



Common Plants of Nunavut

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Inside cover images from top to bottom: Crowberry; purple saxifrage flower; snow buttercup



Common Plants of Nunavut

Written by

**Carolyn Mallory
and
Susan Aiken**



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Introduction

In the pages that follow, you will discover the important features of plants—how they reproduce, what types are found in the Arctic, and, in some cases, how they have played an important role in the traditional life of Inuit. In this book, we have tried to mention, wherever possible, the traditional uses of plants found in Nunavut. We have also tried to point out some of the adaptations that plants have undergone to survive the cold, windy winters and the often desertlike, dry summers.

Most residents of, and visitors to, the Arctic are familiar with the diversity of animal life here. After all, who hasn't seen photos of the enormous white polar bear, or been intrigued by the unicorn of the sea, the narwhal? Often overlooked is the fact that animals rely either directly or indirectly on plants for their very survival. Tiny as they may be, the plants that live here in the Arctic help sustain life as we know it.

Plants have played a vital role throughout human history. Unlike animals (humans included), plants are producers, meaning that they make their own food. They do this through the process of photosynthesis, which combines water, carbon dioxide, and light energy from the sun to produce carbohydrates, mostly sugars, which plants then use to grow. Animals, on the other hand, are consumers, which means they eat plants or other animals, or both. Without plants, the primary producers of food, we could not survive. For this reason alone, it is important to study plants to make sure they continue to thrive. Aside from food, plants have other important uses for people. They provide us with materials to shelter ourselves, they produce fibres that we have learned to weave into fabrics, and they produce innumerable remedies that medicine men, shamans, and elders have been using for generations to heal illnesses and pains. In fact, plants produce so many chemicals that scientists continue to look at them as potential sources of new medications.

Botany is the study of plants, and includes everything from their structure to their reproductive techniques, the adaptations that help their survival, and their taxonomy (identification and classification). This work is done by **botanists** who have gone to school for many years to acquire the necessary skills. Classification of plants involves naming new plants and deciding what family they belong to. Groups of plants with similar characteristics belong to the same family, which is a type of grouping used by scientists. For example, did you know that mountain avens belongs to the rose (Rosaceae) family? Belonging to a family doesn't necessarily mean that the plants look the same as roses, although there is usually some family resemblance. In the case of mountain avens, this resemblance is seen particularly in the structure of the flowers. What it does mean is that the plants share a common ancestor. Classification is an ongoing process, and as botanists learn more through developments in genetics, they continue to adjust plant classification to place plants in their proper families. You may have heard of DNA studies being used to

sort out criminals—in the last twenty-five to thirty years botanists have been using similar studies to understand how plants are related.

Naming a plant involves giving it a generic name and a specific epithet or species name. Both of these names are in Latin. Latin is a dead language (no longer spoken and therefore unchanging) and botanists around the world, no matter what language they speak, know exactly what plant is being referred to when they see the Latin name. Common names for plants occur in many languages and some plants have up to fifty common names just in English! Using the scientific or Latin name ensures that people around the world are indeed talking about the same plant. When writing the scientific name of the plant, the first word (genus name) is capitalized and the second word (species name) is not. Both words are italicized. For example, purple saxifrage has the Latin name *Saxifraga oppositifolia*.

Before exploring some of the different species of plants found in Nunavut, we'll go over some basic plant structures. In general, a plant's life cycle starts when the plant is a seed, and ends when the new plant produces seeds itself.

PLANT LIFE CYCLES

In plants, the seeds are like the eggs of birds. Inside each seed there are food reserves, like the whites of eggs, and a tiny plant, like the yolk of an egg. Eggs need to be kept warm in order for the chick inside to grow and hatch. Arctic seeds need winter cold before they can respond to the water and sunlight of spring and grow. They swell and push out of the seed coat, which is like the shell of an egg.

Annual plants start life from seeds in the spring. They flower and form new seeds that are fully mature before the winter. Very few species of annual plants complete their life cycle every year in Nunavut.

Some plants grow and store food in the roots during their first growing season and use the reserves to produce flowers and hopefully mature seeds in the next growing season. After that, the plants die. Such plants are called **biennials**. Scurvy-grass is one of ten species in Nunavut that are biennials.

Most plants in Nunavut are **perennials**—they live for more than two growing seasons. Some Arctic plants, like willows, can live for over 100 years. For plants with long lives, if there is a bad growing season and no mature seeds can develop, it is not life-threatening. Perennial plants store the reserves that the leaves have produced even in a short season, and try again the following year.

ROOTS/STEMS

When a seed sprouts, or germinates, part of the plant (the shoot) grows above ground, while the other part (the root) stays underground. The roots have four main functions. They anchor the plant in place, absorb essential minerals and water from the soil, and move these nutrients up the stem and into the leaves. Finally, roots also store the sugars that are made in the leaves, especially in the fall. In plants where the leaves die off each year, any useful foods or nutrients that can be moved out are transported to the roots before the leaves die. Some of the stored materials are used for such things as producing flowers. Stems are the next important plant part because they support the above-ground parts of a plant, allow the conduction of materials from one part of the plant to another, and produce new tissues such as leaves and reproductive parts.



LEAVES

Going up the stem, we come in contact with the leaves. Leaves come in all shapes and sizes and, as we look more closely at individual plants, this will become very obvious. The leaves' most important function is to produce food. In the leaves, there are energy-catching units (chloroplasts) that act like solar panels and provide the energy needed to fuel a chemical reaction that converts carbon dioxide and water into plant food. The position of the leaves on the stem maximizes the exposure of chloroplasts to sunlight. The leaves have two other functions that play a role in the survival of the plant. They allow the excess water that the plant absorbs to be removed by a combination of evaporation and transpiration. The leaves also take in the carbon dioxide that they need to help produce food, and release oxygen, which is a by-product of food production.



FLOWERS

Usually the reproductive parts, or the flower, are at the top of the stem. Some plants lack flowers, such as lichens, mosses, ferns, horsetails, and pine trees, but the great majority of plants in Nunavut have flowers, and those are the plants that will be discussed in this book. A book that included all the plants that grow in Nunavut would be very long, because there are at least one hundred and fifty species that grow around Iqaluit alone!



A flower's function is to provide the plant with a way to reproduce sexually, meaning that male and female parts are necessary. Sexual reproduction is important because it allows for variation within a species. Look at it this way—the young plants get a combination of the mother's and the father's genes, just like you might have dark brown hair and eyes like your mother, but have big feet and short toes like your father. But why is this important? Let's try looking at a specific example to explain. If you have a mother plant that has hairy **sepals** (structures just below the **petals** that protect the petals and reproductive organs when the flower is in **bud**) and a father plant that has dark sepals, some of the “children” plants could have dark and hairy sepals. Dark and hairy sepals are an advantage in the Arctic because the dark colour attracts the heat of the sun when the flower is in bud inside the sepals, and the hairs trap the warmth, keeping the bud warmer and allowing it to grow more quickly in the short Arctic growing season. This adaptation will give the plant a better chance of surviving and reproducing. With time, more and more of this species will have both dark and hairy sepals and the plants will be better equipped for life in the Arctic environment. This is survival of the fittest at work! Without sexual reproduction, plants can only produce exact clones of themselves. If a disease comes along and all the plants are exactly the same, chances are they could all get the disease. This is not at all advantageous to the species.

Let's take a look at the parts of the flower. A complete flower is made up of sepals, petals, **carpels**, and **stamens**. Sepals are on the outside of a flower bud, and when it opens they are directly below the petals. Sometimes they look exactly the same as the petals, but usually they are firmer in texture. Their main function is to protect the petals and reproductive organs when the flower is in bud. The petals in most flowers are the showy, colourful, and nicely scented parts that we think of as the flower. Their main function is to attract insects—or birds in the South, but not in the Arctic—with their scent and colours, to aid in pollination (the transfer of pollen from a male part to a female part). The carpels are the female parts. A simple carpel develops female **ovules** that become seeds when they are fertilized. Plants can have a branched carpel, and an example of this is the purple saxifrage, which has two carpels that are joined together at the base but separate at the top. Other

plants may have more than two carpels completely joined together. In an orange, each segment is a carpel, so oranges can have between nine and eleven carpels. Every carpel must have access to a **stigma**, which is a sticky or feather duster–like surface that receives the pollen. Between the **ovary** and the stigma may be a **style**, which is a stalk that, when elongated, helps put the stigma well away from the ovary and into a better position to trap pollen.

The stamens are the male parts. They are made up of the **anther**, the swollen top part that bears the pollen, and the **filament**, a stalk that puts the anther in a better position to shed pollen onto a visiting insect or have the pollen blow about in the wind. Pollination, or the transfer of pollen from the male stamen of one plant to the female stigma of another plant, occurs in a couple of ways. In showy flowers, the petals attract insects (or birds and bats in warmer climates) that drink the nectar in the flower or gather the pollen as food and in the process get pollen somewhere on their bodies. When they move to the next flower, they may drop this pollen onto a stigma, thereby pollinating that flower. Once the pollen is on the stigma, it grows a tube down the style and fertilizes the ovules in the carpel; the plant should at that point be able to produce seeds. In less showy plants, wind pollination usually occurs. These plants—mostly grasses, reeds, rushes, and sedges—use the wind to blow pollen from their flowers to another plant's.

FRUIT

After pollination occurs, the petals have served their purpose and usually fall off as the plant produces fruit. As you will see in this book, there is a wide variety of fruits. The main function of the fruit is to help protect the seeds from predators (e.g., through the use of hard **nuts** or chemical repellents) and the elements, and to help with dispersal once the seeds are ripe. Some fruits, such as **berries**, also provide foods to help the seeds get established. Once the seeds are dispersed, the cycle starts all over again. It is important to note that specific plants need certain types of soils or conditions to survive, and a seed dropped just anywhere will not necessarily grow a new plant successfully. For instance, *Mertensia maritima* grows well on sandy beaches near the ocean and would not thrive inland on the tundra. *Cassiope tetragona* grows really well out of the wind on the dry, mossy tundra and would not likely grow if one of its seeds landed on the beach.



The term fruit in plants is used to describe the mature ovary of a flower after it has been pollinated. We usually think of fruit as fleshy, like apples or oranges, but fruit can be dry, like peanuts still in the shell. Inside a peanut shell, there are usually two peanuts. These are the seeds.

The outside of a fruit has two scars. One is where the fruit was attached to the plant, while the other end may indicate where the sepals, petals, and style(s) were attached. It is easy to see this in some of the fruit that we buy at the grocery store. In oranges, at one end there is often a tiny stalk and the outline of five sepals, while at the other end there is evidence of where the style was attached. In oranges, the ovary was on top of the petals in the flower. Inside an orange, each segment is a carpel. A pea **pod** is a single carpel. Many plants have more than one carpel in the ovary. The peas inside were ovules in the carpel when it was in the flower. These become seeds. In apples, there is often a stalk at one end, and on the **opposite** side dried up remains of the flower. In apples, the petals are on top of the ovary in the flower.

There are six species of Arctic plants that have juicy, edible fruit: blueberry, cloudberry, cranberry, crowberry, and two species of bearberry. Every other flowering plant has dry, usually small fruit. They are easily overlooked and not always formed if the growing season is short.

Let's take a closer look at some of the different fruit you will see in the Arctic, out on the land.

An **achene** is a very simple fruit. It is tiny, dry, and one-seeded, with a thin wall. It is the product of a single ovary. They are just visible to the naked eye. All types of sedge, bistort, mountain sorrel, and mare's tail have achenes.

The fruit of buttercups consist of many achenes grouped together on a central, dome-shaped **receptacle**. While each achene is less than two millimetres high, the **cluster** of achenes is about twelve millimetres high. This type of fruit is called an **aggregate** of achenes. Mountain avens and cinquefoil also have this type of fruit.

A **legume** is a dry fruit formed from one carpel. It usually opens along two sides, like a pea pod, when the fruit is ripe. Members of the Fabaceae family have this type of fruit.

A **capsule** is a dry fruit derived from more than one carpel. When the fruit is ripe, the capsule splits open into as many segments as there are carpels. Many Arctic plants bear this type of fruit, from rushes to willows and saxifrages.

A berry is a fleshy fruit with a few or many seeds, like a tomato. The seeds are born on placentas that are on an **axis** through the centre of the fruit. Technically both a tomato and a cucumber are berry fruits. In Nunavut, blueberry and mountain cranberry are true berries.

A **drupe** is a type of fruit, of which plum and nectarine are two examples. There is a seed inside covered by a stony wall that is formed from the inner layer of the ovary. The middle wall of the ovary becomes fleshy, and the outer wall we call the skin of the fruit.

In Nunavut, the drupelets are tiny drupes, and in some Nunavut rose species, they form aggregates or groups that look like raspberries. Crowberry is also an aggregate of drupelets.

Nuts are a hard, dry, indehiscent fruit, the product of more than one carpel, often with a single seed. A walnut in the shell is a typical nut. The only plant that produces nuts in Nunavut is the Arctic thrift and they are very tiny.

A **nutlet** is the product of an ovary with two or more carpels. As the fruit develops, the ovary divides into two or more units, called nutlets, each containing one seed. This, for instance, occurs in seaside bluebells.

A **silique** is made of two carpels, with the seeds born at the edges of the walls of the carpels. Across the middle of the fruit is a transparent wall called a **septum**. When the silique opens from the bottom upwards to disperse the seeds, the walls of the fruit fall away and the septum is left behind with the seeds attached. The Brassicaceae family bears this type of fruit.

A **caryopsis** is a fruit produced by grasses. It is a tiny, dry, one-seeded fruit. It does not split open when it is ripe. The fruit and the seed walls are **fused**. A few grasses have fruit that are three to four millimetres long (or a little bit larger), and in most Arctic grasses the fruit is smaller than that.

A **cypsela** is the small, dry, indehiscent, one-seeded, achene-like fruit of the Asteraceae family. In this family, the petals are above the ovary, which is composed of two carpels. In each ovary there is one ovule.

A **samara** is a double-winged, one-seeded capsule. These are similar to the fruit formed by maple trees. Birch plants in southern Nunavut develop these fruit.

Adaptations to the Arctic Environment

Plants living in Nunavut have adapted to survive even though there are many hardships for them in the Arctic—natural selection has allowed plants with suitable characteristics to survive.

The growing season in Nunavut is very short, usually lasting between fifty and sixty growing days. Plants that successfully reproduce are able to do so in this time period or go for years without having to set seed.

Another hardship is, of course, the cold. And although cold temperatures in the winter certainly do influence plant life, the fact that it's cold in the summer also limits plant survival in the North. The summers are short and the average air temperature is about 12°C, mostly due to the cooling effect of the cold seas. A secondary effect of the cold seas is low-lying cloud cover, which absorbs a lot of the solar heat that would otherwise reach the ground.

The wind is strong in both the summer and the winter, and there really is nothing to slow it down. As a result, plants can easily suffer from abrasions that damage their structure after being pummeled by grit in the summer and hard, tiny ice crystals in the winter. This can lead to desiccation or a drying out of the tissues.

The climate in Nunavut is actually desertlike. Precipitation over the winter and summer is not abundant. Many locations on the tundra are quite bare in the winter. Areas where there is good snow cover in the winter and meltwater in the spring are conducive to plant growth and survival. Many plants withstand long periods of intense sun loading, with small leathery leaves.

The soil is low in nutrients, and the process of breaking down matter into nutrients is very slow. Bacteria and fungi that would break down plant matter grow slowly, and there are a limited number of species available to do the job.

Around dumps, Thule sites, and carcasses, additional minerals (phosphorus and nitrogen) are available, resulting in more vigorous plant growth. Water-holding capacity is also very low because of the sandy, gravelly, coarse nature of the soil. The active layer of the soil is generally less than one metre in depth and sometimes as little as fifteen centimetres.

Roots of dwarf trees and shrubs run horizontally in the upper layer of the soil. During the summer, soil thaws from the top down and, as it does so, water in the frozen soil is released. It wicks upwards through the soil and around the roots of the plants growing there. **Taproots** that grow deep into the soil help plants to succeed as well. While areas are sometimes described as polar deserts, they differ from deserts in other parts of the world because lack of water is not the main factor that limits plant growth in the area.

Arctic plants have made many adaptations to survive these harsh growing conditions. One way plants survive is by being perennial, meaning that they live for longer than two years. Parts of their plants, mainly the roots and underground stems, store food over the winter. They use the food reserves to produce new leaves and foods the following season.

On a sunny day, the dark-coloured soil and vegetation creates a microclimate where it can be 30°C warmer than the air temperature. For this same reason, plants that have darker pigmentation are more successful sexually. To take advantage of this heat, many plants grow **prostrate** along the ground, form **cushions**, or have their leaves in **basal rosettes**. These types of growth also reduce wind movement among the leaves and branches and hold in moisture.

In many cases, dark hairs help keep the warm air trapped around the plant. In some plants on exposed terrain, such as poppies, mountain avens, and cinquefoils, the buds can open when they are warmer, close to the ground. Their flowering stems will straighten and become taller as the summer progresses. Another interesting heat-related adaptation occurs in both mountain avens and poppies. Their flowers are shaped like little satellite dishes and follow the sun across the sky, thereby acquiring the most heat from the sun possible for the sexual organs at the centres of their flowers.

Growing close to the ground and in cushions helps to protect the plants from the high winds that blow across the Arctic terrain. Cushions are aerodynamic, and the wind just blows right over them. The low plants are less at risk to both abrasion and desiccation in the winter and summer.

As well, **marcescent** leaves (leaves that stay on the plant even after they die) protect buds and new leaves by forming a layer of insulation over the winter and in the early spring. They release nutrients that may be in the vicinity of the plant and form a thatch that holds water close to the plant.

The strong winds make it challenging for insects to fly all the time, and as a result pollination by insects is decreased. Some Arctic plants have gotten around this problem through asexual reproduction. A few species produce **bulbils**, which are small plant packages that begin new plants once they land on the soil in a good location. Others propagate through **rhizomes** or **stolons** or create new plants at **nodes** where their branches touch the soil and root. Some flowers, such as harebell, blueberries, cranberries, and heathers bloom with their flowers facing downwards, which makes it easier for some insects to enter the flowers without having to fly very high. As added incentive for insects, these flowers have their own microclimates inside, which is much warmer than the air temperatures.

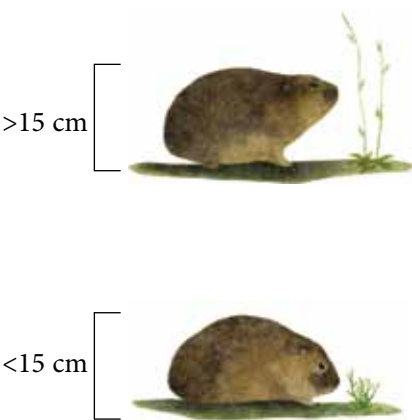
One of the adaptations that makes it possible for some plants to successfully flower and produce seeds over the short summer is the rapid initiation of growth in the spring. To be able to quickly begin growing in the spring requires the ability to photosynthesize right away. Many of the heath plants and the saxifrages retain their leaves over the winter, so that as soon as the snow melts, they are able to begin photosynthesis and grow. They likely run on stored reserves until photosynthesis is possible. Some plants, such as willows, produce buds for both leaves and catkins at the end of the summer and, in this way, give themselves a head start on growing again the following spring.

Natural selection has allowed for a variety of characteristics to persist in plants that live in the harsh Arctic climate. These amazing small plants continue to survive despite many hardships.



HowTto Use This Book

On the lower right-hand side of each two-page spread, you will see the family name in both Latin and English. At the top of the page is the common name of the plant, while right below are the scientific and Inuktitut names.



There is also a drawing of a lemming to go with each plant species. A lemming is about 15 centimetres tall and plants in the Arctic are categorized as being either less than 15 centimetres high or more than 15 centimetres high. If the lemming is looking down on the plant that he's with, then the plant species in question is less than 15 centimetres high. If the lemming is looking up at the plant, then the plant grows to be taller than 15 centimetres. If there are two lemmings, the plant varies greatly in height and can be either shorter or taller than 15 centimetres—you will need to look in the text for the exact range. This is just a quick way of telling if the plant is short or tall, as oftentimes it is difficult to tell how big the plant is from looking at a photograph.

The small map that accompanies each species account is called a range map. The dots indicate where the plant species has been found in Nunavut so far. Plants do not move around like animals, so their range cannot be described as an area. Instead, we can only be sure that a plant grows in a particular location if someone has found the plant and reported it.

Following that are descriptions of the roots/stems, leaves, flowers, and fruit, which will help you to identify and learn more about each plant.



DID YOU KNOW?

At the end of each species account, there is a section called “Did You Know?” This is where you will find interesting facts about the plants.

The words in the text in **bold** can be found in the glossary at the back of the book if their meaning is new or unclear to you.

TRADITIONAL USE

Many plants were once used by Inuit as tea, food, medicine, or tools. Some plants are still used in those ways.

False asphodel

Scientific name: *Tofieldia pusilla*

Inuktitut name: There is no name for this plant in Inuktitut. It is known only as nunarkuluit katingauqtut qaulluqtait ("little **cluster** of flowers that are white or creamy").



ROOTS/STEMS

Tofieldia pusilla is a **perennial** herb, that is, it dies back to the ground in the winter but grows again in the spring. It is less than 15 centimetres high, and has pale brown roots. The stems are **erect**, smooth, and leafless, except for perhaps one poorly developed leaf near the base. These plants can often be found growing in dense clusters.

LEAVES

The leaves occur in a **tuft** at the base of the plant. They are short, flat, and smooth, and they get narrower and narrower until they come to a point at the tip. The leaves can appear like grass or miniature lily leaves. These plants were once classified as being part of the lily family.

FLOWERS

The flowering stems are smooth and noticeably taller than the leaves. The **inflorescence** is dense and can be oblong or globular. There are between four and twelve tiny flowers per inflorescence. Although they are difficult to see without a **hand lens**, there are three **petals** and two **sepals** per flower. Because the petals and sepals look identical, they are sometimes called **tepals**. These tepals are all pale yellow, cream, or greenish. The petals and sepals look identical and thus are hard to distinguish from one another. This is not usually the case in flowers. There are three



Tofieldia pusilla

carpels that make up the centre of the flower. They are joined at the base, but open at the top, each having a separate **stigma**. This is a very simple **ovary**, which is one reason why the *Tofieldia* family is thought to have evolved relatively early.

FRUIT

The fruit of *T. pusilla* is a dry **capsule**, the carpels of which open when the fruit is mature, to release the seeds that are inside. It is straw-coloured and shaped like an egg. There are between six and eighteen tiny (0.5- to 0.6-millimetre), smooth brown seeds per capsule.

DID YOU KNOW?

These delicate plants are found on Baffin Island, Southampton Island, and on the mainland. On Baffin Island, there is another tiny member of this family, *Tofieldia coccinea*, which is similar to *T. pusilla*. Its leaves are a little shorter and narrower, but the main difference is the colour of the flowers. *Tofieldia coccinea* has a dark, purplish burgundy inflorescence. If you are out looking for *Tofieldia* on Baffin, look carefully, and you may be able to spot these two dainty plants!

Tofieldia plants are often found on snow patches or in relatively barren areas where there is limited competition from bigger plants.



Tofieldia coccinea



Tofieldia coccinea

Alpine fescue

Scientific name: *Festuca brachyphylla*

Inuktitut name: Ivilsugait

Alpine fescue is the most widespread fescue on the Arctic Islands.



ROOTS/STEMS

All fescues are **perennials**, and can grow anywhere from 5 to 25 centimetres high. *Festuca brachyphylla* often appears to be greyish because of a thin layer of wax on the outside of the leaves. The **erect culms** are smooth and usually without any hairs. The closely related species, *F. baffinensis*, has dense, curly, white hairs at the top of the culm below the flowers.

