fruit projects from the center of the plant
- ⚠ Spike is dark black with little bumps all over its surface
- ⚠ Flowers develop into a rancid fruit full of pus and seeds
- ⚠ Pus is good for various elixirs but can burn skin and eyes. Take caution when squeezing for extraction.



**Common name: *Mimulus*
*Mimbletonia***

Scientific name: *Kaktos gemere*

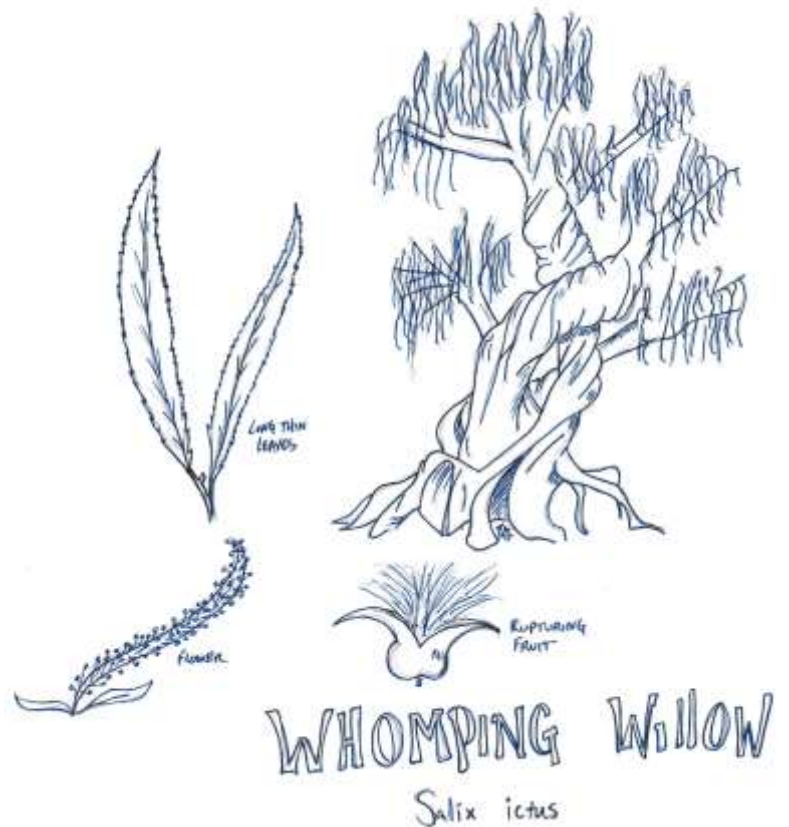
- ⚠ Branches are green and bulbous with small boils that develop from its leaves
- ⚠ Boils purple-green in color are found all over the plant and release a rancid manure smell when popped.
- ⚠ Not toxic and use in potions is unknown
- ⚠ Roots are often shallow and spread easily
- ⚠ When touched the plant will make an agitated noise and wiggle



**Common name: *Whomping*
*Willow***

Scientific name: *Salix ictus*

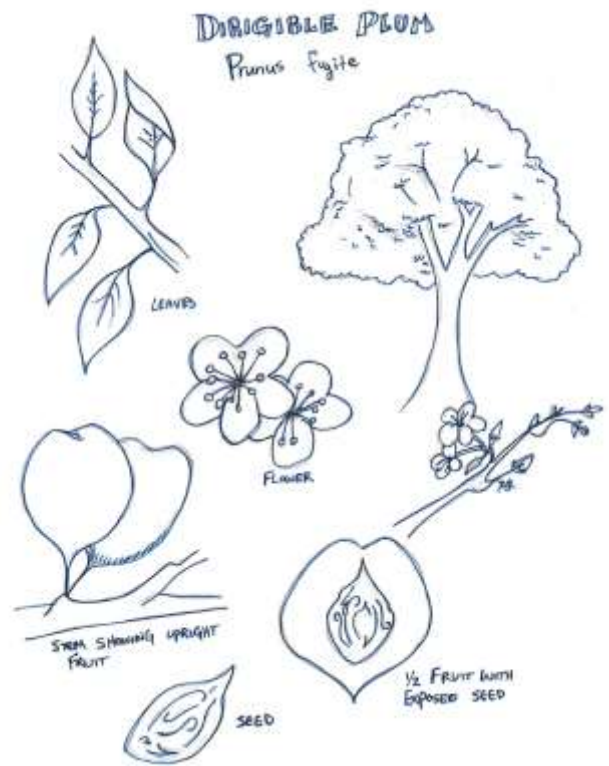
- ⚠ Tree with twisting limbs
- ⚠ Can reach 200 feet tall
- ⚠ Plant has a “mind of its own” and can respond environmental stimuli quickly
- ⚠ Leaves are narrow and droop from motile branches
- ⚠ White flowers are small and on a spike
- ⚠ Fruit is a capsule that ruptures cotton-like seeds



Common name: Dirigible plum

Scientific name: Prunus fugite

- ⚠ Tree that reaches 80 feet tall
- ⚠ Simple glossy leaves
- ⚠ Pink flowers
- ⚠ Fruit enlarges and defies gravity, floating upward
- ⚠ Seed is considered a “stone” and has an ornate swirl pattern
- ⚠ Very edible fruit



Common name: Venomous Tentacula

Scientific name: Ostium brachium

- ⚠ Vine plant
- ⚠ Roots will spread underground allowing plant to inhabit new areas
- ⚠ Many thorns all over branches
- ⚠ Leaves have a distinct groove on one side and grow in pairs
- ⚠ Base of plant has a biting “beak” that is best to avoid at all costs