LEAVES

The leaves grow in a **tuft** at the base of the plant. The leaves are composed of a **sheath** that surrounds the stem and a **blade** that develops at the top of the sheath. They are 20 to 100 millimetres long, and can sometimes grow to be as long as 200 millimetres. They are narrow and look even narrower because they are folded in the middle.

FLOWERS

The flowerhead is spike-like, and it is made up of many small **spikelets** that have stalks (**pedicels**) at the base. The spikelets are grouped tightly together. At the base of each spikelet are two modified **bracts** that enclose and protect the developing spikelet. Inside these there are two to four flowers. Grass flowers don't have **petals** and **sepals**. Outside each flower there are two protective bracts. The longer protective bract (**lemma**) has a bristle-like **awn** on the tip. Inside each complete flower there are three **anthers** and an **ovary**—the flowers are bisexual, unlike those of most sedges.

FRUIT

The fruit of alpine fescue is small (2 millimetres), dry, and one-seeded. The fruit, a **caryopsis**, is like a tiny grain of rice. It does not split open when it is ripe. In the South, fescues are sometimes used as forage for livestock and wildlife. Alpine fescue plants are small and, although widespread in Nunavut, do not provide much plant biomass for animals. When they are available they are eaten by caribou, musk oxen, and hares.

DID YOU KNOW?

If you find individual plants that are reddish, this is an indication that there is more nitrogen in the soil than in their usual environments. This could be either from human habitation (sewage) or because they are near fox dens, owl perches, or other animal habitats.

This plant is one of the first grasses to flower and as a result it usually sets seeds in a growing season. It does well colonizing disturbed sites—when the seeds reach disturbed ground, they are often successful in growing into new plants before other species can start to grow there. If seeds of other species get caught in the fescue plants, they may start to grow in the shelter that the fescue plants provide. Often the second species to arrive are bigger plants and come to overshadow the fescues so that the fescue plants die out. This process is called plant succession.



Arctic bluegrass

Scientific name: *Poa arctica*

Inuktitut name: Iviit, ivisuka, ivitsuskaka

ROOTS/STEMS

Poa arctica is a **perennial** that has both **fibrous** roots and **rhizomes**. These underground stems may grow quite a distance before pushing up to develop a new **tuft**. The underground stems intertwine to form a mat. Such mats, called turf, are important for lawns in the South. This grass usually grows between 10 and 30 centimetres high. The stems are round or oval if you roll them between your thumb and index finger.



LEAVES

The leaves are typical grass leaves. They have a bottom part called a **sheath** that surrounds the stem. At the junction between the sheath and the top surface of the **blade** there is a transparent flap of tissue called a **ligule**. Nobody knows why it is there, but the presence of this structure is useful in identifying a plant as a grass. At the top of the sheath, the leaf flattens out and becomes the blade, which is almost always longer than the sheath. The blades are thin, straight, and folded. The centre of the leaf sports a main big **vein** with large, colourless cells on either side. These cells can take up water, swell, and cause the leaf to lie flat.

FLOWERS

The flower **clusters** of this species in Nunavut only have a few **spikelets** on widely spaced branches. The **pedicels** are each at about a 90-degree angle to the stem. Characteristically, the lower branches are in pairs, with one branch having two spikelets and the other only one. At the base of each spikelet there are two **bracts** (**glumes**), with the longest bract being half the length of the spikelet. This is useful in distinguishing bluegrasses from goosegrasses.

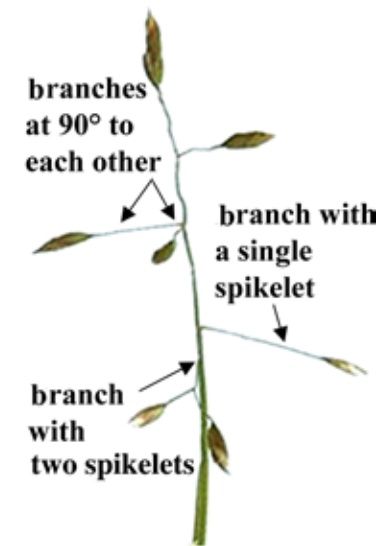
Each spikelet has three to six bisexual **florets**. A pair of bracts (**lemma** and **palea**) surround each flower, inside which there are three **anthers** and an **ovary** with two fluffy **stigmas**.

FRUIT

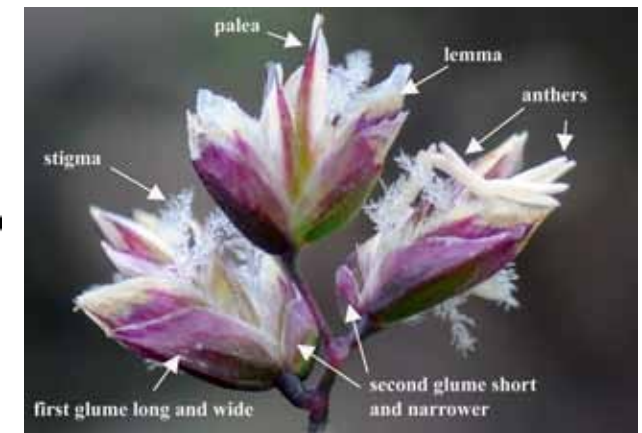
Like other grasses, the fruit of *P. arctica* is a dry, one-seeded **caryopsis**. It is very small, at only 2 to 2.5 millimetres long. This type of fruit does not split open when it is ripe. In fact, the caryopsis is often not fully mature before the snow flies. It will mature over the winter and hopefully be ready to grow the following spring.

DID YOU KNOW?

Bluegrasses respond well to fertilizers. This is evident on Kekerten Island, in Cumberland Sound, at the site of an abandoned whaling station. A turf of Arctic bluegrass thrives due to the additional nutrients in the soil in an area where the whales were once hauled ashore and processed. The rest of the site is mostly dry Arctic tundra.



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Foxtail grass

Scientific name: *Alopecurus magellanicus*

Inuktitut name: Ivi



ROOTS/STEMS

Alopecurus magellanicus is a **perennial** that is widespread in the Eastern Arctic. It grows between 15 and 30 centimetres high. The plants have **rhizomes**, as well as smooth, **erect** stems. In grasses, the stems are called **culms**.



LEAVES

Its leaves are smooth, short, and flat. The **sheaths** are obviously puffed out so that they fit more loosely around the developing flowers. The sheaths are the lower parts of the leaves on a grass that wrap around the stem.

FLOWERS

The flowers are tiny and born close together, almost directly on the main stem of the **flowering head**. This results in a soft, compact **inflorescence** that reminds people of a foxtail, hence its common name. The **cluster** is dense, oblong, and in the case of *Alopecurus magellanicus*, very compact. The flowers sometimes have large purple **glumes** that make the whole head look purple. Each flower in the **panicle** has a tiny, straight bristle called an **awn**. These white awns make the head look fluffy when it is young. Later in the season, the dried-up remains of **anthers** make the head look yellowish or reddish.

FRUIT

The fruit of the foxtail is an **indehiscent caryopsis**. This species grows really well in nitrogen-rich terrain—somewhere where there are things that are rotting. Thus you can see it frequently at the base of bird cliffs because there are a lot of feces there, or near human habitations because of the sewage waste.

DID YOU KNOW?

Foxtail **spikes** are readily recognizable and, in areas of little vegetation, as on Melville Island, they can be spotted from a low-flying helicopter and used to tell the difference between relatively dry tundra and other areas.

In southern Greenland, foxtail grass grows up to 1 metre high and is harvested as a hay crop to feed animals in the winter.

TRADITIONAL USE

Did you ever see the old Qarmmaqs in Avvajja? Well, my recollections started when we used to live in those. In late fall they would clean them up by removing the old gravel and cleaning up the inside of the Qarmmaq, and they would remove some sod blocks that were broken and fix them up. Then they would haul in some new gravel and put up the frame and cover it, then use some grass to prevent any drafts that may occur around the sod block and the covering. I remember my grandmother Ataguttaaluk used to use her ulu to cut grass—I used to help her in taking the stuff to the Qarmmaqs.

Catherine Arnatsiaq, interviewed and translated by Leah Otak (January 5, 1990)



Glaucous bluegrass

Scientific name: *Poa glauca*
Inuktitut name: Kilirnaujait



ROOTS/STEMS

The Latin name *glauca* refers to the pale bluish colour of the plant. This is the result of a waxy coating on the leaves, thick enough to cloud over the green colour underneath. Such wax helps the plant from drying out. *Poa glauca* is a **perennial**, and can grow anywhere from 7.5 to 30 centimetres high. Glaucous bluegrass has **fibrous** roots but no **rhizomes**, unlike Arctic bluegrass. The stems are stiff and **erect**, and have no leaves above the middle. As a result, the plants look like tight bluish **tufts** on the tundra.



LEAVES

The leaves occur mostly in a tuft at the base of the plant. Leaves may grow along the stem in an **alternate** pattern. The **blades** can be from 20 to 50 millimetres long and are usually pressed up close to the stem. The blades are smooth and can be flat or folded.



FLOWERS

The **flowering head** is usually a **panicle**. The branches point upwards and spread out at an angle of less than 90 degrees to the stem. The **spikelets** each contain three flowers. The **glumes** are all more or less of equal width.

FRUIT

The fruit is a dry, one-seeded **caryopsis**. In this species, it is very tiny and measures only 0.6 to 2 millimetres long. In other species of grass, the fruit can be larger. For example, in wheat, rye, and corn, this is the part of the plant that is ground into flour. This grass rarely sets fruit in the High Arctic because the growing season is too short.

DID YOU KNOW?

This is a very variable species—it looks different depending on where it grows. It has confused **botanists** who have often collected samples to be identified later with some help. As a result, there are hundreds of pressed specimens in storage in various **herbaria**. This has allowed researchers to study the numerous specimens and see the very gradual changes that occur in plants of this species when they grow in different habitats.



Susan Aiken



Poaceae - Grasses

Creeping goosegrass

Scientific name: *Puccinellia phryganodes*

Inuktitut name: Nakiruat



ROOTS/STEMS

As are all Arctic grasses, *Puccinellia phryganodes* is a **perennial**. It is an **alkali** grass, which means that it can grow in saline (salt) habitats. These plants can grow from 1 to 20 centimetres high, but most of the growth is horizontal, and not upwards. They have many **stolons**, which grow in every direction, becoming tangled and **matted** together and forming large areas of grass meadows. The stolons remain on the ground and become grey ghosts when the snow melts.

LEAVES

Most of the leaves occur on the stolons in **alternate** fashion. The leaves on the flowering stems are rolled and stiff, while the leaf **blades** along the stolons are longer and not as stiff. All the leaves are smooth.

FLOWERS

This plant rarely flowers, but when it does, the **flowering head** is a **panicle** with only a few oblong **spikelets**. There are three to six **florets** per spikelet.

Flowering stems in this species are most commonly found near the high tide line, especially if the plant is growing beside a rock. The spikelets in creeping goosegrass have **glumes** that are less than half the length of the spikelet. This is an excellent way to distinguish goosegrasses from bluegrasses.



FRUIT

The fruit is never, or almost never, formed. This species is thought to be a sterile **hybrid**. In the flowers that develop, the **anthers** are mere shells without any pollen inside. The **ovary** produces an **ovule**, but it is usually not fertilized, so no fruit is formed. If it is formed, it is a dry, one-seeded **caryopsis**. The plant is spread around the Arctic by ice rafts during high spring tides. During break-up, when the ice is roughly pushed against the shore, chunks of creeping goosegrass meadow get dug up and carried away to another location on the ice.

DID YOU KNOW?

Puccinellia phryganodes is most often found in saline meadows or marshes by the seashore. When the plants are sprayed by saltwater, and the salt dries on the leaves, the plants turn brownish red or orange. If freshwater from a constant source washes off some of the salt between tides, the washed plants return to their bright green shade. This makes for a colourful experience when walking on the beach by mats of *P. phryganodes*.



Alpine holy grass

Scientific name: *Hierochloë alpina*

Inuktitut name: Ivikutaat



ROOTS/STEMS

Hierochloë alpina is a true grass that can be anywhere from 7 to 40 centimetres high. It is a **perennial** herb. Alpine holy grass has **rhizomes** that connect one plant to the next. This grass grows in loose **tufts**. The **culms** grow straight up and are smooth.



LEAVES

The leaves can either be flat or rolled inwards, and they grow in a tuft at the base. The **sheaths** are distinctly purple.

FLOWERS

The **flowering heads** are made up of many **spikelets**. Each spikelet is on a separate stalk in a loose formation. It is in these spikelets that the **florets** are found. The florets are protected by two specialized leaves called **glumes**. In *H. alpina*, there are three florets per spikelet. The bottom two are male florets only, while the upper one has both male and female parts. The glumes may be reddish, and the whole flowering head shines a bronze colour in the sunlight, making it easy to identify. An **awn** arises from the top of the **lemma** of each of the two lower male flowers. The lemma of the female flower does not have an awn.



FRUIT

The fruit is a small (2.8-to 3-millimetre), dry, one-seeded **caryopsis**, which does not split open when the seed is ripe. Rather, the fruit falls to the ground and when the material that is packed around the seed gets wet, it keeps the seed watered and gives it extra nutrients to start growing with in the spring.

DID YOU KNOW?

In northern Europe, *H. odorata*, a close relative to this species, was gathered and taken into churches on saints' days, which is how it got the name holy grass. The sweet-smelling chemicals in the grass acted as an air freshener. The southern species of holy grass has a stronger smell than the Arctic species, which does not have as long a growing season.



Polar grass

Scientific name: *Arctagrostis latifolia*

Inuktitut name: Iviit, ivisuka, ivitsuskaka



ROOTS/STEMS

Arctagrostis latifolia is a **perennial herb** that can grow between 10 and 95 centimetres high, and is commonly found all over the Arctic. Polar grass has **rhizomes**.



LEAVES

The **culms** of this grass are smooth and the leaves are distributed in an **alternate** pattern. This means that the leaves do not grow in pairs—one leaf grows on one side of the stem, and then another leaf grows a little further up the stem on the other side. The leaves are rough to the touch (**scabrous**) on both the top and the underside. The **blades** are short, broad, and flat.

FLOWERS

The **inflorescence** is a loose, dark purple, irregularly branched **cluster**, with flowers at the ends of its branches. The **panicle** is dense (its shape is **lanceolate** or oblong) if the plant is in a cold habitat, but **diffuse** if the plant is at a warmer site. For instance, if the plant is growing in the shelter of a rock on a south-facing slope, it may be considerably taller and have a more open inflorescence than another plant growing on the north-facing, unprotected side of the rock. You may have noticed that if you crouch near a rock on a sunny day, the temperature is considerably warmer than when you stand up. These microclimates play an important role in helping Arctic plants grow.



FRUIT

Polar grass has a small (1.7 to 3 millimetres), dry, one-seeded **caryopsis**. It differs from an **achene** in that the single seed is **fused** to the wall of the fruit. The fruit does not split open when it is ripe (it is **indehiscent**). If the seeds are not ripe yet, and if birds or lemmings do not eat them, they will continue to ripen under the snow and be ready to grow again the following spring.

DID YOU KNOW?

Grass inflorescences come in different shapes. Imagine that you are a new *Arctagrostis latifolia* inflorescence. If you stand with your arms above your head and your palms together, that is what this early grass inflorescence looks like. If you stand with your arms up in a rather large “V” with your head at the centre, then you can imagine what *A. latifolia* looks like later in the season when its inflorescence starts to relax.



Sea lyme grass

Scientific name: *Leymus mollis*

Inuktitut names: Iviit, ivisuka, ivitsuskaka, iviksukat



ROOTS/STEMS

These plants are **perennials**. The above-ground portion dies off in winter. The plants grow again the following spring. Plants in southern Nunavut may grow as tall as 100 centimetres high. Those towards the northern end of the species' **distribution** in Iqaluit may be 15 to 20 centimetres high. This grass grows on sand dunes and is described as a sand binder because the plants thrive in the blowing sand on beaches. They only grow naturally close to beaches. Below the ground surface, the plants have long **rhizomes**. Each season a new layer of rhizomes develops from the underground stems that have overwintered, and from that a **tuft** of the new season's leaves grow. The straw from the previous season's growth and the leaves from the current season's growth trap blowing sand. These plants thrive on the stimulation of blowing sand.



LEAVES

The leaves grow in a tuft at the base of the plant. The **sheaths** are **fused** in the lower part and have a fringed ligule. The **blades** are rolled when the leaves are in **bud**. They grow to be 65 to 170 millimetres long and 2 to 9 millimetres wide. The surfaces are smooth and sometimes covered with wax, which makes them appear bluish. The blades have a firm, stiff texture. They are pliable when fresh. When dry, they are straw-coloured.

FLOWERS

The **inflorescence** is a dense, **linear spike** from 5 to 15 centimetres long. At each **node** of the flowering stem, there are usually three **spikelets**, except at the very top, where there is just one. Each spikelet is 10 to 20 millimetres long and 2 to 3.5 millimetres wide. There are usually two to three flowers per spikelet. The **glumes** at the base of each spikelet are 9.5 to 17 millimetres long and hairy. There are no **awns**.

The flowers are bisexual. The three **anthers** are 4.5 to 7 millimetres long and are easily seen when they are exposed. The **ovary** is composed of three **carpels**, two feathery **stigmas**, and an **ovule**.

FRUIT

The dry **caryopsis** is 7 to 10 millimetres long, which is long for an Arctic grass fruit.

DID YOU KNOW?

When this grass is found away from the beach, it is usually beside a road or in the gravel of a house platform. This indicates that it was moved there in the gravel and sand brought from a nearby beach.

TRADITIONAL USE

In the Canadian Arctic, Inuit use *Leymus mollis* for basket weaving. This tradition nearly died out but has been revived. There are some spectacular baskets at the Legislative Building of Nunavut. Traditionally, the leaves of the baskets were kept in place with thin strips of sealskin. Today, embroidery thread is often used.

After the plants began to wither, they were often made into baskets in Nunavik and woven into mats.



Poaceae - Grasses

Semaphore grass

Scientific name: *Pleuropogon sabinei*

Inuktitut name: Unknown

ROOTS/STEMS

Pleuropogon sabinei is one of the few grasses that grow in shallow water. Its **rhizomes** can be long or short, and are buried in the soft mud. The plant leaves are killed when the water freezes and begin growing the following spring with delicate, floppy, underwater leaves. When the stem reaches the water's surface the plant produces firm, stiffer leaves that stand up above the surface. The plants may grow between 4 and 30 centimetres high. These stems are smooth, round, and hollow. They have no edges when you roll them between your fingers. At the base of the flowering stems, a plant that is growing in soft mud sometimes puts out roots from the lower **nodes**. These help support the part of the plant that is above water.

LEAVES

The leaves grow up the stem in an **alternate** fashion. The thin, straight **blades** are between 20 and 230 millimetres long. The underwater leaves are flat, while the leaves that grow above the surface may be flat or folded. Both surfaces, on all leaves, are smooth.

FLOWERS

The **inflorescence** has a main stem with widely spaced, long, purple **spikelets**. They droop in various directions on their short, flexible stalks. Each spikelet is composed of six to ten small flowers, which is the largest number of any Arctic grass. Each flower has a **lemma** and a **palea**. The **awns** that are sometimes visible in a spikelet are at the top of the two folds in the palea, which is unusual in grasses.



Susan Aiken



When *P. sabinei* is in flower, an exposed pair of fluffy **stigmas** trap pollen that may be blowing in the wind. When the stigmas dry up, **anthers**, in the same flower, mature and shed pollen. The maturing of the male and female sexual organs occurs at different times, to encourage **cross-pollination**.

FRUIT

Semaphore grass has a small (2.5 millimetres), dry, one-seeded **caryopsis**. It is **indehiscent**. The fruit is smooth and similar to a very small grain of rice.

DID YOU KNOW?

Semaphore grass grows in shallow ponds or lakes, or even slow-moving streams. It is an aquatic plant. The leaves that attach to the stem underwater float in the water around the plant. Semaphore grass got its name from early sailors who used semaphore signals (with flags) to communicate, before radio or television. They thought the different positions of the spikelets resembled the different positions of the flags used in semaphore.



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Spiked trisetum

Scientific name: *Trisetum spicatum*

Inuktitut name: Iviit iviksugait



ROOTS/STEMS

Trisetum spicatum is a **perennial herb**. In the Arctic, it grows between 10 and 40 centimetres high. Its **culms** are **erect** and hairy, and they can be solitary or thickly grouped together.

LEAVES

Most of the leaves grow in a **tuft** at the base of the plant. The leaves that grow up the stem do so **alternately**. The leaf **blades** are between 17 and 85 millimetres long. They are long and thin and can be either flat or have rolled edges. The leaves and the stems are covered with silky hairs, which give the plant a soft feel.

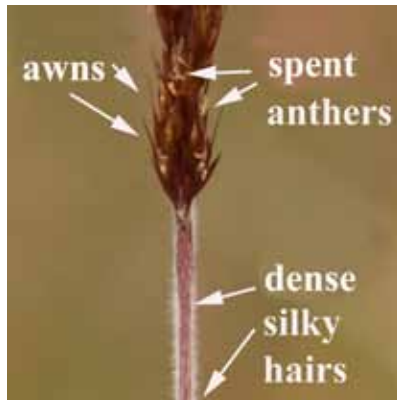
FLOWERS

The flower **cluster** is a dense, dark purplish brown **panicle**. The panicle is made up of **spikelets** that contain the small flowers, called **florets**. There are two to three florets per spikelet. The whole flower cluster looks fuzzy because of the long, bent, and twisted **awns** that start from near the tip of the fold in the **lemma** and extend beyond the flowers.

FRUIT

The fruit is a small (2.3 to 2.7 millimetres), dry, one-seeded **caryopsis**. This tiny, wheatlike fruit is **indehiscent**. In a caryopsis, the fruit wall and the seed are **fused**, making the fruit and the seed akin to a single unit.

In a caryopsis, what was the **ovary** wall in the flower expands and fills up with starchy food reserves. What was the **ovule** develops into the seed and the beginning of a new plant.

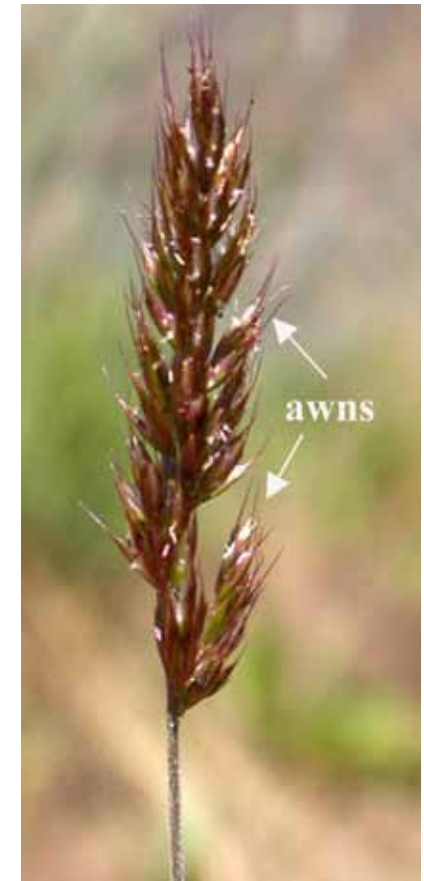


DID YOU KNOW?

Trisetums are fairly tasty grasses, and in alpine regions they are important food for deer and goats.

Trisetum is one of the first plants to grow on disturbed ground. Its dense tufts are good for collecting blowing soil and plant seeds, so it provides a small microclimate in which other plants can become established more easily.

The true grasses are the most economically important family in this group. These include all the true grains (rice, wheat, corn, and so on), the pasture grasses, sugar cane, and the bamboos.



Arctic cotton grass

Scientific name: *Eriophorum scheuchzeri*

Inuktitut name: Kanguujaat (South Baffin), pualunnguat (North Baffin), kumaksiutinnguat (Kinngait)

ROOTS/STEMS

Arctic cotton grasses are **perennials**. The name suggests that they are grasses, but this is not the case; rather, they are considered to be sedges because of their fruit structure. *E. scheuchzeri* plants grow from 10 to 40 centimetres high. This particular cotton grass has thin **rhizomes**. Because of the rhizomes, each head is born some distance from the next head, which is different from the other single-headed cotton grass (*E. vaginatum*), which has no rhizomes. The **culms** are usually solitary and soft, not stiff, but they still stand straight up.

LEAVES

The leaves grow in a **tuft** at the base of the plant, although each plant only has a few leaves. The **sheaths** are greyish or yellowish brown. The **blades** are between 30 and 80 millimetres long and usually grow close to the stem. The leaves are straight and thin and can be flat or folded. They are smooth and get narrower until they come to a point at the tip.

FLOWERS

The smooth flowering stems are much taller than most of the leaves. The uppermost leaf is below the middle of the stem. It may seem funny to say, since we all think of the cotton stage of this sedge as the flower, but the flower **cluster** is arranged in a **spike**. The spike is located at the end of the flowering stem and both sexes are in each **floret**. The reduced, leaflike **bracts** at the base of the flower spike are flat and black. The **flowering heads** when fully mature and ready to disperse the fruit are wider than they are high, and from a distance look like shiny white balls. The flowering heads of all other cotton grasses when mature are narrower than they are high and look oval from a distance. Silky white bristles replace both the **petals** and **sepals** of these flowers. These bristles are tiny when the male and female parts ripen and **cross-pollinate**. If they were long at this stage, they would get in the way of pollination. They become long and obvious after the flowers have been fertilized and the seeds are forming.



FRUIT

When the plant is in fruit, the **inflorescence** becomes fluffy, white, and round. Unlike other sedges, the fruit is not surrounded by a **perigynium**. Instead the bristles surround the fruit, which is a dry, one-seeded, golden brown **achene**. The fluffy bristles help carry the seeds so that they are dispersed by the wind once they are ripe. These plants grow mainly in wet meadows, in marshes, or around the edges of ponds.

DID YOU KNOW?

Eriophorum scheuchzeri grows all over the Arctic Islands and is recognized by most people who live in the Arctic. However, there is another species that has a single cotton grass head. *Eriophorum vaginatum* occurs on Baffin Island, Southampton Island, Victoria Island, and on the mainland, and it could be mistaken for *E. scheuchzeri*. The easiest way to tell the two species apart is to remember that *E. scheuchzeri* may grow extensively over large areas, but it does not grow in clumps. *E. vaginatum*, on the other hand, grows in large, tightly packed clumps.

TRADITIONAL USE

Kanguujait, the Inuktitut word used in North Baffin, means “what looks like snow geese.” A mixture of Arctic cotton grass and charcoal was once used to help heal the umbilical cord of a new baby. Also, warts were treated with oil gathered from the stem of the cotton grass in the spring. Cotton grass was also mixed with moss and used as a wick in the qulliq, or traditional seal-oil lamp. The fluffy flower head of pualunnguat can be eaten to relieve a sore throat, and in the past it was mixed with rancid seal fat to soothe aches and pains.



Common cotton grass

Scientific name: *Eriophorum angustifolium*

Inuktitut name: Puallunnguut



ROOTS/STEMS

This **perennial** sedge is usually between 15 and 30 centimetres high. Its roots can be colourless or pale brown. The plants have **rhizomes**, where extra food reserves are stored over the summer to help them start growing again the following spring. They also have smooth, solitary **culms** without any branches. Unlike other sedges, which have stems with edges, the stems of common cotton grass feel round if you roll them between your fingers.



LEAVES

The leaves are well-developed along the stems. The smooth **sheaths** are greyish brown or pale orange, and break down slowly. They do not form an obvious build-up of dead leaves at the base of the plant. The thin, straight **blades** are between 50 and 250 millimetres long.



FLOWERS

The smooth flowering stems are taller than the leaves. The uppermost leaf usually grows just above the middle of the stem. There is also an obvious leaf or leaflike structure that occurs just below the **inflorescence**. Early in the growing season, cotton grass plants look rather different, as there is no evidence of the cotton. The **flowering head** is a tight **cluster**. The flowers are bisexual. The threadlike, white female **stigmas**, growing from the tops of the **ovaries**, appear first from the many flowers in the **spike**. When they wither and can no longer receive pollen, the yellow **anthers** in the flowers of the same spike emerge. This prevents the flowers from fertilizing themselves. Once the anthers have shed their pollen and the fruit is developing, the soft bristles or hairs that come to constitute the “cotton” begin to develop. The flower cluster is made up of two to five spikes, with each one on a **pedicel**. Although the spikes are **erect** when they are young, they droop as they mature.

FRUIT

The fruit is not surrounded by a **perigynium** as in other sedges, but instead is surrounded by the bristles that have developed. The bristles help carry the dry, one-seeded, dark, triangular **achene** on the wind to its new home, where it will grow into a new plant the following spring if the conditions are right. The achene is a product of a single ovary and contains one black or brown seed.

DID YOU KNOW?

Puallunnguut is the Inuktitut name for *Eriophorum angustifolium* and it means “imitation mittens.” The name tall cotton grass applies farther south, where the plants grow to 1 metre tall.

TRADITIONAL USE

We would always have to prepare things; for instance, if we were not going to go out hunting with our husbands on extended trips, we would first shred the plants that would be used for wicks on the qulliq. We would add some fat and mix it in the wick material, then put it in a container for the hunters to take along on their hunting trip. If we were to go along on a hunting trip it was up to us to prepare it properly, otherwise we would end up with wicks that burned too fast so that the flames would tend to be too high and burn too much.

Rhoda Qipanni, interviewed by Lucie Tapardjuk (March 17, 1992)



Membranous sedge

Scientific name: *Carex membranacea*

Inuktitut name: Kilirnait ajjikasangit iviit



ROOTS/STEMS

Carex membranacea is a **perennial** herb. It is usually more than 15 centimetres high and can grow up to 40 centimetres high. The **culms** are stiff, thick, and rough to the touch. If you roll the stems between your fingers you can feel the angles, since these stems are triangular. The roots are yellow or pale brown. This sedge has thick and scaly **rhizomes**. As a result, a whole big clump or area of this sedge may be made up of only one plant.



LEAVES

The leaves grow in **tufts** from the underground stem. Each tuft has six to eight leaves. Also at the base of the plants are remnants of old leaves and their purplish **sheaths**. The **blades** are from 50 to 150 millimetres long. They have a conspicuous ridge along their length called a **keel**. The blade shape is long and narrow, and it can be flat or the edges can be rolled under. The edges of the leaves are rough to the touch.

FLOWERS

The flowering stems are a little longer than the leaves. There is a specialized leaf or **bract** that grows just beneath the **inflorescence**. It has no sheath and it can be longer than the inflorescence. The overall inflorescence looks like a jointed **spike** made up of three to five smaller spikes. The last spike at the top is made up of male flowers, which have yellowish, threadlike **anthers**. These anthers make the spike look like it has a weird hairdo after the pollen has been shed from them.

Each female flower has a small brown bract at the base. Inside this is a special structure called a **perigynium**. In this species, it is **fused** at the top



Susan Aiken

except for a small opening through which the thick, short **style** protrudes and divides into three **stigmas**. The perigynia are purplish black and inflated so that when the flowers set seeds they are tightly squished together on the spike.

FRUIT

The perigynia are 2.5 to 3 millimetres long and spread out from the stem of the spike when they are mature. Inside is a smooth, yellow **achene**. The triangular achene does not completely fill the perigynium, but the walls remain inflated. The achene is dry and one-seeded and does not split open when the fruit is mature.

DID YOU KNOW?

Russet sedge, *Carex saxatilis*, looks very similar to membranous sedge. You can tell them apart, though, because *C. saxatilis* has two stigmas when in flower, unlike *C. membranacea*. When in fruit, russet sedge's perigynia are shiny, black, and slightly crumpled. This is because the achene inside does not fill the perigynium, and so the wall creases around it.



Short-leaved sedge

Scientific name: *Carex fuliginosa* subsp. *misandra*

Inuktitut name: Kilirnait



ROOTS/STEMS

Carex fuliginosa is a **perennial** that grows between 15 and 25 centimetres high. *Carex fuliginosa* has pale brown roots, which in a suitable substrate grow much longer than the plant is high. It has smooth, thin, almost threadlike **culms**. If you cut across the stems, or try to roll them between your fingers, you can tell they are three-sided.

LEAVES

The leaves are tightly clustered in a **tuft** at the base of the plant. They are thin, green, and rough to the touch. The leaves are relatively short compared to the flowering stems, with the **blades** reaching from 30 to 80 millimetres long. The blades are also curved at the tips, so that the plant looks as though it has slightly curly leaves.

The **sheaths** stay attached even after their growing season is over, forming an obvious build-up at the base of the plant. This dead build-up helps to protect the delicate new plants when they come up the next season.

FLOWERS

The flowering stems are much taller than the leaves. The **flowering head** has a **bract** at its base, and is composed of three to four **spikes**. These spikes are attached to the stems by long stalks, which make the spikes hang from the stems except early in the season and in dwarf plants, where they are upright.

There are many individual flowers in each spike and each flower has a small bract at the base. The male flowers grow at the bottom of the uppermost spike. The position of the male flowers in a sedge **inflorescence** is an important characteristic for distinguishing species. These male flowers are only obvious when the **anthers** are exposed to shed pollen, and after they have done so.

Inside the bract of the female flower is a special structure called a **perigynium**. In this species, the **style** does not reach the top of the perigynium before it divides into three **stigmas**. These develop a sticky, textured surface onto which windborne pollen of the same species gets trapped.

FRUIT

The fruit is a dry, one-seeded **achene** surrounded by a perigynium. The achene does not fill the upper part of the perigynium. The egg-shaped achene is small, measuring between 1.5 and 2 millimetres long and only 0.9 to 1 millimetres wide. It is usually black or straw-coloured, and has a smooth surface.

DID YOU KNOW?

Carex fuliginosa is found just about everywhere in the Arctic. It grows both in wet habitats and in very dry, barren tundra. The other common sedge of such habitats is nard sedge, *Carex nardina*. The inflorescence of this species is just a single spike with male flowers on top and a few female flowers underneath.



Water sedge

Scientific name: *Carex aquatilis* subsp. *stans*.

Inuktitut name: Kilirnait



ROOTS/STEMS

Carex aquatilis is a **perennial** herb. It grows to be 10 to 50 centimetres tall. These plants grow in **tufts** connected by **rhizomes** so that you often find several plants growing near each other.

Water sedge's stiff, **erect** stems are triangular if you cut them across to have a look, or if you roll them in your fingers, you can feel the edges.



LEAVES

The leaves grow in a tuft at the base of the plant and also along the stems. The **sheath** remains attached for longer than normal, usually breaking down after more than one year. This makes for a noticeable accumulation of old, reddish brown leaf parts at the base of the plant. The **blades** are from 30 to 100 millimetres long. They can be straight and flat, or rolled backwards. The edges of the blades are rough to the touch.

FLOWERS

The flowering stems, which have leaves, are usually taller than the **basal** tuft of leaves. As well, there is a leaf that starts at the base of the **inflorescence** and grows past the top of the flower **spikes**. This particular leaf has no sheath.

The inflorescence of *C. aquatilis* is composed of two to five spikes. The uppermost spike has only male



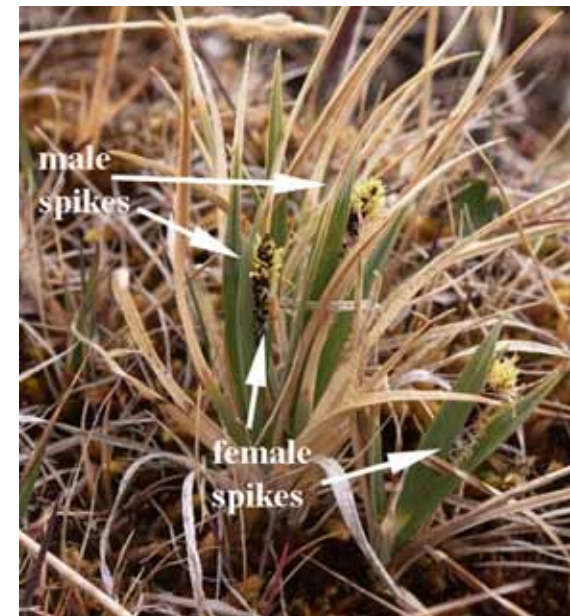
flowers. Each flower grows out of a **bract**. The male flowers have three **stamens**. The other spikes on the plant are made up of female flowers. These grow out of the same kind of bract, but they are made up of a forked **style**, which looks like a tiny piece of string and sticks out of a **perigynium** that holds the fruit. The green sides of the perigynia are visible around the outer edges of the bract that is underneath it.

FRUIT

The single fruit that develops inside the perigynium is an **achene**. It is two-sided and somewhat flattened. The perigynia are 2.3 to 2.8 millimetres long. The achenes inside are even smaller and can only be seen by removing the perigynium, which is best done under a microscope. This type of fruit is **indehiscent**.

DID YOU KNOW?

Carex aquatilis is dominant in some meadows, especially near the edges of small ponds. Muskoxen and lesser snow geese often graze it.



Bog rush

Scientific name: *Juncus triglumis* subsp. *albescens*

Inuktitut name: Nunarakuluit malikaat ajjikasangit
("One that looks like mountain avens")

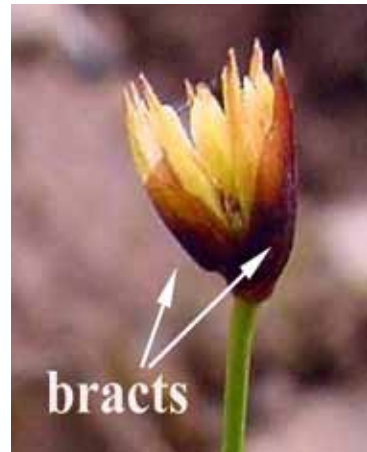


ROOTS/STEMS

Like so many other Arctic plants, the bog rush is a **perennial** herb. These small plants are usually less than 15 centimetres high. Bog rush grows in small, compact **tufts**. The stems are stiff, smooth, and **erect**.

LEAVES

The leaves grow in a tuft at the base of the plant. Just like grasses, rushes have **sheaths**, and in the case of *Juncus triglumis* subsp. *albescens*, the two sides of the sheath are not **fused** together. The **blades** can be anywhere from 15 to 80 millimetres long, and they come to a tender point at the tip.



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FLOWERS

The flowering stems are straight, hollow, and without leaves, until just below the **inflorescence**. **Bracts** below the flowers are long, usually brown, and conspicuous. They can vary in length from longer than the flowers to the same length as, or shorter than, the flowers. The **flowering head** is composed of three to five flowers side by side. It could easily be mistaken for a single flower. The **petals** can be yellow or brown and are longer than they are wide. Just like the petals, the **sepals** can be either yellowish or brown.

FRUIT

The remains of the sepals and petals surround the dry fruit of the bog rush. It is a **capsule** that is shaped like a football, but with a pointed tip. The capsule opens to release the yellowish or brown seeds when they are ripe. There are approximately 10 to 20 seeds per capsule.

DID YOU KNOW?

One way to tell the difference between rushes, sedges, and grasses is that rushes have three brown sepals and three brown petals. The leaves of the rushes have no ligule between the sheath and the blade, while grass leaves do. You can also examine the stems carefully.

Few grasses or rushes have solid stems. So if you find a grasslike plant and you cut across the stem to find that it is hollow, then in all likelihood, you have found a grass or a rush. If, on the other hand, the stem is solid, you have a sedge. If you take the stem and roll it between your fingers and it rolls easily because it is round, this means you have found a rush or a grass. Sedge stems have angles. Just remember, "Sedges have edges." Of course, plants are never simple and there are exceptions. For example, cotton grass is actually a sedge with a round stem.



Chestnut rush

Scientific name: *Juncus castaneus*

Inuktitut name: Unknown



ROOTS/STEMS

Juncus castaneus is a **perennial** herb. These rushes are usually between 10 and 30 centimetres high, but can sometimes grow to 50 centimetres. They have **fibrous** roots as well as underground, horizontal **rhizomes**. The **culms** are **erect**.



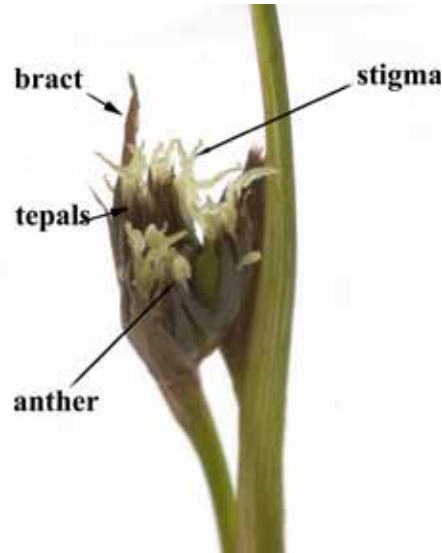
LEAVES

The plants, composed of several leaves, grow singly along the rhizomes, which may grow in any direction. This results in a loose **cluster** of plants that look unlike plants of *J. articus*, on which the underground rhizomes grow in straight rows. The leaves grow mostly at the base of the plant. The straight leaf **blades** can be quite long, at 30 to 100 millimetres, sometimes even 250 millimetres.

FLOWERS

The flowering stems are round and conspicuously taller than the leaves. There is a leaf below the **inflorescence** that may be 1 to 6 centimetres long.

Each inflorescence has three to ten flowers. Each flower has three brown **sepals** and three brown **petals (tepals)**. The petals are just inside the sepals. Both are wider at the base and become narrower. The petals are slightly shorter than the sepals. Each flower has six **stamens** and three **stigmas**.



FRUIT

The fruit is a dry, brown or black, narrow, and oblong **capsule**. It is smooth and measures about 5 to 8 millimetres long by 3 to 5 millimetres wide. It is surrounded by the dried remnants of the flower. The capsule is **dehiscent**, and contains 25 to 35 smooth, yellowish brown seeds.

DID YOU KNOW?

This plant grows across the circumpolar North in Arctic habitats. It can also be found on high mountains in alpine habitats. These plants tend to grow in wet areas.



Northern wood-rush

Scientific name: *Luzula confusa*

Inuktitut name: Malikkaanujaq



ROOTS/STEMS

Luzula confusa is a grasslike **perennial**. These plants can be anywhere from 5 to 30 centimetres high. They can grow loosely or tightly clumped together and they can have short **rhizomes**. The **culms** are **erect**, stiff, and smooth.



LEAVES

The leaves grow in a **tuft** at the base of the plant and also up the stems. The ones growing up the stems do so in an **alternate** pattern. The **sheath** is reddish brown and can remain for years before decomposing at the base. Most of the leaves have their edges rolled inwards, and they can be curved instead of straight. Although both the top and bottom surfaces of the leaves have no hairs, the edges have white hairs.

FLOWERS

Luzula confusa's flowering stem is smooth, and has leaves. There is also a specialized leaf that is found at the base of the **inflorescence**. It can be obvious when it's larger, or less obvious when it's smaller. Rarely is it longer than the inflorescence.

The flower **clusters** (there can be two to seven clusters per plant) are on short, erect, or sometimes arching branches. Each cluster has between 20 to 80 very tiny, tightly packed flowers. The brown **calyx** is made up of three **sepals**. Each flower also has three egg- or sword-shaped brown **petals**.



FRUIT

Both the sepals and the petals remain around the fruit, which is a dry, brown, egg-shaped **capsule**. The capsule is **dehiscent**. The three seeds per fruit are also brown. Most of the seed surface is smooth, but there is a tuft of hairs on top.

DID YOU KNOW?

If one plant had seven clusters, with the maximum number of flowers (80) per cluster, there would be 560 flowers on the plant. It's amazing when you think that all of those flowers would easily fit in the palm of your hand! The scientific species name *confusa* for this plant is used because the plants can look very different depending on how many clusters of flowers they have. People can get confused thinking that plants with different numbers of clusters belong to more than one species.

There is a second *Luzula* species, *Luzula nivalis*, which is found in the same locations as *Luzula confusa*. *L. nivalis*, or common, snow, or Arctic wood-rush as it is also called, can be distinguished from *L. confusa* in several ways. *Luzula confusa* has a squarish stem, while *L. nivalis* has a round or oval stem. *Luzula confusa* has reddish sheaths, while *L. nivalis* has brown or pale straw-coloured sheaths. Mature leaves in *L. nivalis* sometimes have calloused tips. Those in *L. confusa* never do.



Birdfoot buttercup

Scientific name: *Ranunculus arcticus*

Inuktitut name: Ijuttait niqingit

ROOTS/STEMS

Birdfoot buttercup is a **perennial** herb. It grows in **tufts**, with each plant reaching between 8 and 30 centimetres high. The stems stand straight up and are covered with thinly spread hairs.

LEAVES

Ranunculus arcticus has two very different leaf shapes on the same plant. Most of the leaves, which grow in a tuft at the base of the plant, are kidney- or heart-shaped and have long **petioles**. The leaves that grow along the stem either have a single, short petiole or none at all. They are narrow leaves divided into three segments. The leaves growing up the stem do so in an **alternate** fashion.

FLOWERS

The flowering stems are hairy, and much taller than the leaves. The flower can be solitary or in a pair. The **calyx** is made up of five **sepals**, which protect the **petals** and reproductive organs when the flower is in **bud**. The sepals are green and purplish brown, with a hairy outside surface. The five yellow petals are wider at the top than in the centre and they are arranged in a loose spiral. Characteristically, the petals are glossy.

This species, like all buttercups, has a large, indefinite number of **stamens** and an **ovary** composed of 80 to 100 separate **carpels**.



FRUIT

The fruit is a group or **aggregate** of **achenes**, which is 5 to 7 millimetres long and 5 to 8 millimetres wide. Each achene is egg-shaped, small, and yellowish, with only one seed. It is a dry, **indehiscent** fruit.

DID YOU KNOW?

This species occurs everywhere in the Arctic. It has had more than one Latin name. *Ranunculus affinis* was first recorded late in 1823 to describe plants that had been collected on Melville Island. The name *R. arcticus* was recorded in March 1823 to describe plants that the explorer Richardson brought back from the Arctic coast near the Nunavut–N.W.T. border.



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Floating buttercup

Scientific name: *Ranunculus hyperboreus*

Inuktitut name: Iguttait niqingita ajjikasingit



ROOTS/STEMS

Floating buttercup is an **amphibious** plant, which means it can grow both on land and in the water. It is a **perennial** herb that lives for more than two years. The plants are low (1.2 to 2 centimetres high) and grow tangled together, forming mats. The smooth stems grow along the ground or float in the water; they do not grow straight up except when the stems have flowers. The roots are fine and threadlike, and they can develop on the stems at the **nodes**.



LEAVES

The leaves of this delicate plant are kidney-shaped, with three distinct **lobes**. They are smooth except around the edges, where they have tiny hairs. The leaves are arranged in an **alternate** pattern along the stems. The leaves are attached to the stem by thin, long **petioles** that are widely spaced along the stems.

FLOWERS

The smooth flowering stem has leaves and a small, solitary, yellow flower. The **calyx** is made up of three yellow or brown **sepals**. The three to five **petals** are yellow and egg-shaped in outline, with the narrower end at the centre of the flower. The **anthers** are club-shaped, which is thought to be a primitive shape for anthers. In the centre of the flower are the female **carpels**, grouped together in a ball-like head.

FRUIT

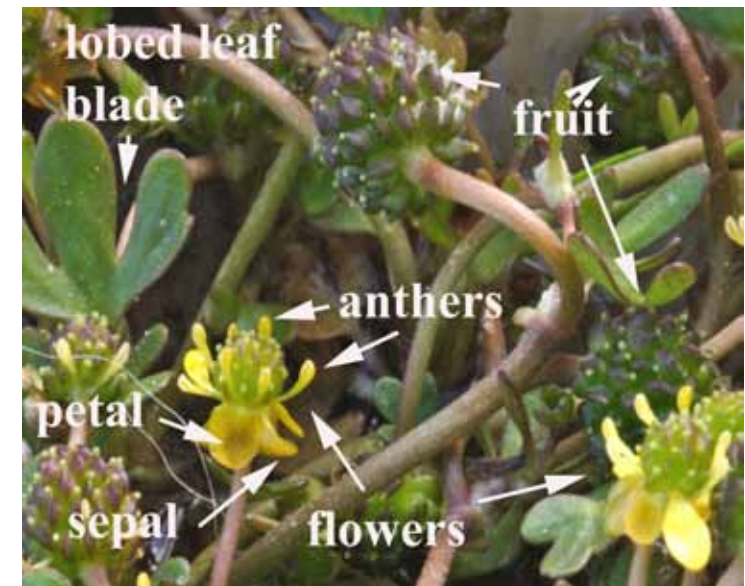
The fruit is an **aggregate** of **achenes**. The achenes are dry, one-seeded fruit. In this particular plant, the small achenes are gathered together in a **cluster** to form a tight, round group. Although the aggregate can be broken apart when it is ripe, each individual fruit is **indehiscent**. Both strawberries and raspberries are examples of aggregates of small fruit.

DID YOU KNOW?

Floating buttercup is found in marshy areas, brackish water, roadside ditches, and along rivers or streams. This species is found in all the circumpolar and circumboreal regions of the world.



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Snow buttercup

Scientific name: *Ranunculus nivalis*

Inuktitut name: Iguttait niqingittauq nunarait

ROOTS/STEMS

Snow buttercup is **perennial**. It grows from 5 to 20 centimetres high. *Ranunculus nivalis* grows up from a thickened **caudex** and has slender roots. Its stems are **erect**, and have a few brown hairs. Snow buttercup grows in dense **tufts** or clumps.

LEAVES

The leaves grow in a tuft at the base of the plant. The leaves also grow in an **alternate** pattern along the stem. They are kidney-shaped, flat, and smooth along their surfaces. They have three segments or **lobes** that come to a point. The edges of the leaves are gently waved.

FLOWERS

The flowering stems are much taller than the leaves. These stems are hairy and have one to three leaves.

The flowers are usually solitary. They are large for Arctic flowers, measuring more than 15 millimetres in diameter. The **calyx** is made up of five green, hairy **sepals**. The sepal hairs are brown, rough, and bristly. The flower has about five yellow **petals** that grow wider the farther they are from the centre. This species, like all buttercups, has a large, indefinite number of **stamens** and an **ovary** composed of 70 to 90 separate **carpels**.

FRUIT

The fruit is on a long stalk (5 to 9 millimetres long). It is a dense group of **achenes**. The **aggregate** looks like a ball, with **spikes** sticking out. It is green when it is mature.



DID YOU KNOW?

Sometimes you might find two similar-looking species of buttercups in the same area. It helps to know that, although *R. nivalis* and *R. sulphureus* plants look alike, they cannot easily be mistaken for one another because *R. nivalis* flowers earlier in the season, even setting fruit before *R. sulphureus* begins to bloom. The petals of *R. nivalis* are yellow when the flower first opens, but fade to white as the flower begins to develop fruit. *R. nivalis* is almost hairless on the **receptacle**, while *R. sulphureus* has brown hairs, although you would need a **hand lens** to see these hairs.



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Papaveraceae - Buttercups



Arctic poppy

Scientific name: *Papaver* ssp

Inuktitut name: Igutsat niqingit

In Nunavut, there are several poppy species, according to recent research. The scientific names of the most northern ones are *Papaver cornwallisense*, *P. dahlianum*, and *P. lapponicum* subsp. *occidentale*, and they are all rather common in Nunavut. *Papaver labradoricum* is found on Baffin Island, Southampton Island, and the Nunavut mainland. In addition, *Papaver hultenii* is known to be found on Victoria Island (and Banks Island).

The various species are distinguished by the shape and number of **lobes** on the leaves, the presence or absence or degree of hairiness on the under surface of the leaves, and the shape and hairiness of the **capsules**.

ROOTS/STEMS

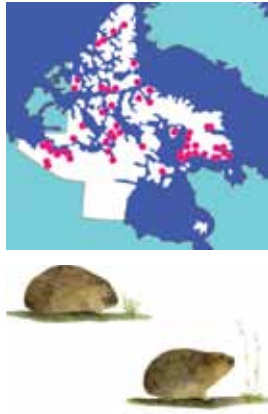
Arctic poppies are **perennial** plants. These plants are generally short—less than 15 centimetres high—but sometimes grow up to 25 centimetres in warmer, more sheltered places. These plants have a carrot-like central root (**taproot**) that goes a long way into the soil, as well as a **caudex** between the root and the leaves.

LEAVES

The leaves grow in a **tuft** at the base of the plant. Some of the leaves die but stay attached to the stem even after the growing season is over. The leaves have **petioles** that may be up to half as long as the **blades**. The leaf blades can vary in length from 10 to 120 centimetres. They are divided into varying numbers of lobes and in some species the first lobes are further divided. They may be grey-green or blue-green on the top and bottom surfaces. Hairs on the surfaces may be white or light brown.

FLOWERS

The leafless flowering stems are hairy and noticeably taller than the leaves. When the flower **buds** form, they are curled over on the flowering stem. In this position, they are closer to the ground, where it is warmer and more sheltered while the flower is developing



inside. The two **sepals** are covered with dark brown hairs and shaped like snowsuit hoods. The dark hairs on the sepals are in position to trap maximum heat from the sun.

The large **petals** (8 to 25 millimetres long and 8 to 20 millimetres wide) overlap and form a little satellite dish that follows the sun. Because of this shape, the warmth from the sun is focused on the reproductive parts. In the centre of the flower, there are a large number of **stamens** and a single **ovary** that may have four to seven **carpels**. On top of the ovary there are rays like the spokes of a bicycle. These are the stigmas that receive pollen from passing insects.

Arctic poppies are mostly yellow, but some may have white or yellow petals tinged with pink.

FRUIT

After the flower is fertilized, the petals fall away, leaving a developing capsule that is covered with dark brown hairs. The flowering stalk with the capsule stands straight up. When the capsule is ripe, it opens through valves near the top. The seeds inside get shaken out as the capsule is blown about by the wind. There are many seeds per capsule.

DID YOU KNOW?

Poppies are on the Nunavut Coat of Arms and represent the summer flower. Purple saxifrage is the spring flower and crowberry is the autumn plant.



Golden saxifrage

Scientific name: *Chrysosplenium tetandrum*

Inuktitut name: Unknown

ROOTS/STEMS

This saxifrage is a **perennial** plant. It grows between 3 and 10 centimetres high and can form very lush plants in damp areas that have additional nitrogen from human or dog activities.

Golden saxifrage has short, horizontal **rhizomes**. Its smooth above-ground stems can be **erect** or grow along the ground.

LEAVES

The leaves do not grow in pairs. The lower leaves have longer **petioles**, while the leaves closer to the flowers have short ones or none at all. The leaves are slightly wider than they are long. The **blades** are usually 3 to 12 millimetres long and 6 to 15 millimetres wide. Their outer edges have three to seven shallow **lobes**. They are somewhat fleshy, with smooth, hairless surfaces.

FLOWERS

The flower **cluster** is a **cyme**. The flower at the top of the flowering stem opens first, then the flowers below open later. These particular flowers have no stalks and grow from a **bud** that develops in the junction between the stem and the base of a leaf. There are between four and twelve flowers per **flowering head**.

The flowers are actually quite inconspicuous, with four yellow or green **sepals** but no **petals**. Each flower has four to eight **stamens**, fewer than other members of this family. There are two **carpels** in the **ovary**, the presence of which is indicated by the two **stigmas** on the top of the ovary.



FRUIT

The ovary, in the early stages of becoming a fruit, is ball-shaped, with the tops of the carpels sticking up like two horns. It is a dry **capsule** still surrounded by the **sepals**. It contains 25 to 50 reddish brown, shiny, smooth seeds. These can be seen when the capsule splits open, forming a small (4 to 6 millimetres wide) cup. The seeds rest inside the cup, which can look a little like eggs in a bird's nest. When a drop of rain hits the seeds, they splash out of the cup and onto the ground, often at some distance from the parent plant. These plants grow mostly in sheltered, moist areas near water.

DID YOU KNOW?

These plants are also found in areas where animal droppings are or were plentiful. They are often seen among the ruins of Inuit dwellings, inside meat caches, near animal dens, or even in stone burials. They flourish near the abandoned buildings that were associated with the char fishery on Nikko Island in Nettilling Lake.



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Saxifragaceae - Saxifrages

Foliolose saxifrage

Scientific name: *Micranthes foliolosa*

Inuktitut name: Mirquujaliit



ROOTS/STEMS

Micranthes foliolosa, like all Arctic saxifrages, dies back to the ground in the winter and grows again the following spring. It is most often found by the edge of small streams and can grow from 3 to 15 centimetres high. In warmer places, like Southampton Island, these plants can grow up to 50 centimetres high. It has a short, often branching **caudex**, from which **erect** stems grow.



LEAVES

The leaves grow in a circular **cluster** at the base of the plant (**basal rosette**). The leaves have no **petioles**. They are wider toward the leaf tips, which are rounded. There are three to seven small teeth at the end away from the stem. The leaves are smooth and fleshy.

FLOWERS

The flowering stems are leafless and may be a little hairy. They have many **bulbils**, small leafy **buds** that grow on the main stem and the branches below the flowers. When bulbils detach, if they land in a good location, they may develop into new plants. Bulbils are much heavier than the seeds produced by the plant because they have more food reserves.

At the top of the flowering stems, there may be between one and seven flowers, or there may be none. If there is more than one, they are in a loose, irregularly branched **panicle**. The flowers, when they occur, have five white or pink, narrow **petals**, each with two yellow spots toward the centre of the flower. The **calyx** is smooth and can be green or purple.

There are ten **anthers**, five of which mature first. The **ovary** has two **carpels** that are completely joined together and look like a pink ball in the centre of the flower. On the top of the ovary are a pair of small **stigmas**.

FRUIT

As with other saxifrages, the calyx remains attached and surrounds the round, dry, purple **capsule**. The capsule is between 3 and 5 millimetres long and 2 to 3.5 millimetres wide. It is smooth, without any hairs. When the seeds are mature, the capsule splits open and releases the seeds. *Micranthes foliolosa* has approximately 50 to 100 seeds.

DID YOU KNOW?

This species occurs in most places in Nunavut, where it grows on damp soil that has humus (the build-up of some organic material), or among mosses. The size of the plant is an indication of how favourable the environment is for its growth. In more difficult environments, the plants have few or no flowers. Flowers do sometimes set seeds, but this is fairly rare. The bulbils are more successful in forming new plants.



© CMN

Saxifragaceae - Saxifrages

Snow saxifrage

Scientific name: *Micranthes nivalis*

Inuktitut name: Unknown

ROOTS/STEMS

Snow saxifrage is a small **perennial** that grows between 4 and 10 centimetres high. The roots of these plants are threadlike and black. It has a thick, purple, **erect** stem, which is covered in **glandular** hairs that make it look very fuzzy.

LEAVES

The leaves grow in a **basal rosette**. They are leathery and green on the top surface, but reddish purple underneath. The leaves are egg- or spoon-shaped, with the handle of the spoon pointing towards the centre of the plant. Although some of the leaves become much thinner toward the stem, they do not have true **petioles**. The leaves are mostly flat and are **serrated** along the edges.

FLOWERS

The flowering stems of this genus (*Micranthes*) have no leaves. Snow saxifrage has a **bract** just below the headlike **inflorescence**. There are one or two dense **clusters** of three to ten flowers per inflorescence. Each flower has a green or purple **calyx** that is made up of five smooth **sepals**. There are also five small white **petals** without any markings that are the same length or just a little longer than the sepals. In the centre of the flower, there is an **ovary** composed of two **carpels**, while ten **anthers** produce the pollen. At the top of the carpels are the **stigmas**, which are flat and round.

FRUIT

The fruit is a dry **capsule**, which is surrounded by the remains of the **calyx**. It is brown or purple, spherical, and **dehiscent**. There are about 50 to 100 yellowish brown seeds per capsule.



DID YOU KNOW?

Two other saxifrage species with leaves in basal rosettes and no leaves on the flowering stems occur on the Arctic Islands. *Micranthes tenuis* is very similar to snow saxifrage, but the **flowering heads** usually have more flowers and branch more often. The hairs on the flowering stems are sparse and not as long.

The other species, *Micranthes hieracifolia*, is less likely to be mistaken for snow saxifrage because most plants are much taller and coarser. Occasionally, *M. hieracifolia* might be shorter and slenderer and in this case, it could resemble snow saxifrage a little more closely.



Brook saxifrage

Scientific name: *Saxifraga rivularis*

Inuktitut name: Unknown



ROOTS/STEMS

Brook saxifrage is a small, delicate **perennial** herb. These plants can be from 2 to 12 centimetres high. They grow in loose clumps, with the flowering stems not being much taller than the leaves. These plants may sometimes have a few **bulbils**. They can easily fall off and grow into new plants. This can be a way for the species to be dispersed, if the bulbils detach and are carried off by the high water of spring runoff. This type of reproduction is called vegetative reproduction. The plants may also have **rhizomes**. Neither bulbils nor rhizomes occur all the time, so it is not ideal to use these structures to identify this plant.



LEAVES

The leaves are arranged on the stem in an **alternate** pattern. They have long **petioles** and if you look down on the plant, the leaves are seen near the top of the plant, close to the flowers. The leaves are triangular, 2 to 10 millimetres long and 5 to 8 millimetres wide. They may have two to five shallow **lobes** or lack lobes when the leaves are near the flowers. The leaves are smooth, not hairy.

FLOWERS

The flowering stems are about as high as the leaves. The flowers are usually solitary, although occasionally there may be two flowers together. Each flower has five smooth, green **sepals** that make up the **calyx**. They also have five white **petals** with a tinge of purple sometimes, ten **anthers**, and an **ovary** composed of two **carpels** that each have a round, flat **stigma** on top.



S. hyperborea © CMN

DID YOU KNOW?

When *Common Plants of Nunavut* was first published in 2004, *S. hyperborea* and *S. rivularis* were treated as the same species. Since then the presence of *S. hyperborea* as a species distinct from *S. rivularis* has been established. Although the two plants are quite similar, you can tell them apart if you look carefully.

Saxifraga hyperborea's leaves grow mostly around the base of the plant and not up near the flowers. This also means that the flowers are taller than the leaves, as opposed to *S. rivularis*, where the flowers are close to the leaves. *Saxifraga hyperborea* does not have rhizomes. The leaves of both plants are quite similar in appearance, but often the whole *S. hyperborea* plant is tinted reddish purple. And although their flower structures are the same, the flowers in *S. hyperborea* are usually pinker. Their fruit is very similar as well.



S. rivularis © CMN

Nodding saxifrage

Scientific name: *Saxifraga cernua*

Inuktitut name: Nunaraq qupanuap niqinga

ROOTS/STEMS

Saxifraga cernua is a **perennial** plant. It usually grows from 10 to 25 centimetres high. These plants have **erect** stems that may grow close together, but they are very successful as isolated plants. The stems are hairy and have small **clusters** of red **bulbils** or **plantlets**. The bulbils grow in the junctions where each leaf meets the stem. This occurs mostly on the upper stem, where the leaves are very much reduced in size. There are also paler, whitish bulbils that are hidden at the base of the plant.

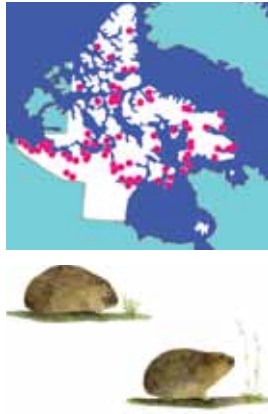
LEAVES

The leaves mostly grow in a **tuft** at the base of the plant. Leaves that grow up the stem do so in an **alternate** pattern. All the leaves are kidney-shaped, with several **lobes** or rounded segments. They are attached to the stem by a long **petiole**. There are fewer lobes and the leaves get smaller the farther up the stem they are.

FLOWERS

Saxifraga cernua is sometimes called nodding saxifrage because when the flower is young, it droops a little, as if it were nodding. Although *S. cernua* usually has a single flower at the end of each stem, it does happen that this species can have two or more flowers per stem as occurs on Southampton Island, or possibly no flower, as is often the case around Resolute.

The bright white flowers usually have five oblong **petals**, which are much longer than the green or reddish **sepals**. They also have ten **anthers** and an **ovary** with two **carpels** that each bear a single fluffy **stigma** on top.



FRUIT

The fruit of nodding saxifrage is surrounded by the hairy remains of the **calyx**. It is a dry, **dehiscent capsule**. Although both anthers and carpels are present in the flowers, seeds that can grow into new plants are rarely produced. This may be because the plant flowers rather late in the season. On top of producing seeds, *S. cernua* creates little copies of itself in the bulbils, and when these fall off, they can grow into new plants—clones!

DID YOU KNOW?

Nodding saxifrage is plentiful everywhere in the Arctic and is one of the species readily seen in the High Arctic. It is tolerant to most environmental conditions, meaning that it can live anywhere from wet to very dry, exposed to sheltered habitats. It does not mind frost at all, and in fact, it does well in snow patches.



Saxifragaceae - Saxifrages

Prickly saxifrage

Scientific name: *Saxifraga tricuspidata*

Inuktitut name: Kakillarnat, tiinnguat, a'asaat

ROOTS/STEMS

Prickly saxifrage is a **perennial**. It grows between 5 and 15 centimetres high, but can sometimes grow as tall as 25 centimetres when in sheltered or shady places, for example between rocks. Its stems grow close together. Oftentimes, many prickly saxifrage plants grow together, forming large areas on sunny slopes. These plants have a central **taproot**, out of which grows a **tuft of erect**, smooth, or slightly hairy stems. These plants have a tendency to become **sub-shrubs**, and there are woody species in this family.

LEAVES

The leaves come in more than one shape on a prickly saxifrage plant. The leaves at the base of the plant are shaped like a triangle, with the narrowest part attached to the stem. The larger end of the leaf can have one to three **lobes** that come to a sharp point. These are quite prickly, since each lobe has a needle-like barb on the tip, and this is where the plant gets its common name. The leaves that grow up the flowering stems are straight and narrow, without lobes. Both types of leaves are leathery and often reddish near the tips.

FLOWERS

The hairy flowering stems are a lot taller than the leaves at the base of the plant. The **inflorescence** is a **cyme**. The flower at the top of the flowering stem opens first, while the flowers below open later. There can be three to ten flowers per inflorescence. Each flower has five green or purple **sepals**. Each flower has five creamy white **petals** that are oval, with the narrower end at the centre. The petals have yellow, orange, or reddish purple dots toward the tips. When the flower opens, there are ten **stamens**, five of which mature first, while the other five mature later.

FRUIT

As the **ovary** matures to set seed, the petals fall off, but the sepals remain on the flower. The ovary swells to become a dry **capsule** that contains the seeds. It is round and longer than it

is wide. The capsule starts off yellow but becomes brown or red when it is mature. It is **dehiscent**.

DID YOU KNOW?

Although other species of saxifrage are found in Europe, this is not the case with *Saxifraga tricuspidata*. It is found only in North America and Greenland.

TRADITIONAL USE

The Inuktitut names for this plant are many. It is called kakillarnat, which means, "It causes a prickly feeling." Or, it can be called tiinnguat, which means, "A substitute for tea." Sometimes it is called a'asaat, which refers to the sound you might make if you were pricked by the plant. Prickly saxifrage leaves can be used to make tea and they can also be put on cuts to help with healing. These plants were used as bedding for sled dog puppies. It was thought that the prickly leaves helped to toughen up the pads on the bottoms of their feet so that when they grew up and helped pull the sleds, their feet would not give them any trouble.



Purple saxifrage

Scientific name: *Saxifraga oppositifolia*

Inuktitut name: Aupilattunnguut

Purple saxifrage is the territorial flower of Nunavut.

ROOTS/STEMS

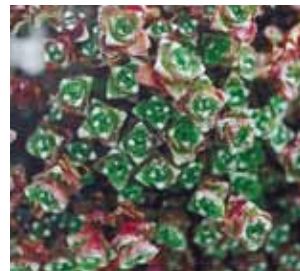
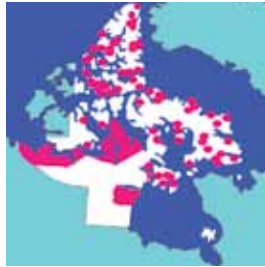
Purple saxifrage is a **perennial** herb that lives for two years or more. It is generally the first showy plant to flower in the spring. Purple saxifrage's branches have a tendency to become semi-woody and produce new growth every year at the tips, making it a **sub-shrub**. Purple saxifrage plants don't grow very high (2 to 5 centimetres), but their stems grow all tangled together and form mats that can be 20 to 50 centimetres in diameter, making them easy to spot! These cushionlike plants have a **taproot**.

LEAVES

The leaves grow in pairs on each side of the stem. The second pair is at right angles to the first. Seen from above, the shape of the leaves together forms a rectangle, or almost a square. The leaves grow very close together. They are pie-shaped, thick, and fleshy. The edges of the leaves have bristle-like hairs. On the tip of the leaves, there are often **hydathodes** that can be visible when the plant is growing fast. The by-products of respiration are excreted as a white powder, calcium carbonate, which may appear as a ring around the hydathode on a sunny day. It is worthwhile looking at these rings through a **hand lens** because they resemble tiny crystals and are quite beautiful. They are washed away by rain.

FLOWERS

The hairy, **erect** flowering stems have leaves that surround the stem, forming a protective air space that helps to keep the growing flowering stem warm. These leaves are narrower and without hydathodes. The flowers of *S. oppositifolia* are solitary, but there are often so many of them on a plant that the whole top looks purple. They have five smooth, green or purplish **sepals**. The five **petals** are usually purple, but they can sometimes be pink or pale red, and rarely white, and are shaped like eggs. There are ten **anthers** and an **ovary** with two **carpels** and a platelike **stigma** on top of each one.



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FRUIT

The fruit is a dry **capsule** surrounded by the dried remains of the **calyx**. The capsule is roundish at the bottom, but splits into two sections at the top, each going in a different direction. The capsules are either brown or purplish red and they contain 50 to 100 smooth, brown seeds.

DID YOU KNOW?

This species lives in some of the harshest Arctic environments, where there is little competition from other species. It grows in locations where it gets beaten by the wind in the winter and baked by the sun in the summer. It is one of only four flowering plants growing on the land closest to the North Pole in Greenland.

TRADITIONAL USE

The purplish blossoms are very tasty when eaten with seal blubber, and the leaves can be used to make tea. Eating too many flowers at once can cause diarrhea. Aupilattunnguut was sometimes used as a substitute for tea if Inuit ran out of regular tea when they were out on the land. Although the boiled saxifrage leaves were thick and rich, one could eventually get used to the taste.

They can be eaten along with leaves, but you tend to get tired of them even before you get full. As a matter of fact, if one is only going out for a walk, one would eat edible plants, but when you start for home, you would feel that you had too much of that plant—even your chest would not feel good.

Z. Innuksuk, interviewed by Leah Otak (March 18, 1999)



Spider plant

Scientific name: *Saxifraga platysepala*

Inuktitut name: Kakillarnaliit

ROOTS/STEMS

Although this plant is a **perennial**, it dies back to the ground quicker than most, right after flowering. It can grow from 1.5 to 15 centimetres high. The stems that grow up from the base are **erect** and can have anywhere from just a few hairs to many.

Spider plants also have **stolons**. They are red, smooth, threadlike stems that grow out from the base of the main stem, arching for some distance until they touch the ground. Where a stolon touches, it puts out roots and begins to establish a little **plantlet** that eventually grows into a new plant.

LEAVES

The leaves are arranged in a gentle spiral up the stem in such a way that each leaf is exposed to the maximum amount of sunlight, while at the same time shading another leaf to the minimum extent. The leaves at the base are usually wider and have long, bristle-like hairs around the edges. The leaves further up the stem have softer, shorter hairs. All of the leaves are spoon-shaped.

FLOWERS

The flowering stem is hairy and can have solitary flowers or a **cluster** with up to five flowers. When there is more than one flower, the flower at the top opens first, with the flowers below opening a little later. This type of **inflorescence** is called a **cyme**. In the High Arctic there is often only one flower on each stem.

The five **sepals** are hairy, green or purple, and oblong, while the five **petals**, shaped like pieces of pie that are rounded at the wide end, are yellow. Each flower has ten **anthers** and an **ovary** composed of two **carpels** and two flat, platelike **stigmas**.



FRUIT

The fruit is a dry **capsule** surrounded by the **calyx** (five sepals together) and other remains of the flower. The capsule is round, **dehiscent**, and either brown or purple. There are approximately 50 to 100 brown seeds per capsule.

DID YOU KNOW?

Sailors and whalers called *Saxifraga platysepala* spider plant because, with its short round body and long “legs” (stolons), that’s just what they thought it resembled—a spider!



Saxifragaceae - Saxifrages

Tufted saxifrage

Scientific name: *Saxifraga cespitosa*

Inuktitut name: Unknown

ROOTS/STEMS

Tufted saxifrage is a **perennial** herb. It is a cushionlike plant that grows between 3.5 and 20 centimetres high. It has a long, central **taproot**. The stems are **erect** with a few hairs. If the plant grows in the shade, then the stems are often elongated.

LEAVES

The leaves grow mainly in a **tuft** at the base of the plant. They are slightly fleshy. The few leaves that grow up the stem do so in an **alternate** pattern. The leaves have three to five **lobes** and are soft to the touch. The **blades** are covered with tiny **glandular** hairs. Withered leaves persist at the base of the plant for many years. Some plants also have vigorous new shoots in the **axils** of the upper leaves.

FLOWERS

The flowering stems have both hairs and leaves. The flowers can either be solitary or in a **cluster**. In the High Arctic or in cold habitats, there is usually only one flower per flowering stem. When there is more than one flower, the uppermost flower blooms first. The flowers below open later. This flower arrangement is called a **cyme**. Each flower has five green **sepals** that are shorter than the **petals** but can be seen between them. The five petals are white, creamy, or pinkish red. The flowers have ten **anthers**, two **carpels**, and two plate-shaped **stigmas**. These are very characteristic of the Saxifrage family.



Susan Aiken



FRUIT

The elongated, cylindrical **capsule** is brown and hairy. The fruit splits open when the seeds are ripe, revealing approximately 20 to 50 seeds per capsule. The small seeds (0.8 millimetres to 1.2 millimetres long) are slightly winged, but it would take a microscope to be able to see the wings.

DID YOU KNOW?

This species regularly flowers and produces seeds even in the most northerly and exposed locations. The seeds are dispersed by the wind shaking them out of the capsules.



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Yellow marsh saxifrage

Scientific name: *Saxifraga hirculus*

Inuktitut name: Unknown

ROOTS/STEMS

Yellow marsh saxifrage is a **perennial**. These plants grow anywhere from 4 to 20 centimetres high. They have a short, thickened **caudex**, as well as **rhizomes**. At the end of the rhizomes, **bulbils** form. They can grow into new plants if they break off and get moved around in spring meltwater. This method of developing new plants is called vegetative reproduction.

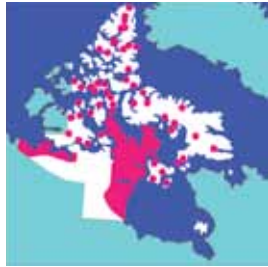
LEAVES

The leaves occur in both a **tuft** at the base of the plant and along the stems. The leaves in the tuft may have short **petioles** or leaf **blades** that are very narrow at the base. These flat leaves have entire margins, meaning that there are no indentations.

FLOWERS

The flowering stems have both leaves and tiny brown hairs. Closer to the flower **cluster**, the hairs are more numerous and orange-brown.

There is usually a single yellow flower per flowering stem. Each flower has five smooth **sepals** that make up the green and purple **calyx**. Each flower also has five yellow petals that are egg-shaped, with the wider end away from the centre of the flower. The petals have pale yellow-orange dots toward the centre of the flower.



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FRUIT:

As the **ovary** matures to set seed, the petals fall off, but the sepals remain on the flower. The ovary swells to become a dry **capsule** that contains the seeds. The purple or brown capsule splits open and sheds 50 to 100 black or brown seeds when it is fully mature.

DID YOU KNOW?

Yellow marsh saxifrage grows in wet areas and sometimes can be so plentiful that it gives a yellow tinge to the tundra.

This species occurs everywhere in the circumpolar region and is so variable in different places that several subspecies or varieties have been recognized.



Saxifragaceae - Saxifrages

Yellow mountain saxifrage

Scientific name: *Saxifraga aizoides*

Inuktitut name: Unknown

ROOTS/STEMS

Yellow mountain saxifrage is a **perennial**. These low-growing plants (3 to 10 centimetres high) produce **rhizomes**, which branch many times and form mats. Along the horizontal stems, above the ground, they also produce **bulbils** that are tight collections of leaves, similar to those in a tiny onion. These may detach and become new plants. This is a method of producing a new plant by vegetative reproduction rather than by seed (sexual reproduction).

LEAVES

The leaves are distributed along the stem in an **alternate** fashion. They do not have **petioles**, but the flat surfaces attach directly to the stems. The leaves are narrow, straight, and fleshy. They are light green and smooth, except around the edges, which have a few tiny hairs. The leaves can remain green all winter or they can stay on the plant even if they are dead. The dead leaves help to trap water and keep the ground near the plant moist. These plants, as with some of the other saxifrages, have **hydathodes**. On *S. aizoides*, they can be visible or inconspicuous.

FLOWERS

The flowering stems are mostly smooth, with leaves. The flowers can be solitary or in **clusters**. If clusters occur, they are in **cymes**. Typically on the Arctic Islands, the flowers are solitary. In a cluster, there would be between one and four flowers. Each flower has five smooth, green **sepals** that make up the **calyx**. They also have five yellow **petals** that have orange spots toward the outer half of the petal. The petals are the same length or a little longer than the sepals. They are shaped like a narrow egg, with the wider end away from the centre of the flower.



FRUIT

The fruit is a dry, brown **capsule** that is still surrounded by the calyx. The capsule is **dehiscent** and releases about 50 to 100 brown, hairy seeds.

DID YOU KNOW?

Saxifraga aizoides and *Saxifraga hirculus* have yellow flowers. Given that they have both been found on Baffin, Ellesmere, Banks, and Victoria Islands, here are some simple tips to tell them apart.



The petals of *S. aizoides* are shorter and relatively narrower than those of *S. hirculus*. There is a gap between the petals in *S. aizoides*, and when you look down on the flower, the sepals can be seen through the gaps. The petals lie almost flat and the orange flash of the petals of *S. aizoides* is distinctive. The petals of *S. hirculus* touch at the base so the sepals are not seen between the petals. The petals are close together and the whole flower is cuplike, much like a buttercup. The centre of the flower, which has just two carpels distinguishes this flower from a buttercup.

Alpine bistort

Other common name: Inuit nuts

Scientific name: *Bistorta vivipara*

Inuktitut name: Sapangaralannguat, turlait, tuqtait, Inuit qaqquangangit

ROOTS/STEMS

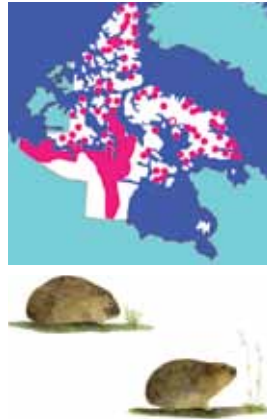
Alpine bistort is a **perennial** herb. These plants can have single stems or two to three stems from the same **rhizome**. They also have a **caudex** that, together with the rhizomes, can be eaten. The above-ground stems are erect and smooth. Alpine bistort can be anywhere from 2.5 to 24 centimetres high.

LEAVES

The leaves grow mostly in a **tuft** at the base of the plant. However, on taller plants, there may also be a few leaves higher up on the stem. The leaves at the base are attached by a **petiole** (4 to 45 millimetres long), while the leaves further up the stem lack petioles. When a plant is growing in dense moss, the lower petioles often grow very long towards better light, above the surface of the moss. The oblong leaf **blades** grow close to the stem or spread out slightly from it. They are leathery, with a very shiny and smooth top surface and sometimes, but not always, a hairy underside.

FLOWERS

The smooth flowering stem is taller than the leaves. The **inflorescence** is a **spike**, with flowers all the way up the central **axis**. The flowers on the bottom open first. This type of **cluster** is called a **raceme**. There are between 10 to 80 flowers per inflorescence. In Alpine bistort, the flowers are usually sterile. Below the flowers on the stem are small **bulbils**.



The flowers, like the other Arctic members of Polygonaceae, don't have distinct **sepals** or **petals**, but instead, five petallike **tepals**. They are pink or white. There are three to six poorly developed **stamens** per flower.

FRUIT

The flower structures remain around the dry, one-seeded **achene**. The achene is oval and not flattened, as it is in the sorrel fruit. Rarely does Alpine bistort produce seeds here in the Arctic. Instead they reproduce with the bulbils that grow on the stem below the flowers. The bulbils fall to the ground and can grow new plants if the conditions are right.

DID YOU KNOW?

The bulbils sometimes start to develop leaves even before they drop off the mother plant. In fact, if you pick some Alpine bistort and put it in a glass of water, you can watch the bulbils grow their tiny leaves, as they get ready to drop off. Once they drop off, try planting some and see what happens!

TRADITIONAL USE:

The Inuit name, *Sapangaralannguat*, means, "imitation small beads." The underground parts are small, about the size of almonds, and they are best dug before the plants begin to put out leaves in the spring. In Iqaluit, they are called Inuit nuts and are said to taste a bit like almonds. The Inuit eat the leaves and bulbils, and also dig up the rhizome, which can be eaten raw or cooked.



Mountain sorrel

Scientific name: *Oxyria digyna*

Inuktitut name: Qunguliit

ROOTS/STEMS

Oxyria digyna is a **perennial**. The plants are usually between 2 and 20 centimetres high. The stems and leaves all grow out of a **caudex**. These plants have short **rhizomes** that are often branched. The stems that grow above ground are **erect** and smooth.

LEAVES

Mountain sorrel is one of the first plants that children learn to recognize because of its tasty leaves. They have a sour but pleasant taste. The leaves grow in a **tuft** at the base of the plant. The leaves' **petioles** are 2 to 50 millimetres long. The smooth, fresh green leaves can be leathery or fleshy and are kidney-shaped. The leaves are **deciduous**, that is, they are produced each year and die at the end of the growing season. Late in the season, the leaves turn red as they age.

FLOWERS

The flowering stems are generally much taller than the leaves at the base of the plant, and they may or may not have leaves. The **inflorescence** is an irregularly branching, loose **panicle**. Sometimes, when the plant is small, there may be just a single flowering stalk instead of many branches. There are between 50 and 100 tiny bisexual flowers per inflorescence. These tiny flowers don't have distinct **petals** or **sepals**, but have petallike **tepals**. There are two narrower outer tepals and two inner tepals. They can be



Susan Aiken



red, pale pink, white, or translucent. Each flower has six **stamens** that can be obvious as the flowers open.

FRUIT

The fruit of mountain sorrel, an **achene**, develops from a single **ovary** that has two chambers. Inside there is the outline of two **carpels** with two **styles**. The fruit has purplish wings that develop as the fruit matures. The achene is flattened and the wings help with its dispersal.



DID YOU KNOW?

People are not the only ones that like the taste of this plant's sweet leaves. Caribou, muskoxen, and even geese like to munch on the leaves. Arctic hares, lemmings, and voles prefer the rhizomes.

TRADITIONAL USE

This plant was an important food source for Inuit because it is high in Vitamin C. The leaves were, and still are, eaten raw or sometimes preserved in seal fat. If you are out on a hike and there is no fresh water, you can eat some leaves to quench your thirst! Mountain sorrel was also used medicinally in a brew to help people with low energy. Or, if too much fat was consumed, a sorrel brew could be used to ease stomach aches.

The sorrel with a greener colour are sweeter than the reddish coloured ones. When you rub a bunch together with your palms they get very sour and sweet to chew. We didn't have access to sweets; we'd eat sweet sorrel instead. We also used to boil them and make a sweet drink. Once they were boiled, the water turned green and when you took a sip, it tasted very sweet.

**S. Nutarakittuq, interviewed by Eugene Amarualik
Translated by Lucy Tapardjuk (March 15, 1990)**

Arctic mouse-ear chickweed

Scientific name: *Cerastium arcticum*

Inuktitut name: Nunarait qakuqtat

ROOTS/STEMS

Arctic mouse-ear chickweed is a **perennial** herb. It can grow from 3 to 20 centimetres high and can grow in both loose and tightly packed clumps. This plant has a slender **taproot**. Its very hairy stems grow along the ground at the base of the plant, but may grow up as they get farther from the base.

LEAVES

The leaves are in pairs, **opposite** to each other on the stem. They are very hairy on both the top and bottom surfaces. The tops of the leaves are dull and often bluish green. The leaves do not have **petioles** but instead attach directly to the stems, and they are shaped like elongated circles with pointy tips. In fact, these hairy little leaves look like mouse ears and that's where the plant gets its common name.

FLOWERS

The flowering stems are hairy and have leaves. The flowers are rarely solitary. Their **inflorescence** is a **dichasium**. The uppermost pair of flowers blooms first, followed by a pair below that blooms later. There are usually one or two pairs of flowers per inflorescence on the main flowering stem.

The **calyx** is made up of five hairy, green or green and purple **sepals**. The five white **petals** are longer than the sepals. The petals are much wider towards the outside of the flower. On the outer edge there is a rounded notch. In the centre of the flower there are ten **stamens**. The five nearer the petals mature first, while the five closer to the **ovary** mature later. The ovary is in the centre of the flower



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and coming out of the top are three branched **stigmas**, which indicate that the ovary is made up of three **carpels**.

FRUIT

The fruit is a dry **capsule** still surrounded by the calyx. It is an elongated cylinder that can be straight or somewhat curved. The capsule is straw-coloured and opens at the top with ten teeth when the seeds are ripe. There are numerous reddish brown seeds per capsule.

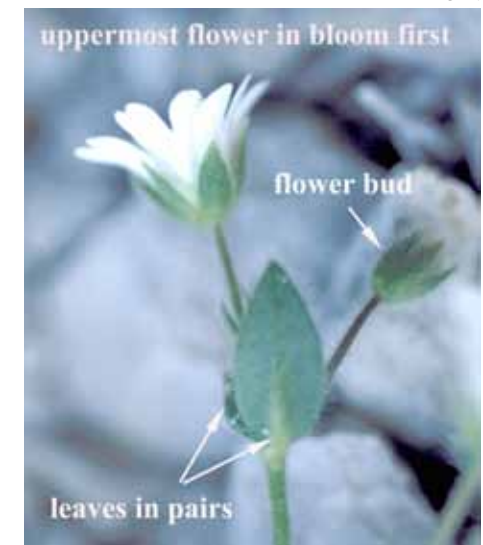
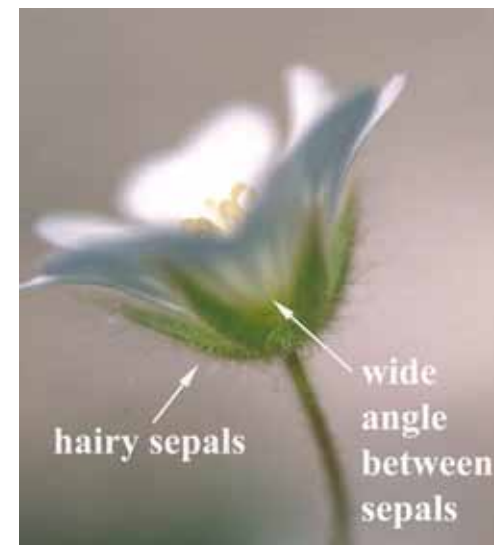


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DID YOU KNOW?

In Nunavut, six species of mouse-ear chickweed occur. Two of the species have a limited **distribution** on southern Baffin Island. One species is more commonly found in the Kitikmeot region and another is more common in the High Arctic, where it can be tricky to identify, as it may go years without flowering.

A second species often found growing near Arctic mouse-ear chickweed is alpine mouse-ear chickweed. The best way to tell these species apart is by looking at the angles of the sepals underneath. The angles between the sepals of *C. arcticum* are narrow, while the angles between the sepals of *C. arcticum* are wide.



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Sandwort

Scientific name: *Minuartia rubella*

Inuktitut name: Kakillarnait



ROOTS/STEMS

Sandworts are **perennials**. They are small plants that grow from 1.5 to 5 centimetres high. *Minuartia rubella* has **rhizomes**. The aerial stems grow along the ground at the base of the plant but can grow up at the tips. These stems are very narrow or fine.

LEAVES

The leaves grow along the stem in pairs, **opposite** each other. Some of the leaves stay attached to the plant even after the growing season is over. When this happens, they form a covering that helps to insulate the part of the plant that remains alive over the winter. The leaves have no **petioles** and attach directly to the stem. The leaves are longer than they are wide, can be flat or folded, and come to a point at the tip. The leaf surfaces are dull and smooth, although there are some hairs around the edges. The leaves also have three obvious **veins** that are especially easy to see when the leaves are dried.

FLOWERS

The flowering stems have **glandular** hairs and leaves. The **inflorescence** may have one to three flowers; if there are multiple flowers, the inflorescence is called a **dichasium**. The uppermost pair of flowers bloom first and below them another pair of flowers bloom later. The **calyx** is made up of five purple or green and purple **sepals**. The sepals can either be hairy or without any hairs. The five white **petals** are slightly shorter than the sepals. The petals are egg-shaped, becoming narrower towards the tip of the petal. The flowers have ten **stamens** and three **stigmas**.



Susan Aiken

FRUIT

The fruit is surrounded by the calyx and is longer than the sepals. It is a dry, straw-coloured, egg-shaped **capsule** that splits open when the seeds are ripe. It opens with three teeth at the top of the capsule. In each capsule, there are lots of brown seeds that are covered with raised bumps.

DID YOU KNOW?

In exposed conditions, that is, where the plant is not protected from the wind and excess heat, these plants can form **cushions** to preserve their resources. When this happens, the flowers are barely taller than the leaves on the cushion.



Caryophyllaceae - Pink



Arctic bladder campion

Scientific name: *Silene involucrata*

Inuktitut name: Nakasuujait

ROOTS/STEMS

Arctic bladder campion is a **perennial** plant. It has a **taproot** below the **caudex**. Its **erect** stems can be between 5 and 30 centimetres high.

LEAVES

Some of the leaves grow in a **tuft** at the base of the plant, while the leaves on the flowering stem are attached **opposite** to each other. There are no **petioles** between the leaves and the stem. The leaves can be spoon-shaped with a broad pointed tip, and they are always longer than they are wide.

FLOWERS

The flowering stems have at least a pair of opposite leaves. The flowers can be solitary or there may be as many as three in an **inflorescence**. The **cluster** is usually made up of two lateral branches that occur at about the same level as flowers at approximately the same stage of development.

The interesting feature of *S. involucrata* is that its **sepals** are **fused** or glued together, making a balloonlike bladder. The **calyx** is green and purple, with noticeable purple ribs. It is shaped like an egg, but unlike an egg, it's hairy! In this species, the calyx is always upright. Each flower has five pinkish or white **petals** at the top end of the calyx or bladder. The petals open up at right angles to the bladder, which exposes the ten **anthers** and the five **stigmas** on the **ovary** that are inside.

FRUIT

After **cross-pollination** has occurred, the petals fall off. The calyx becomes more rounded and inside is a dry, oblong, yellowish or brown **capsule**. The capsule splits open at the top, revealing five teeth, when the seeds are ripe. It holds many brown, winged seeds.



DID YOU KNOW?

In the Western Arctic, the *S. involucrata* plants are usually larger, leafier, and smooth. They are also often found without the purple pigment. *Silene sorensensis* or three-flowered campion is also found on parts of Baffin, Victoria, and Ellesmere Islands. This plant resembles Arctic bladder campion. However, you should be able to tell them apart because *S. sorensensis* is rarely above 15 centimetres, and the “glued” calyx is much hairier than in *S. involucrata*. See if you can spot both species!



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Caryophyllaceae - Pink

Moss campion

Scientific name: *Silene acaulis*

Inuktitut name: Airait, aupilattungujuq



ROOTS/STEMS

Silene acaulis is a **perennial**. It is between 2 and 5 centimetres high and grows in a tightly packed, roundish **cushion** that can grow up to 50 centimetres in diameter. The cushion can be flat or domed like an igloo. Under the cushion, there is a **caudex** that branches many times. Below the caudex, a **taproot** grows deep into the tundra.



LEAVES

The leaves are **opposite**, densely crowded, and overlapping on short stems. There are no stalks attaching the leaves to the stems, and some of the leaves stay attached to the branches even when their growing season is over and they have died. The tiny leaves are flat and longer than they are wide, and come to a point at both ends. The leaf surfaces are smooth and dull.

FLOWERS

The flowering stems have leaves and a single flower at the tip. The **calyx** is made up of five purple, or purple and green, **fused sepals**. The calyx is shaped like a tube, with teeth at the top end. It's usually difficult to see the calyx because once the **corolla** has opened, it lies flat just above the cushioned leaves. The **petals** are pinkish purple, with a small notch at the tip.



FRUIT

After flowering, the **ovary** develops into a **capsule** with six teeth. The calyx remains once the petals fall off and surrounds the dry, egg-shaped capsule. The yellowish or black capsule is **dehiscent**. The teeth of the capsule curl under, exposing the opening through which the seeds escape. There are several seeds in each capsule.

DID YOU KNOW?

Early in the season, moss campion can have just a few flowers in its cushion. These open first on the side of the plant that gets most warmth from the sun. When it is in full bloom, the flowers may completely hide all the leaves. All you see is a rounded pink cushion! The plant is very spectacular when this happens. Later in the season, when the petals are no longer present, plants may look like clumps of moss.



Caryophyllaceae - Pink

Nodding campion

Scientific name: *Silene uralensis*

Inuktitut name: Pulluliujuut

ROOTS/STEMS

Silene uralensis is a **perennial**. It usually grows between 4 and 15 centimetres high. It has a **caudex** under which grows a long **taproot**. The stems are **erect** and sometimes have a lot of hair, while at other times there is very little hair.

LEAVES

Some leaves grow in a **tuft** at the base of the plant, while others grow in pairs, **opposite** to each other along the stem. The leaves attach directly to the stem without **petioles**, and sometimes the older dying and dead leaves hang around longer than one season (meaning that they are **marcescent**). The leaves are long and narrow, with the broadest part below the rounded tip. They are flat and can be with or without hairs.

FLOWERS

The hairy flowering stems usually have one to three pairs of opposite, narrow, small leaves. There is one flower per stem and most of it is hidden in the bell-shaped, balloonlike **calyx**, which has a white surface and striking purple ribs. The five **sepals** that make up the calyx are **fused**. The calyx is papery thin and hairy. The five white **petals** are just longer than the calyx. The flower nods when it is young and in full flower, but straightens up when in fruit.



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FRUIT

After the flower is pollinated and the **ovary** begins to develop seeds, the flower straightens up. When ripe, the ovary develops into a **capsule** that swells above the calyx. The capsule splits open when the seeds are ripe, releasing many tiny yellowish brown seeds. The seeds have wings that can be seen with a **hand lens**. When the capsule opens, it has ten teeth at the top that curve downward.



Susan Aiken

DID YOU KNOW?

There is still some debate among **botanists** about how *Silene uralensis* should be classified. It used to be called *Melandrium apetalum*, and there are botanists that would rather see it called *Silene wahbergella* subsp. *arctica*. All this is to say that classifying plants is a very complex science! Techniques of DNA analysis that are used to solve crimes can also be used to work out how plants are related, but the process is time-consuming and there is a long way to go before all the answers are found.



Caryophyllaceae - Pink

Long-stalked starwort

Scientific name: *Stellaria longipes*

Inuktitut name: Miqqaviat



ROOTS/STEMS

Stellaria longipes is a **perennial** herb. It is a small and delicate-looking plant that grows from 1.5 to 10 centimetres high. It usually grows in **tufts**, which can be tightly packed, but plants may sprawl and form mats. The stems of this plant usually grow along the ground near the base of the plant, but then grow up. They are usually smooth, although some may have a few hairs.



LEAVES

The leaves grow along the stems in pairs, one **opposite** the other. Some of the leaves stay on the plant after their growing season is over. The soft but firm leaves are longer than they are wide, or they can be oval-shaped, with a pointed tip. On the underside of the leaf is an obvious ridge that helps to identify this plant. The top surface of the leaves can be dull or **glaucous**. All the surfaces are smooth.

FLOWERS

Stellaria longipes have leafy flowering stems. The flowers are either solitary or in a **cluster**. The cluster, a **dichasium**, has two branches out to the side that grow at the same level as flowers that are at the same stage of development. There are one to six flowers per **inflorescence** per flowering stem. Each flower has five **sepals** that form a green or green and purple **calyx**. The sepals can be hairy or smooth. Each flower also has five white **petals** that are just a little longer than the sepals. The petals are egg-shaped in outline, with the wider end away from the centre. This is a bit tricky to tell when looking at the petals because each petal is split down the middle almost to the base, making it look like two thin petals instead of one. Every member of this family has ten **stamens**. The **anthers** of *Stellaria longipes* are a very distinct red colour before they shed their pollen. The five stamens closest to the petals ripen first, and the stamens near the **ovary** ripen later. Thus, the flower has pollen available on two different dates, which can be important if there is a summer snowstorm, or if insects fail to visit the flower one day because it is too windy.

FRUIT

The fruit is a dry **capsule** still surrounded by the calyx. The capsules are usually shiny and black, although rarely some straw-coloured capsules have been seen. The capsules are egg-shaped, and split open with six teeth at the top when the seeds are ripe. There are several brown seeds per capsule.

DID YOU KNOW?

This species is very successful in disturbed habitats, especially where there is or has been much human activity. It is very common at Thule sites and around communities.

This circumpolar species can look very different in different environments. As a result, it has had several Latin names. It has been agreed that the plant is very diverse, but it is only one species.



Caryophyllaceae - Pink

Salt-marsh starwort

Scientific name: *Stellaria humifusa*

Inuktitut name: Siuraup nunaranga



ROOTS/STEMS

Stellaria humifusa is a **perennial**. It is less than 15 centimetres tall and its stems grow mostly along the ground. This species forms mats near the high tide line. Mats help to keep down the air movement near the plant, thereby helping to hold in moisture, and sometimes warming up the immediate environment. In the case of salt-marsh starwort, the mats also help hold soil around the plants if they are covered by seawater for short periods at very high tides and exposed to some wave action of splashes. It is never found inland.



LEAVES

The leaves grow along the stems **opposite** each other, in pairs. They have **petioles** between the **blades** and stems. They are oblong but come to a point at the tip. The top surface of the leaf is smooth and dull. Usually you can see last year's brownish, papery leaves, because they tend to hang on even though they are dead. This builds up a **mulch** that is good for protecting the living parts of the plant.

FLOWERS

The flowering stems are leafy and smooth. The flowers usually grow singly, but sometimes there can be two or three in a **cluster**. When there is more than one flower, they come off the stem in pairs (or triplets) and those flowers are at nearly the same stage of flowering at the same time, forming a **dichasium**. The top pair flowers first. All of the flowers have five smooth, green **sepals**. The five white **petals** are deeply **lobed** in the middle so that it may actually look like there are ten petals.



There are ten **stamens** with yellow **anthers** that are sometimes quite noticeable on these flowers. In the centre of the flower is an **ovary** on top of which are three **stigmas**.

FRUIT

The **calyx** surrounds the dry, egg-shaped, straw-coloured **capsule**. When the brown seeds are ripe, the capsule opens, revealing six teeth at the top. The seeds are scattered when the capsule is shaken by the wind.

DID YOU KNOW?

These plants grow mostly by the seashore, in marshes or wet meadows. The flowers of this plant have three **styles**. This is important when you are trying to distinguish between some of the small white flowers belonging to the same family, so look carefully!



Caryophyllaceae - Pink

Dwarf fireweed

Scientific name: *Chamerion latifolium*

Inuktitut name: Paunnat

ROOTS/STEMS

Chamerion latifolium is a **perennial**. These plants grow between 5 and 30 centimetres high. The stems of these plants tend to be somewhat floppy. This contrasts with the fireweed, *Chamerion angustifolium*, from elsewhere in Canada, the stems of which grow stiff and straight in the air. The stems appear to be without hairs, but under a powerful microscope tiny hairs can be seen. Dwarf fireweed has **rhizomes**.

LEAVES

The leaves grow along the stem in an **alternate** or **opposite** pattern. When they first appear in the spring, these plants are easily identified by their dark burgundy colour. As the plant grows, this colour changes to green, sometimes with a purplish tinge. The leaves are **glaucous**. They are shaped like a sword and can either be narrow or wide. The outside edges of the leaves are smooth and without bumps. Just like the stems, the leaves appear to have no hair, but under a microscope the hairs are indeed there.

FLOWERS

The flowers of this plant are among the largest in the Arctic, sometimes reaching three centimetres across. The **inflorescence** is a **raceme** of three to five flowers. The lowermost flower blooms first. The dark purple **calyx**, made up of four narrow **sepals** and four lighter purple **petals**, forms a stunning flower. The dark sepals are seen between the lighter petals. They are wider towards the end of the petal, which is rounded. The flowers have eight **stamens** with white **filaments** and dark purple **anthers**. When these flowers are in bloom, it is quite a surprise to get up really close and see that the pollen on the anthers is a bright turquoise colour. One set of four anthers ripens first and sheds pollen before the second set. After the anthers have shed their pollen,



they wither and the **style** grows up from the centre of the flower. The top opens to expose four **stigmas**, ready to receive pollen. The four stigmas indicate that the **ovary** is made up of four **carpels**.

FRUIT

Each flower develops an elongated cylinder that is the fruit. It is a dry, **dehiscent capsule**. Each capsule has four teeth and splits into four sections all the way down to its base. The fruit can be between 45 and 70 millimetres long, is purple or greyish brown, and contains hundreds of seeds.

DID YOU KNOW?

Dwarf fireweed grows really well on disturbed soil, that is, beside roads, alongside streams, and on burnt lands. Because this plant produces so many wind borne seeds, it has a greater chance than most plants of having seeds arrive in the disturbed sites. On the bare ground the seeds have the most chance of developing new plants. If the seeds land where there are lots of plants already, even if the seeds sprout, they are not strong enough to grow up through the plants already in place. Eventually other windblown seeds come along and get caught in the dwarf fireweed plants. Often they grow into larger or stronger plants than the fireweed and in time, these plants take over.

TRADITIONAL USE

Dwarf fireweed's parts (leaves, flowers, seed **pods**) are all edible. They can be eaten raw or mixed with fat, or even mixed with blood and oil. The leaves are good when cooked and taste somewhat like spinach. These plants can also be used to make tea. The tea is good for stomach aches, and to help make a person stronger after they have bled a lot. As well, the leaves can be chewed to help stop a nosebleed. According to several sources, these plants are good for helping with indigestion and general stomach aches.

I made tea, as the pot was already containing paunnat plants to brew. I made this brew for a hot drink, so we became cheerful and got talkative.

George Kappianaq, self-taped (August 22, 1997)



Willows

General Overview

Scientific name: *Salicaceae*

The willow family has about 1,000 species that live mainly in temperate and cold regions of the world. Thirteen species occur in Nunavut. In warm regions some willow are trees, but in alpine and arctic areas they are low-growing or creeping **shrubs**. In Nunavut, willows often grow as horizontal trees, but there are two species that can grow taller than a person. One grows on southern Baffin Island, another on Southampton Island. Willows have an outer bark and under that a watery bark (phloem), which is heavily charged with salicylic acid.

Plants in the willow family are either male or female. Both sexes have their tiny flowers arranged in catkins.

In the Arctic, flower **buds** and **leaf buds** for the following season are produced in the fall as the present years' leaves are dying. They are ready to expand into leaves and catkins when spring arrives.

Because willows flower early, they are very likely to develop mature seeds, even in a short summer. The seeds have a **tuft** of fluff that is easily caught in the wind. When the seeds land in good growing conditions, they form new plants.

In the spring, as the flower buds expand, they pass through a stage where they are known as pussy willows. For southerners, it's always a surprise to find these pussy willows on the ground at their feet in the Arctic.



ROOTS /STEMS

Willow plant stems and branches have soft, tough wood that can be bent. Because all willows produce wood, they are considered trees even when the plants are tiny (less than five centimetres tall). The plants have narrow branches and very strong roots. In many Arctic plants, what would be the trunk of a tree lies along the ground often below the soil or hidden by moss, and what we see as individual plants are branches that grow from this stem.

LEAVES

Willow leaves have **petioles** and at the base of the petioles there are usually **stipules**, which are small outgrowths that look like tiny, round leaves. These sometimes remain for half the summer. Different species have stipules of different shapes, and this can be helpful in identifying the species. Leaf **blades** are usually longer than they are wide. In Arctic species, the leaves turn yellow and die in the fall. The dead leaves are **marcescent**. The leaves are spirally arranged on the stems and are formed in buds that are covered by a single **scale**.



FLOWERS

Willow plants are either male or female. The flowers of both sexes are tiny and lack sepals and petals. They are grouped together in structures called catkins. The catkins may begin to flower before the leaves expand, or as they are doing so. The male catkins have many scalelike leaves. At the base of the leaves, a male flower forms. It has one or two **stamens** and one or two **nectaries**.



In Arctic species, male flowers have one or two **anthers**. These are often red before they shed yellow pollen. The female flowers on the stalk of the catkin consist of a scale, a flat nectary **gland**, and an **ovary** composed of two **carpels**. There is a **style** on top of each carpel, which branches into two forked **stigmas**. This tells **botanists** that the ovary has two carpels. The catkins may be very hairy or lack hairs.

Insects, often flies, seek nectar and visit the plants when they are in flower. The insects visit any available catkins looking for nectar. When they visit male flowers, they get pollen on their bodies. This way pollen from male flowers reaches the stigmas of female flowers and also goes from one species of willow to another. This leads to cross-fertilization between species, known as **hybridization**. It happens often among willows.

FRUIT

After male catkins have shed their pollen, they die and fall off the plant. In mid or late summer, a willow plant without any evidence of catkins is likely a male plant. The female catkins remain on the plant as the **ovary** produces the seeds. In the fall, the ovaries split open and the seeds come out. The seeds have a tuft of long hairs at the base. Together, they form the willow cotton that has many traditional uses (e.g., in the wicks of the qulliq the traditional seal-oil lamp).



DID YOU KNOW?

When chemists extracted the active ingredient in willows, they called the **compound** salicylic acid, using some of the Latin name for willow, which is *Salix*. In the plant, salicylic acid is a hormone that assists in plant growth and development.

Some willow trees have lived for 180 to 236 years. Scientists have discovered this by cutting across the trunk of a willow tree and counting how many **annual** rings there are. Each spring when the tree starts to grow again, it puts out a ring of new, spring-size cells. As the summer progresses the new cells for the year get smaller and finally stop growing altogether. The change in cell size with growth during the season makes a distinct ring. In trees like the giant redwood, this is easily seen in a slice of a tree trunk. In Arctic willows, it can be seen under a microscope.



Salicaceae - Willows

Arctic willow

Scientific name: *Salix arctica*

Inuktitut name: Suputiit, suputiksaliit, uqaujait

ROOTS/STEMS

Arctic willow grows farther north than any other willow and it is the most common willow on the Arctic Islands. It is a dwarf **shrub**, which means it's a low, woody plant with several main stems instead of a single trunk. These plants usually grow between 3 and 25 centimetres high, but in some places they have been reported to be 1 metre high. The stems can either grow **prostrate** or start flat on the ground and then grow **erect**, and maybe even curve back towards the ground (**decumbent**). The stem can also be a wide variety of colours, from yellow-brown to grey-brown, red-brown, or just plain brown. The smaller branches can be the same colours, plus violet.



LEAVES

The young leaves of *S. arctica* are yellowish green and hairier than the dull green, mature leaves. The leaves are attached to the stems by stalks, called **petioles**. The leaves are between 10 and 85 millimetres long and they can be narrow and round at both ends, circular, or shaped like a wide egg or a broad, round-tipped sword. They can be flat or the edges can be rolled under. The top surfaces of the leaves are smooth. At the tip, on the under surface, long hairs sometimes look like a beard.

FLOWERS

Arctic willow catkins bloom at the same time as the **leaf buds** open. The male catkins are from 14 to 65 millimetres long, while the female catkins are between 20 and 105 millimetres long. Both male and female catkins can be stout, slender, or almost circular. Both have two **nectaries** in their flowers. Arctic willow male catkins have two **anthers**. The female catkins have an **ovary** composed of two **carpels**. The ovaries of the Arctic willow are hairy. This characteristic is sometimes used to help distinguish between willow species. There are 12 to 15 **ovules** per ovary.



FRUIT

Arctic willow's fruit is a hairy **capsule**. When the seeds are ripe, the capsule splits open. With willow plants, this is an obvious occurrence because the seeds are surrounded by hairs that help them catch the wind and get dispersed to another location. This fluff is called willow cotton.

DID YOU KNOW?

Specimens of *Salix arctica* of various ages have been reported in the Arctic. They have been aged anywhere from 60 to 236 years old, the oldest one being from Greenland. A willow in the Lake Hazen area of Ellesmere Island was found to be 85 years old.



Susan Aiken

TRADITIONAL USE

In abandoned tent sites, or abandoned winter dwellings, once they thawed out, it might expose an area where there had been some blubber that had gone rancid. By adding Arctic willow to the remains of this rancid blubber [puja] we could chew it as if it were gum. If you took the rancid blubber that we had made into a gum, then added rendered oil, the colour would turn white like the colour of caribou back fat. And if there were berries, then you could add them to make a pudding.

If you add Arctic willow, it will no longer be sticky when you are chewing it. It is sticky when the rancid oil is not mixed with anything. That way you would make a gum, after you had the gum, then the gum that we were chewing would be mixed with oil, the dish would get large after you had added berries, that was the way we did it. It may not be appealing; nevertheless, we used to eat it.

Rachael Uyarasuk, interviewed by Leah Otak (March 3, 1999)

The dwarf willow has edible leaves and its roots can be peeled and bitten to relieve a sore tooth. Inuit women collect the willow fluff to mix with moss to make a wick for the qulliq. They collect enough in the autumn to last all winter. These plants also provide grazing food for muskoxen and Arctic hares.

Net-vein willow

Scientific name: *Salix reticulata*

Inuktitut name: Alagsaujut



ROOTS/STEMS

Net-vein willow is a dwarf **shrub** that is less than 15 centimetres high. Its stems lie **prostrate**. The smooth branches can be yellow-brown or red-brown. These plants can grow close together and form large colonies by layering. The stems, as they grow, put out branches. As these branches become covered by the build-up of moss or windblown debris or soil, the ends of the branches form roots and develop into separate plants. The main stem puts out another branch at a higher level and the process repeats itself. This process is known as layering.



LEAVES

The young leaves are yellowish green and often covered with long, silky hairs that fall off as the leaf matures. Mature leaves are darker green, with a waxy covering that makes them shiny. They stand out from the other willow leaves because of their very obvious **veins**. The tops of the leaves are sunken near the veins, and puffed up between them. The bottoms of the leaves have veins that look like threads of a net, and that's where this plant gets its common name. The leaves come in a variety of shapes: oblong, circular, or sometimes spoon-shaped. They are usually between 12 to 66 millimetres long and 8 to 50 millimetres wide.



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FLOWERS

Willow flower **clusters** are called catkins. Each plant has either male catkins or female catkins. The catkins flower at the same time as the **leaf buds** open. Although the branches of this plant lie flat on the ground, the catkins stand straight up and are quite noticeable, even though they are small. Both



male and female catkins are red and can be either slender or fat. On the male catkin, the **stamens** have **anthers** that are purple then become yellow as they shed pollen. The female catkins have hairy **ovaries**. At the thin end of the ovary is the **style**, which divides into two red, sticky **stigmas** that catch pollen. This is useful in identifying female plants.

FRUIT

The fruit is a slightly hairy **capsule**. Like other willows, the capsule releases seeds surrounded by white fluff. The fluff catches the wind and the seed is blown to another location to start a new plant. The ovary produces 12 to 18 **ovules**, which will become the seeds.



DID YOU KNOW?

The leaves of this species often have shiny, red, roundish growths. These red growths are called galls and inside the larger ones are small caterpillar larvae that are eating and waiting for spring, when they will emerge as adults.

TRADITIONAL USE

- Q: *I remember the adults used to gather them [the pussy willows] and they used to lay them aside and they became ripe afterwards, didn't they?*
- A: *Yes, they gathered them when they became too dry to chew. That meant that they were ripe. When you tried chewing them they felt feathery and dry when they became ripe. They would gather those and leave them on a shelf and the pussy willows would ripen and became furry-looking. They did that because they needed the outer part for wicks. Those plants were essential for their uses then. They would gather enough to last them through the winter season.*

Elizabeth S. Nutarakittuq, interviewed by Eugene Amarualik
Translated by Lucy Tapardjuk (March 15, 1990)

Northern willow

Scientific name: *Salix arctophila*

Inuktitut name: Uqaijuit



ROOTS/STEMS

Northern willow is a dwarf **shrub** that grows up to 15 centimetres high. The stems grow along the ground, and often where the stem touches the ground, roots can develop. The plant is in effect a horizontal tree. In this species and Arctic willow, the horizontal tree trunks may be only 1 to 3 centimetres in diameter, but this can be after more than 100 years of growth. The branches can be either yellowish brown, reddish brown, or greenish brown.



LEAVES

The young leaves are yellowish green, but they darken to a deep green as the plant grows. The undersides of the leaves are more of a bluish green. The leaves are shaped like an elongated circle or like an egg with the narrower end closer to the stem. Both the undersides and the tops of the leaves are smooth. The edges can be smooth or have small teeth partway or all the way around the leaf.

FLOWERS

As with all willows, the **inflorescences** are catkins. Northern willow flowers as its **leaf buds** open and the leaves emerge. The flowers are very similar to those of the Arctic willow.

There are male plants and female plants. The female catkins are between 16 and 69 millimetres long, while the male catkins are 17 to 45 millimetres long. Both male and female catkins are densely packed with small flowers. The **floral bracts** are light rose, black, brown, or purplish red. The **ovaries** are pear-shaped, with only a few hairs. The female flowers have one **nectary**. Northern willow's male flowers have two **anthers** that are purple, becoming yellow with pollen.



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FRUIT

The fruit of the northern willow is a **capsule** that can be hairy or smooth. It is **dehiscent**. The seeds are surrounded by fluff that develops from the base of the seed and expands to become the fluff of willow cotton. The ovary produces eight to sixteen **ovules**.

DID YOU KNOW?

There are plant specimens that appear to be **hybrid** plants between this species and other willow species, such as *Salix arctica*, *Salix uva-ursi*, and *Salix glauca*. **Hybridization** occurs when two plants of different species reproduce to create offspring that look a little like each of the parent plants.

How can you tell a plant is a hybrid? The hybrid plant would have characteristics of both parent plants. For example, in the case of *S. arctophila* breeding with *S. uva-ursi*, the hybrids could have the leaves of *S. uva-ursi* but the capsules of *S. arctophila*.

Traditionally, the larger willow branches were used to make the frame for the Inuit drum.



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Snow-bed willow

Scientific name: *Salix herbacea*

Inuktitut name: Quarait



ROOTS/STEMS

Salix herbacea is a tiny dwarf **shrub** that only grows from 0.5 to 5 centimetres high. It looks more like leafy ground cover than what we would normally think of as a shrub. These plants have **rhizomes** forming mats of plants. Even though they are not very tall, their aerial stems are **erect**. The bigger branches are red-brown or violet, while the smaller branches are yellow-brown or red-brown. All branches are smooth.



LEAVES

The young leaves are yellowish green, but as they grow they become dark green on both sides. At all stages of growth, the leaves are smooth. These tiny leaves measure between 6 and 21 millimetres long. The leaves can be circular, or in the shape of slightly elongated circles. The tips are usually rounded. The top sides of the leaves are shiny, and the edges have small teeth all the way around.

FLOWERS

The flowers are tiny catkins. Both the male and female catkins have two to ten flowers that are loosely clumped together. The female catkins can be twice as long (11 millimetres) as the male catkins (5.5 millimetres), especially when the female catkin is setting fruit. The **ovaries** on the female catkins are pear-shaped and smooth.



Kathy Thornhill

FRUIT

The fruit is a tiny (2.2 to 7.5 millimetres long), smooth reddish **capsule**. Just like other willows, the capsules release seeds, covered with fine hairs that look like cotton, when they are ripe. The ovary produces eleven to eighteen **ovules**, which become the seeds inside the capsule.

DID YOU KNOW?

You find *Salix herbacea* most often where snow banks have stayed late in the season. They are the Arctic's tiniest trees.

Salix herbacea is one of the smallest woody plants on the planet. Although the species' **distribution** is now Arctic and sub-Arctic, during the late glacial period it occurred as far south in North America as Cambridge, Massachusetts.



Susan Aiken

Mountain avens

Scientific name: *Dryas integrifolia*

Inuktitut name: Malikkaat (Pangnirtung), isuqtannguat (Kingait), isurramuat

ROOTS/STEMS

Dryas integrifolia is a dwarf **shrub**, which means it is a woody plant with several main stems instead of one trunk. These shrubs are usually less than 15 centimetres tall. The branches that grow from the main stems grow **prostrate** instead of up as they do in shrubs that grow farther south. The branches themselves may develop roots where they touch the ground. The branches and stems get tangled and form mats of mountain avens.

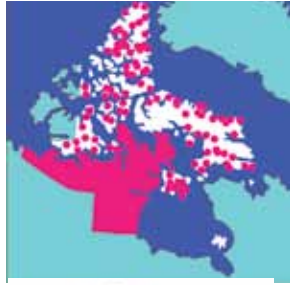
LEAVES

The leaves are leathery and most remain on the plant over the winter. Dead leaves build up under the plant as a thatch that helps hold in water. The small leaves can be flat, but more often the edges curl under. The top smooth, dark green surface is covered with a wax that makes water run off the leaf. The undersides are covered with thick white hairs. The breathing **pores** of the leaf (stomata) are on this side.

FLOWERS

The flowering stem is leafless and covered in woolly hairs. It is taller than the leaves, and gets taller as the flower goes to seed. The seven or eight **sepals** are green, brown, or black, and hairy. The black hairs on the surface of the **calyx** help to trap heat, which assists the growth of the flower.

A beautiful, creamy white flower blooms at the end of the flowering stem. It has between seven and eleven



Susan Aiken



egg-shaped **petals** that grow together to form a satellite dish-shaped flower. The flowers follow the sun as it crosses the sky, trapping the most warmth available to the centre of the flower. Inside the petals there is a ring of many **stamens**, and in the centre, an **ovary** composed of many separate **carpels**, each with a **style** and **stigma**. The stamens ripen first and insects, commonly flies, transfer the pollen to other flowers in which the stigmas are receptive.

FRUIT

The calyx remains and surrounds the fruit, which is a **cluster** of egg-shaped **achenes**. The achenes are brown or straw-coloured and hairy. The **styles** elongate as the fruit matures. They twist around each other to form a fluffy, twisted **spike** of hair that is easily recognizable. They untwist as the seeds ripen and become ready to be blown to a new location by the wind.



DID YOU KNOW?

One of *Dryas integrifolia*'s many adaptations for surviving in our cold Arctic climate, is **marcescent** leaves. Once its leaves die, they stay on the plant and serve as insulation, keeping the new growth protected from the wind and late snow.

TRADITIONAL USE

Mountain avens were used to determine the season, particularly in the summer, in mid-summer towards autumn—these plants were used to determine time. When they are coiled tight, it means that this is mid-summer. As soon as they start to uncoil, this is the time towards autumn. So now, these plants are not coiled tight. These plants were used to determine time that was to come.

Mannik, this is when the birds start to lay eggs. The next is called saggaruut—this is when the hairs on the caribou had moulted and been replaced with a thin hair. The next is known as akkulliruut, which is the time the plant called malikkaat (mountain avens) starts to uncoil.

Lucien Ukaliannuk, interviewed by Louis Tapardjuk (August 13, 2001)



Arctic cinquefoil

Scientific name: *Potentilla hyparctica*

Inuktitut name: Unknown

ROOTS/STEMS

Potentilla hyparctica is a **perennial**. The plants grow between 5 and 20 centimetres high. They grow tightly packed together. The stems are **erect**. Arctic cinquefoil has a thickened **caudex**, under which there is a long **taproot**.



LEAVES

The leaves grow in a **tuft** at the base of the plant. They are **compound** leaves, which means the leaves are divided into two or more **leaflets**. In the case of *P. hyparctica* there are usually three leaflets per leaf. The leaflets grow from a common centre (like fingers from the palm of your hand) and are therefore said to be **palmate**. The **blade** margins are scalloped or **serrated**. The undersides of the leaves are dull and hairy, while the upper sides can be either hairy or smooth.



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FLOWERS

The leafy flowering stems can be either the same height as the leaves or taller. The stems are hairy. The flowers are either solitary or in **clusters**. There can be one to three flowers per cluster, although more plants tend to have the smaller numbers.

The flowers not only have a **calyx** but also an **epicalyx** (a second calyx beneath the first). Both layers of the calyx are made up of five green or brownish red, hairy **sepals**. The flowers have five yellow, egg-shaped **petals**, with the wider ends away from the centre. The petals are yellow with a flash of orange towards the centre.

The flowers have many **stamens** and an **ovary** made up of many single **carpels**.

FRUIT

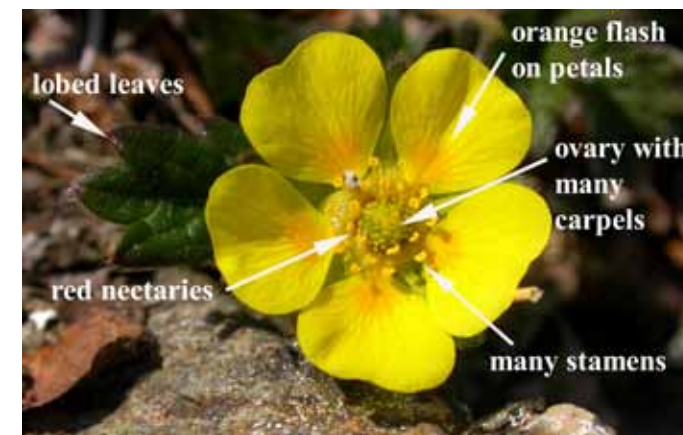
The fruit is a **cluster** of **achenes**. The achenes are grouped together in a cluster that develops on top of the calyx where the flower was. The achenes spread apart when the seeds are ripe, but are **indehiscent**. The fruit is green or straw-coloured.

DID YOU KNOW?

This species occurs all over the circumpolar area. In Canada, **botanists** tend to see plants that are a little different from one another in the northern part of the Arctic and the more southern part. The northern race plants are slenderer and hairier, and have leaflets with more acute, more dissected **lobes**. They have much smaller and more pointed calyx and epicalyx segments.



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Cloudberry

Scientific name: *Rubus chamaemorus*

Inuktitut name: Aqpiit

ROOTS/STEMS

Cloudberry is a **perennial**. Like willow plants, cloudberry has male and female plants. They usually grow between 6 and 20 centimetres high. Cloudberry has an extensive creeping and branching system of slender woody **rhizomes** covered with brownish papery bark. The leaf-bearing stems are covered with hairs when they are young but the hairs fall off as the stems age.

LEAVES

Each plant has between one and three large leaves. The leaves have **petioles** and the **blades** are circular or kidney-shaped, with five to seven **lobes**. The upper surface of the leaf is smooth, while the underside is hairy. There are teeth all the way around the edges of the leaves. In shape, they are more like the maple leaf on the Canadian flag than any other leaf found in the Arctic.

FLOWERS

The hairy flowering stems are as tall as the leaves or a little higher. The showy flowers are solitary and grow at the top of the stems. The green **calyx** is made of four or five **sepals**. The four or five white **petals** are egg-shaped, with the narrow end towards the centre of the flower. The flowers are either male or female. The male flowers have **stamens** in the centre of the flower, whereas the female flowers have **ovaries** made up of many separate **carpels** that develop into the fruit.

FRUIT

A female plant may develop a single fruit at the top of the stem. The sepals remain in position, but after flowering the petals fall off. The individual carpels in the ovary become fleshy. Each one is a tiny **drupe**, which, like a plum, has a fleshy outside, with a stone or pit inside. There is a seed inside the pit. A group of drupes tightly packed together is called an



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aggregate of drupelets. They look like raspberries. When the fruit is immature, it is firm and red, but when it is ripe, it is yellow, soft, and juicy.

DID YOU KNOW?

In Scandinavia, cloudberry are used to make a liqueur. They are also blended with large quantities of whipped cream to make a delicious dessert.

In Alaska, people make a mixture of seal oil and chewed caribou tallow, and beat this until it is like whipped cream. They then add cloudberry to make "Eskimo ice cream."

TRADITIONAL USE

There are many medicinal uses for cloudberry. The Dogrib would boil the flowers to make tea and put it on sore eyes. They would also put chewed berries on wounds and sores. The Inuit had many names for this plant and its parts. Before they had berries, the plants were called aqpiqtit, while in the spring, before the berries turned red, they were called aqpiksait. During the summer they were simply called aqpiit. Aqpinnaqtit, aqpiqtit, and nakait are the words for the stems and leaves.



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Rosaceae - Roses



Alpine milk-vetch

Scientific name: *Astragalus alpinus*

Inuktitut name: Unknown

ROOTS/STEMS

Alpine milk-vetch is a **perennial** plant. The roots have nitrogen-fixing **nodules**, in which bacteria can produce the type of nitrogen that the plant needs. The above-ground stems are **decumbent**. The plant forms many branches rather than a single main stem at ground level. The branches are weak and lie close to the ground in small plants, or over each other in larger plants, so they intertwine, forming tangled mats. These plants can grow from 2 to 25 centimetres high.

LEAVES

The **compound** leaves have **petioles** and each has a **stipule** (small leaflike structure about 3 millimetres long) at the base. The compound **blades** are 15 to 55 millimetres long by 8 to 20 millimetres wide, and are divided into 9 to 23 **leaflets**. The blades of the leaflets can be oval or **lanceolate**. Leaflets do not have a stipule at the base.

FLOWERS

The flowering stems are leafless and hairy, and the flower **cluster** is a **raceme**. The flowers at the bottom open first. There are usually between three and nine flowers per cluster and their colour can range from white to pink, purple, and even blue. The flowers are typical of this section of the pea family. The individual **sepals** are joined at the bottom to form a cup. The five sepals are points at the top of the cup. The large top **petal** is called the banner and sometimes has markings that signal to insects where to enter the flower. The next two petals are called wings because they open when an insect lands on the flower. The lower two petals are joined together as a **keel** that covers the ten **stamens** and single **ovary**. Nine of the stamens are joined together in a tube while the tenth one, across from the banner petal, is free. When the insect lands on the flower, it gets covered in pollen from the two different stamen locations. The keel is blunt, unlike *Oxytropis*, which has a keel with a



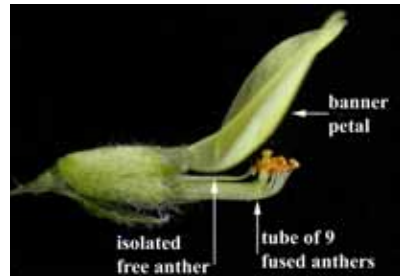
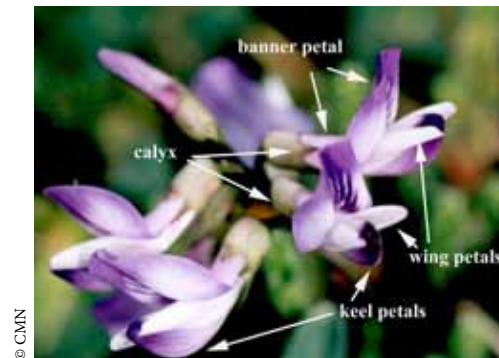
pointed tip. That is one of the distinguishing features between an oxytrope and a milk-vetch.

FRUIT

After flowering, the petals and the stamen tube drop off and a single **carpel** develops into a fruit called a **legume**, which is like a pea pod. The flowering stem bends over and lies near the ground, where it is out of the wind and warmer. The remains of the **style** and **stigma** can be seen at the end of the **pod**. The pods droop, unlike the pods of yellow oxytrope, which are upright.

DID YOU KNOW?

The size of the plant is an indication of the amount of sun it gets, whether or not it is in a sheltered location, and the water and mineral availability of the site. Under bad conditions, milk-vetch plants are only 5 centimetres tall, while under the best conditions they may be as tall as 15 to 25 centimetres.



Yellow oxytrope

Scientific name: *Oxytropis maydelliana*

Inuktitut name: Airaq

ROOTS/STEMS

Oxytropis maydelliana is a **perennial** herb. This yellow beauty has a long carrot-like **taproot** that enables it to find moisture more readily in the dry Arctic climate. It grows between 10 and 30 centimetres high.

LEAVES

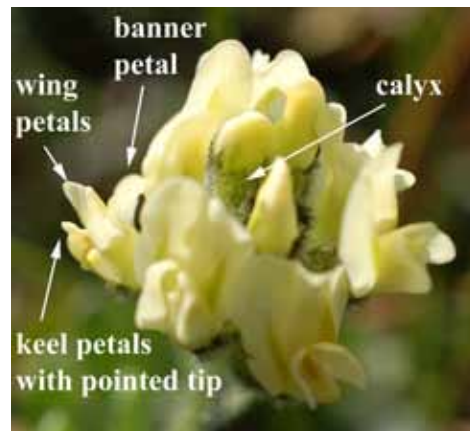
The **compound** leaves are divided into **leaflets** that are **opposite** each other on the main **vein** of the leaf. Yellow oxytrope leaves may have between five and seventeen leaflets. The leaves have **petioles**. The leaves remain on the plant even after they have died, providing some protection for the plant against the elements.

FLOWERS

This plant is easily recognizable by its **clusters** of yellow flowers. If you look closely you will notice that the flowers are at the end of a leafless stem, and there can be two to nine flowers per **inflorescence**. Yellow oxytrope has a **raceme**, which is an unbranched central stem with flowers on small stalks. The **calyx** is covered with a mixture of white and black hairs. The flower structure is the same as that of alpine milk-vetch.

FRUIT

Each of its flowers, if fertilized, will develop into a **pod** that can house five to twelve peas or seeds. The pods of this species point upwards. When the seeds are ripened, the pod will split open, and the seeds will fall out. If the conditions are right, these seeds can grow into whole new plants in the spring.



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DID YOU KNOW?

Some of the smaller roots of the oxytrope have tiny **nodules** that fix nitrogen. Inside the nodules are bacteria that convert nitrogen gas from the air into ammonium and then to nitrates. Plants need this form of nitrogen to grow, and Arctic soils are usually very poor in nitrogen products. Plants are often much larger around animal burrows, or at sites where trash has been burned. Members of the Fabaceae family are the only flowering plants in the Arctic that have this inner source of nitrogen. When they die, the nitrogen they have is returned to the soil, which helps make it richer for the other plants around.

TRADITIONAL USE

When there is blubber available, [the roots] can be used for food. You would cook the blubber and fry the roots—they can be used for food. I think that eating them straight might not be good, but when mixed with blubber, they make good eating. They would get soft as they were fried in an oil.

Z. Innuksuk, interviewed by Leah Otak (March 18, 1999)

We ate the roots fried in seal fat as soon as the snow melted.

Tuqassie Killiktee

According to Inuit elders, its long roots are sweet when eaten raw. Young roots are yellowish green, while the older, more **fibrous** roots are brown. These are good for stomach aches and to help with diarrhea. This root was also given to babies to suck on while being carried in amautiit. The children liked the juice and thus were able to fall asleep easier.



Ground birch

Other common name: Dwarf birch

Scientific name: *Betula glandulosa*

Inuktitut name: Avaalaqiat, napaaqturulaat

ROOTS/STEMS

When we think of trees, a lot of us think of a plant that is much taller than we are. This is, of course, not the case in the Arctic. In the Soper Valley on Baffin Island, these birch trees can grow up to 1 metre high, which is only as tall as a three-year-old child. However, throughout most of its Arctic range, this dwarf birch is a **shrub** that grows along the ground instead of up and is often less than 20 centimetres tall.

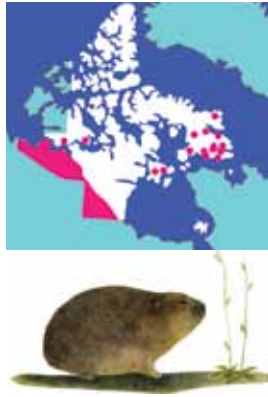
Betula glandulosa can have one or more main branches. The branches range in colour from red-brown to dark-brown. It gets its name from large, raised, resinous, wartlike **glands** that grow on the stems and branches. When the glands are swollen, they are like little clear bubbles on the stem. When the glands have just burst, they look more like doughnuts. The glands contain a sticky resin.

LEAVES

The leaves are **alternate**, and are arranged in a loose spiral up the stems. They have short **petioles**. The leaf **blades** are variable in length, from 5 to 40 millimetres long and just as wide. The size of the leaf is an indication of how suitable the environment is for the growth of the plant, or the stage of the growing season when the leaves expanded. The leaf blade is round or oval. The upper surface is dark green and shiny and the underside may have hairs or glands along the **veins**. The edges of the leaves are scalloped.

FLOWERS

Ground birch has **inflorescences** that are called catkins, just like willow flowers. Birch plants have both male and female catkins on the same plant. The male catkins are usually born towards the ends of the branches. When they first appear they are a deep red colour. After they shed their pollen, they die and drop off the plant, usually by mid-summer. The male catkins have **scales** and inside the scales are tiny flowers with three **anthers** each. The female catkins are usually larger and yellow-green. They also have scales and two to three flowers. These have an **ovary** composed of two **carpels**, surrounded by the **receptacle** of the flower. In the ovary there is a single **ovule**.



FRUIT

Betula glandulosa has a dry, one-seeded winged fruit, a **samara**. When the fruit is mature, it is 1.5 to 4 millimetres long. The outer wall develops wings, which are narrower than the centre of the fruit. A samara is a special form of **achene**.

DID YOU KNOW?

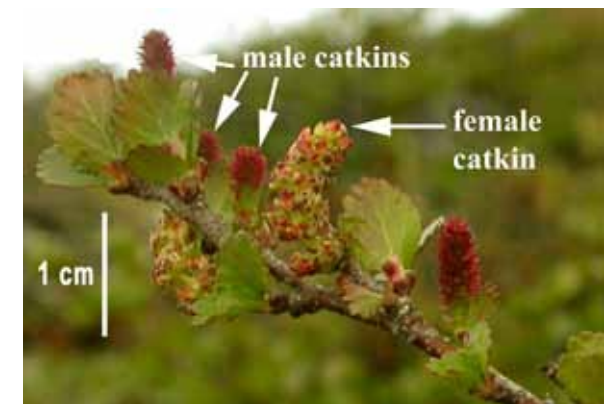
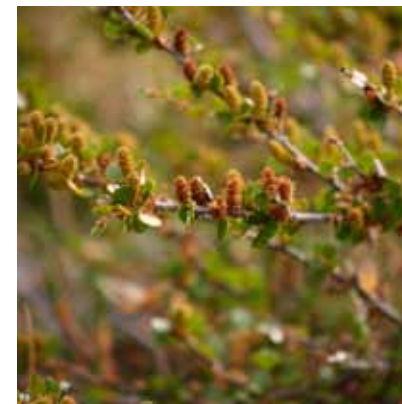
Betula glandulosa, in the Arctic, rarely produces seeds capable of growing new plants—this may be due to the short growing season, or the lack of nutrients in the soil. Instead, the birch plant sends out stems that lie on the ground, and which then develop roots at the **nodes** that eventually grow into new plants at the new location. No sexual reproduction has occurred, thus genetically the plant is exactly the same as the parent plant.

TRADITIONAL USE

Dwarf birch was a useful plant when Inuit were still living mainly on the land. It was their bedding of choice because it did not flatten under a sleeping person as did some of the smaller twigs. Sometimes, because avaalaqiat was not available everywhere, women would collect the straight, long twigs and tie them together with sinew.

They would produce a wonderful bedding mat that could be rolled up easily or simply rolled out.
Mark Kalluak (October 25th 2002)

Dwarf birch was also used as firewood, and was a nice flavouring when drying meat. It was easy to make a broom out of birch twigs, or pegs to keep the edges of drying skins stretched.



Mustards

General Overview

Scientific name: *Brassicaceae*

Worldwide, this family has about 3,700 species. In Nunavut there are more than 40 species, none of which are economically important and few of which have Inuktitut names. In Nunavut, there are species in 11 genera in the family. Many of the plants in Nunavut have tiny white or yellow flowers that are less than 5 millimetres across. The largest genus is *Draba*, which has more than 20 species. They can be so difficult to tell apart that **botanists** have to examine the leaves under a microscope and decide whether or not there are hairs present on both surfaces, and if there are hairs, whether they are straight, branched, or forked.



ROOTS/STEMS

In the Arctic, most of the species are **perennial** herbs. Three species are **biennials**, plants that live for two years and then die (Arctic wallflower, scurvy-grass, and tansy-mustard). Many plants have **taproots**.

LEAVES

The leaves are **alternate** and often grow close to the ground in **rosettes**. The **blades** can be uniform with smooth edges, or have edges cut into deep **lobes**, or even have **compound** leaf blades.

FLOWERS

The **inflorescences** have flowers on short stalks that bloom from the bottom up. In some Arctic species, the main stem between the flowers is short and the flowers are gathered together in a **cluster** at the top of the stem. The structure of the flowers is extremely uniform in this family, unlike that of any other family.



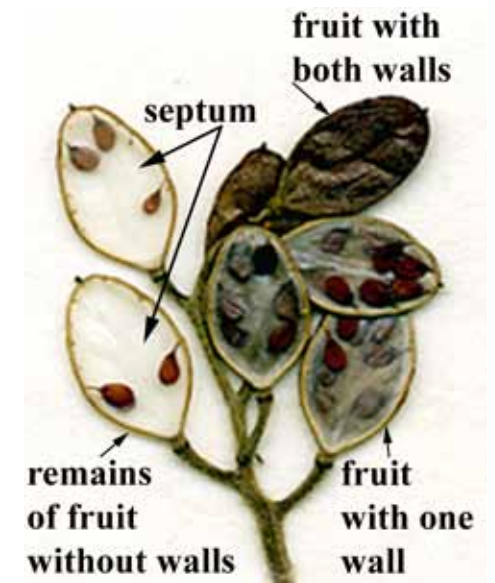
The flowers have four pouchlike **sepals** and four **petals** that are longer than the sepals. In many species the flowers have a lower portion within the **calyx** (called the claw) and a wider part to the petal, which opens out to become a flat surface that insects can land on. The flowers have six **stamens**. Four of these have longer filaments and are higher in the flower than the other two. The **ovary** has two **fused carpels**, with short **styles** and **stigmas** with two lobes. The flowers are insect-pollinated. Insects are attracted to the flowers by nectar that is produced at the base of the stamens and stored in the pouchlike sepals. They land on the platform provided by the petals and in searching between the petals for the sepals they pick up pollen from the anthers. This pollen will travel with them and pollinate other plants of the same species.

FRUIT

The fruit is a special form of podlike **capsule** known as a **silique**. The fruit are made of two carpels, with the seeds born on the edges of the carpel walls, where they are joined together. Across the middle of the fruit is a transparent wall (**septum**). Fruit in this family open from the bottom upwards. Eventually the outer walls fall away, often leaving the seeds still on the septum.

DID YOU KNOW?

This family contains economically important flowering plants such as broccoli, cabbage, cauliflower, radish, and turnip. Many members have a group of chemicals (glucosinolate compounds) that have the smell of mustard or plants like cabbage when they are being cooked. Arctic plants do not produce much of these chemicals in the short growing season.



Bitter cress

Scientific name: *Cardamine pratensis*

Inuktitut name: Turmaujuit, tuqtaujuut



ROOTS/STEMS

These **perennials** grow from 10 to 20 centimetres high. The stems grow straight up, without any branches. The plants have **fibrous** roots and a **caudex** at and below ground level. They may sometimes produce new plants when the central **axis** of the leaf lies along the ground and produces roots.

LEAVES

The leaves are **compound**, with 13 to 15 **leaflets** (small complete leaf divisions) per leaf. The leaves on the flowering stem are **alternate**. The leaf **blades** are 35 to 45 millimetres long. The leaflets are 5 to 9 millimetres long, and **opposite** each other on the mid-vein. The leaves are smooth and thick and attach to the stem via **petioles** that can be from 15 to 60 millimetres long.

FLOWERS

The **inflorescence** has an unbranched central stem with flowers growing on **pedicels** out to the sides. The flowers at the bottom open first. This type of inflorescence is called a **raceme**. In *Cardamine pratensis* there are usually eight to fourteen flowers per **cluster**. The flowers each have four white or pinkish **petals**, with darker **veins**. They are 11 to 12 millimetres long and 4.5 to 6 millimetres wide. The flower's structure is typical of members of this family.

FRUIT

The fruit of bitter cress is a dry, smooth, yellowish **siliqua**, without the **calyx** for support. The siliqua is long and thin (12 to 15 millimetres long, 1.5 millimetres wide). There are about ten smooth, brown seeds per siliqua.

DID YOU KNOW?

Cardamine pratensis is usually found in wet meadows, around ponds, or along streams.

The common name “cuckoo-flower” comes from the basal leaves that are very variable in shape, sometimes even fernlike. As a result, they are considered either “crazy” or “cuckoo.”



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Brassicaceae - Mustards



Scurvy-grass

Scientific name: *Cochlearia groenlandica*

Inuktitut name: Tipitsiariktut nunarait



ROOTS/STEMS

These plants are **biennial** herbs. In the first year, this plant grows leaves. The plant does not flower. The leaves produce food reserves that are stored in the **taproot** over winter. The following season, the plants flower and produce seeds, after which they die. The smooth stems of these plants either are **erect** or grow along the ground. They can grow between 2 and 32 centimetres high. This species is one of the most variable plants in Nunavut. It can be as small as 5 centimetres high, growing flat along the ground in the High Arctic, or it can be large and lush and grow to 30 centimetres or higher if it grows under bird cliffs, where it receives extra nitrogen from bird droppings.

LEAVES

First-year leaves are such a characteristic shape that the plants can easily be identified as seedlings. In the first season, they have spoon-shaped leaves with long handles growing in a **rosette**. While the leaves formed in the first growing season have long **petioles**, those formed the next summer have short or no petioles. All of the leaves are smooth.



FLOWERS

The smooth and leafy flowering stems are taller than the leaves at the base of the plant. There are two or more flowering stems per plant. The flower **cluster** is a **raceme**, which is an **inflorescence** that has an unbranched central stem with flowers growing on separate stalks. The flowers at the bottom open first. In the High Arctic, when the plants start to flower, the flowering stems lie along the ground, but as the flowers open, the stems rise up above the ground. There are 15 to 20 small flowers per inflorescence. Each flower has four green and purple **sepals** that make up the **calyx**. Each flower also has four white **petals** that are larger than the sepals. The petals are shaped like eggs, with the widest end away from the centre. The flowers are typical of this family.

FRUIT

The fruit is a dry, oval-shaped **silique**. The flowering stem elongates and can be as long as 15 centimetres as it sets fruit. The siliques are black and yellowish, and do not have hairs on their surfaces. Inside they have 10 to 16 orange-brown seeds that are about 1 millimetre long.

DID YOU KNOW?

Cochlearia groenlandica has fleshy leaves, meaning that they are thicker than most leaves. This allows water to be stored in the plant for times when water is lacking.

TRADITIONAL USE

The leaves of this plant were eaten raw or cooked in the spring by both early explorers and Inuit. Their taste is a bit peppery and they are a good source of Vitamin C.



Wallflower

Scientific name: *Erysimum pallasii*

Inuktitut name: Nunaraapiit

ROOTS/STEMS

Arctic wallflower can either be a **biennial** or a short-lived **perennial** herb. *Erysimum pallasii* has a long, carrot-shaped **taproot** and a thickened, unbranched **caudex**. The stems are **erect** and slightly hairy and grow between 7 and 25 centimetres high.

LEAVES

The leaves grow in a **tuft** at the base of the plant. For at least the first year, these plants don't flower, and all that can be seen of the plants is the leaves. The basal leaves are 30 to 50 millimetres long, and narrow. The leaves become smaller up the flowering stems. They may be hairy on the top surface, but smooth underneath.

FLOWERS

The flowering stems are hairy and have many flowers. The **inflorescence** can have between 8 and 25 flowers. Each flower is attached to the main **axis** by a **pedicel**, forming a **raceme**. On a raceme, the bottom flowers bloom first. Each flower has four green and purple, hairy **sepals** that make up the **calyx**. The structure of the flowers is typical for the family. Most plants have purple **petals**, but sometimes there are plants that have white flowers instead. The flowers are very sweet-smelling.



© CMN



FRUIT

The fruit are born on a stalk 10 to 16 millimetres long. The **silique** is an elongated cylinder (60 to 100 millimetres long, 2 to 3 millimetres wide) that curves slightly and splits open when the seeds are ripe. The hairy purple siliques hold 25 to 35 brown seeds each. The seeds have rough surfaces.

DID YOU KNOW?

The flowering stem elongates as the season progresses. When the flowers first start to bloom, the stem is so short that the flowers are among the leaves. Later in the season, the flowers are much higher than the leaves.

There is another member of this family in the western Arctic, *Parrya arctica*, which has flowers the same colour and size as the wallflower. The leaves are shorter and wider than those of the wallflower (12 to 30 millimetres long, 3 to 5 millimetres wide). The fruit are shorter (10 to 25 millimetres long) and wider (3 to 5 millimetres wide), with a somewhat lumpy and wavy outline.



© CMN

Alpine bearberry

Red bearberry

Scientific name: *Arctous alpina*, *Arctous rubra*

Inuktitut name: Kallat (Coral Harbour), kublak

ROOTS/STEMS

Bearberry plants are low **shrubs**. *Arctous alpina* grows between 10 and 30 centimetres high, while *A. rubra* can be a little taller (20 to 45 centimetres). The stems can grow up, or along the ground. They grow in every direction and become tangled, forming mats.

LEAVES

The leaves of *A. rubra* are **deciduous**, while those of *A. alpina* are not. With *A. alpina*, some of the leaves stay on the plant over winter, and there is a large buildup of dead leaves around the base of the plant that provides a layer of insulation to keep the branches safe from the destructive winds in the winter and to hold water near the plant in the spring. *A. rubra* has much less of a buildup. The leaves grow along the stems in a loose spiral, ensuring that each leaf is exposed to as much sunlight as possible. The leaves turn bright red in the autumn, adding beautiful colour to the tundra.

FLOWERS

The flowers can be solitary or in loose **clusters** of two to four flowers. These small flowers have five pale green or yellow **sepals** that are **fused** at the base and look like a small plate when the flowers open. The five pale, yellowish green **petals** are fused to form a bell-shaped flower. The petals are approximately 3.5 millimetres long, with about 0.5 millimetres folded back as **lobes**. Inside the bell **corolla**, there are ten **stamens** like those of Arctic heather. They open by **pores** at one end and have horns at the other. The **ovary** has five **carpels**, a **style**, and a **stigma**.



Arctous rubra

Arctous alpina



A. rubra © CMN



A. rubra © CMN

FRUIT

The fruit of *A. alpina* are round, smooth, and black, while the fruit of *A. rubra* are round, smooth, and red when ripe. Although the fruit of these plants are berrylike, they are technically an **aggregate** of drupelets. An example of a **drupe** would be a cherry. In *A. alpina* and *A. rubra*, the five carpels in the flower each become a drupelet. Each drupelet has a wall with a fleshy portion and a stony portion. Inside there is a single seed. There are only five seeds in a bearberry fruit, while crowberry fruits have more.

DID YOU KNOW?

Last century, the Arctic bearberry species were considered to be in the genus *Arctostaphylos*. Most of the species in that genus occur on the central coast of California. The Arctic species are different because the leaves have finely toothed margins, and the edible fruit contain five seeds. Fruit of *Arctostaphylos* are not good for eating, and contain ten drupelets. These differences led **botanists** to decide the Arctic plants should be in a different genus.

TRADITIONAL USE

The leaves of the plant were picked and used to make a tea to relieve stomach aches. The berries were, and still are, picked to eat. They are very juicy, but rather tasteless and dull. They are often mixed with other berries.



A. alpina © CMN



A. alpina © CMN

White heather

Scientific name: *Cassiope tetragona*

Inuktitut name: Itsutit, qijuktaat

ROOTS/STEMS

Arctic white heather is a dwarf **shrub**. These plants tend to grow together in big groups and are generally about 5 to 10 centimetres high. The stems can either be **erect** or grow along the ground.

LEAVES

The leaves stay on the plant all winter and become a dull brownish colour. They return to green as the new spring season moves along. The leaves are 2.5 to 3.5 millimetres long. They are arranged on four sides of the stems and look like a braid as they overlap each other tightly and hide the stem. The margins on the upper surface of the leaf roll under so much that they meet on the underside of the leaf, making a dark line that can be mistaken for a **vein**. The exposed surface of the leaf has a thick waxy coating, which is why the plant burns well. The top surfaces of the leaves are smooth, while the undersides are hairy.

FLOWERS

Near the growing tip of the stem, several flower **buds** may develop at the junction between a leaf and a stem, but usually only one or two become mature flowers. Each flower grows on a tiny leafless **pedicel**. As the flowers mature, the pedicel elongates, carrying the flower above the leaves. These small, bell-shaped flowers nod when in bloom. They have five **fused** white **petals**. The **calyx** is not fused, but is rather in five separate parts. It is green when young, but as the flower gets older, it becomes reddish brown. The five **sepals** are smooth and tiny compared to the petals.

If you turn a flower over you see what an insect entering the flower experiences. There are ten **stamens** with trailing horns that hold the **anthers** away from the petals and near the **style**. When the anthers are mature, they are small cylinders with **pores** at the top, which open to shed pollen. In the centre of the flower there is a single style with a **stigma**. Beside



the **ovary** there are **nectaries** containing sugary water. To get to the sugar, an insect needs to push past the anthers. In doing so, the insect is likely to pick up pollen if the anthers are ripe, or deposit pollen from another flower on the stigma if it is receptive.

FRUIT

After the ovary has been fertilized and the fruit is developing, the stem that was bent over so the flower pointed towards the ground, straightens up. A dry reddish or orangey brown **capsule** develops. When the fruit is mature it splits into the five **carpels** that formed the ovary, and these later open to shed many seeds.



DID YOU KNOW?

One of the Inuit names for this plant is itsutit, or “fuel for the fire.” This heather burns with a hot flame, so it was used as fuel for fires in the summer.

TRADITIONAL USE

In fact I did put up some inuksuks to divert caribou. I have heard that these were put up so that caribou could be steered towards the lake and they could swim across. So with small inuksuks, we used heather plants by placing them on top of the inuksuk. These plants tend to move around with the wind so that caribou would change their courses when they suspected that these formations would take them to the water.

Noah Siakuluk, interviewed by Louis Tapardjuk (August 24, 1996)

Qijuktaat also make good bedding, as they soften the hard ground; however, it would be better to have something on top of it because they make ruffling sounds. They do not make a good pillow, but they do make good bedding. Whenever you move, they make ruffling sounds. First you would light a piece of canvas, then as it starts to smolder on the edges you would snuff out the ember by pressing it. Once that is done, the burnt canvas can be placed below the angmaaq [flint], and as soon as you strike, the sparks will set the canvas to ember. This piece of burnt canvas is known as uutalik. As soon as you strike a flint, this burnt canvas will start to smolder almost immediately, at which time you would place it among the heather plants and blow on it to make a fire. That is what I have seen. You can get yourself a fire without using a match, but of course you would have to blow on it to make a fire. The powdered plant can be added for you to get a fire going. Then you place it among cassiope plants, and soon you get yourself a nice camp fire.

Abraham Ulaajuruk, interviewed by Louis Tapardjuk (March 17, 2001)

Crowberry

Scientific name: *Empetrum nigrum* subsp. *hermaphroditum*

Inuktitut name: Paurngait



ROOTS/STEMS

Empetrum nigrum is a dwarf or low **shrub** that is usually less than 15 centimetres high in Nunavut. Occasionally in warmer areas or close to rocks it can grow up to 30 centimetres high. The stems grow along the ground in all directions, becoming tangled and forming mats. The stems are hairy, and as they get older their outer layers become flaky.

LEAVES

The leaves attach directly to the stem in a loose spiral so that they do not overlap and shade each another. They stay on the plant over the winter and change to a dull brownish colour. They turn green again in the spring. The leaves are tiny, straight, narrow, glossy, and densely packed on the stem. The leaves are also leathery and fleshy and the curled-under edges are surrounded by the tough outside surface of the leaf. This can be seen in young leaves, but in older leaves the margins touch. The breathing **pores** for the leaf are all on the inside surface. Moisture that the leaves give off is trapped here. This prevents the leaves from drying out when the plant is growing on bare ground or over a rock that gets hot in direct sunshine. The leaves appear smooth, but under a magnifying glass it is possible to see the tiny hairs.

FLOWERS

The flowers of the crowberry plant are easily missed since they are so tiny and they only grow for a very short time early in the growing season. The blossoms grow on little stems right in among the leaves. The flowers may have both male and female organs, or be unisexual. The male part of the flower has two **stamens** with large **anthers**. The female part of the flower has an **ovary** made up of four to nine **carpels fused** together. On top is a branched **stigma**. The flowers have three smooth **sepals** and three purple **petals**.

FRUIT

When the berries are first seen on the plants, they are tiny green balls with a black dot that was the stigma. As the fruit ripens, it changes colour to a deep red and then black. The fruit look like berries, but technically they are a more complicated fruit. Inside each fruit, each carpel has a part that becomes fleshy, and a part near the seed that becomes hard. It is the juicy part that is good to eat. When eating these “berries,” the “seeds” inside feel hard and nutty. The fruit is technically an **aggregate** of drupelets.

DID YOU KNOW?

Aside from food and medicinal uses, Inuit also used the branches of this shrub to make mattresses in igloos, and to clean the barrels of guns.

TRADITIONAL USE

The winter supply of berries could be buried in a hole in the sand lined with fat and covered with sealskin, which kept them very fresh. The berries were traditionally used differently across their growing range. In British Columbia, the berries were eaten both fresh and dried. Inuit would eat the berries fresh as well, but they also stored them in fat. They would brew the leaves and small branches into tea. Medicinally, they were recommended for people who had diarrhea.



Mountain heather

Scientific name: *Phyllodoce caerulea*

Inuktitut name: Qijuktaapait, qijuktaat



ROOTS/STEMS

Mountain heather is a dwarf **shrub** that is usually less than 15 centimetres high on the Arctic Islands. In more southern locations, it can reach a height of 30 centimetres. Its smooth stems grow both upwards and along the ground.

LEAVES

The thin, **linear** leaves stay on the plant throughout the winter. The leaf **blades** are leathery, flat, and tightly packed together. The undersides of the leaves are often hairy. The edges of the leaf blades have small fine teeth or notches. The stems and leaves are very similar to the leaves of crowberry and the plants may be mistaken as being a lush form of that species. However, mountain heather's leaves are longer and slightly wider: 6 to 10 millimetres long and 1 to 1.5 millimetres wide.

FLOWERS

The flowers of mountain heather can be solitary or have three to five flowers per **inflorescence**. These are located at the ends of the branches on small, deep red, hairy **pedicels**. The flowers are nodding. The hairy **calyx** is wine-coloured. The **sepals** are very narrow, and a much deeper colour than the **petals**, with fine **glands** on the surface. The five **fused** petals are a pale purple-pink and form an egg-shaped blossom that is open at the thinner end. Inside there are ten **stamens** with **anthers** that open through a **pore** at the top. There is an **ovary** made up of five **carpels** that has a **style** and a single **stigma**.



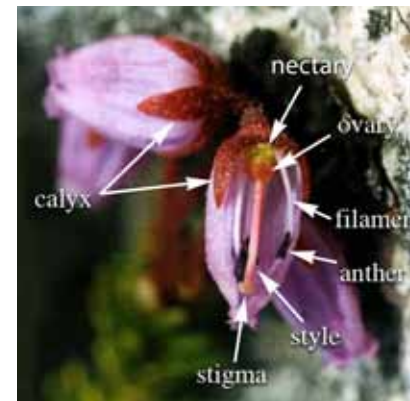
FRUIT

After the ovary has been fertilized and the fruit is developing, the stem that was bent over so the flower pointed towards the ground straightens up. A purplish red **capsule** develops but it dries to a darker brown colour. When it is ripe, it splits all the way to the base in five separate, toothed segments. The empty capsules remain on the plant. The numerous seeds are brown or yellow.

DID YOU KNOW?

In Nunavut so far, *Phyllodoce caerulea* has only been found on Southern Baffin Island, and on the mainland in the area of Baker Lake.

Mountain heather flowers fade to blue as they age, thus the reason for its Latin species name, *caerulea*, which means blue.



Susan Aiken



Large-flowered wintergreen

Scientific name: *Pyrola grandiflora*

Inuktitut name: Unknown

ROOTS/STEMS

Pyrola grandiflora is a **perennial**. This plant can grow to be 5 to 20 centimetres high. These plants have a central **taproot** and a thickened **caudex**. *Pyrola grandiflora* has elongated **rhizomes** and often forms large colonies.

LEAVES

The leaves grow at the base of the plant on **petioles**. The leaves are shiny, leathery, rounded, and noticeably **veined**. All the leaf surfaces are smooth. In the fall, the leaves turn reddish as the green chlorophyll breaks down and the key element it contains (magnesium) is removed and stored in the roots. This is the same thing that happens to maple tree leaves, but unlike those tree leaves, the leaves of *Pyrola* stay on the plant during the winter. One or two of the older bottom leaves die, but most of the leaves are able to turn green again the following spring. This is the source of the common name, which is also used for a very different species. A plant grows one or two new leaves each year.

FLOWERS

The flowering stem is pink and much taller than the leaves. This stem usually has one or two small, specialized **bracts** just below the flowers. The flower **cluster** is a **raceme**. The raceme has between two and nine flowers. The five **sepals** that make up the **calyx** are pinkish purple and much smaller than the five creamy white, round **petals**. The flowers have ten rodlike yellow **anthers** that shed pollen through **pores** at the top end. Each flower has a long, downward curved **style** with a single **stigma** on the end. The **ovary** has five **carpels**. The style stays attached to the developing fruit. These flowers are beautifully scented, and when fully opened, they face the ground.



FRUIT

The fruit is a dry, reddish, round **capsule** that has five **lobes** from the five carpels. It splits open into five separate segments when the seeds are ripe.

DID YOU KNOW?

Since the common name of the plant is wintergreen, one would think that the leaves would smell like wintergreen. This is not the case. Plants with the wintergreen oil that is extracted and used as medicine belong to a different genus.



Lapland rosebay

Scientific name: *Rhododendron lapponicum*

Inuktitut name: *Unknown*

ROOTS/STEMS

Lapland rosebay is a dwarf **shrub** that is usually between 5 to 10 centimetres far north on the Arctic Islands, but it can grow up to 80 centimetres high in protected areas around Churchill, Manitoba.

The smooth stems grow **prostrate**, except in sheltered areas where they grow **erect**. These small shrubs have many branches, as well as **rhizomes**, and as a result can grow together in large areas.

LEAVES

The leaves grow up the stems in a gentle spiral, thus getting the most sunlight possible on each leaf. The leaves turn brown over the winter and the **glands** on the surface of the leaves become very conspicuous. The leaves do not fall off the plants as the snow begins to fly. As spring approaches, the leaves turn green again and resume active growth. The leaves are leathery and flat, and can be either oval or elliptical. The leaves have tiny **petioles**, and the **blades** are 4 to 12 millimetres long and 3 to 6 millimetres wide, spreading from the stem. The blade surface is pitted with glands that are very dense and appear as pockmarks.

FLOWERS

These stunning purplish pink flowers are up to 2 centimetres across when fully open. The flowers open before any new development in the leaves. They occur in small **clusters** at the ends of the branches. There are usually three flowers per cluster, although there may be as few as one and as many as six or more.

The **calyx** is made up of five brown, smooth **sepals** that are **fused** together at the base. It is shaped like a wheel. The fragrant **petals** are purple, but fade to pink as they age. The **corolla** is also shaped like a wheel, but with five **lobes**. The flowers have ten **stamens**. These have long **filaments** and small **anthers** on top that open with a **pore**. The flowers



have a **style** that is as long or slightly longer than the stamens, and curves so that the **stigma** is upward in the flower. The **ovary** has five **carpels**.

FRUIT

The dry, cone-shaped **capsules** are on stalks, with the calyx remaining attached into the following season. The capsules split open from the top down, revealing five teeth at the top, when the seeds are ripe. The capsule is yellowish and smooth and holds a number of seeds.

DID YOU KNOW?

If the plant is growing in a protected area, for example by the shelter of a cliff, it can grow up to 80 centimetres high. Many relatives of this species grow in the Himalayan Mountains in India.



© CMN



Labrador tea

Scientific name: *Rhododendron tomentosum* subsp. *decumbens*

Inuktitut name: Qijuktaaqpait



ROOTS/STEMS

Labrador tea is a low **shrub**, usually more than 15 centimetres high (anything from 10 to 30 centimetres is possible). The plant has underground **rhizomes** and many stems that grow parallel to the ground and intertwine so the plants become tangled mats.

LEAVES

The leaf **blades** are 6 to 15 millimetres long and 1 to 2 millimetres wide. The upper surface is smooth. The margins of the upper surface roll under. The lower surface is covered with rusty brown hairs. The new leaves stand straight up at the end of the branches and so it can be easy to see the rusty hairs on the under surface. During the summer the mature leaves are almost at right angles. The leaves are leathery and may or may not have a **petiole**. The leaves remain on the plant all winter, turn a deep green, and lie downward against the stem. The leaves have a wonderful smell when crushed, and you might notice it while walking on the land.



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FLOWERS

There are between five and twelve white or pinkish flowers per **inflorescence**. The flowers develop from inside the base of brown scaly leaves that are visible when the **flowering heads** are in **bud**. As the buds open, the stalks underneath grow from 5 to 25 millimetres long. The flowers have five **sepals**, but they are difficult to see. The five **petals** are 5 to 7 millimetres long and are joined only at the base. The ten **stamens** have **filaments** that are longer than the petals, with small **anthers** at the top. In the centre of the flower is an **ovary** with five **fused carpels** and a **style** that has a platelike **stigma** on top.



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FRUIT

As the fruit ripens, the stalk that held the flower upright while it was blooming bends over to face the ground. The ovary develops into a dry, brown, roundish, and smooth **capsule** that splits open when the seeds are ripe. This capsule is different from most in that it splits open from the base upwards the same way an umbrella opens. Each capsule contains many seeds.

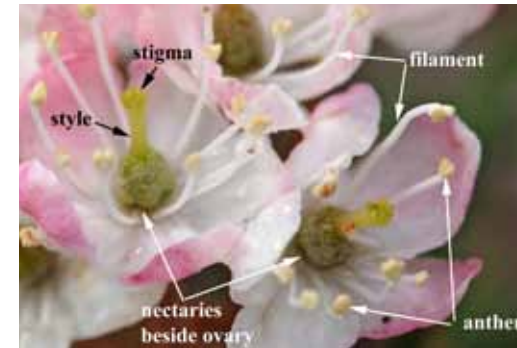
DID YOU KNOW?

The Inuktitut word for Labrador tea means “a large amount of fuel for a fire.” The plants in Nunavut have smaller, more tightly rolled leaves and flowers with petals that are a different shape than those in Labrador. Some **botanists** have considered the Nunavut plants to be a different subspecies.

TRADITIONAL USE

Labrador tea has many uses, medicinal and other. The Inuit of Baffin Island used the stems as a sort of chewing tobacco, and the leaves were put in the actual smoking mixture. The leaves and stems can also be used to boil into a tea, although it should not be boiled for longer than ten minutes because of a chemical **compound** it contains. Even the flowers can be collected and added to the drink. Inhaling the vapours from this tea helps to clear congested nasal passages.

The tea was also used as a calming agent before surgery, as a way to strengthen a person after serious bleeding, and as a remedy for bladder problems. It was generally taken for any aches or pains. For sore throats, Labrador tea could be mixed with seal fat and rubbed on the outside of the throat.



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Blueberry

Other common name: Bilberry

Scientific name: *Vaccinium uliginosum*

Inuktitut name: Kitgutangirnait

ROOTS/STEMS

Vaccinium uliginosum is a dwarf **shrub** that is usually less than 15 centimetres high. The stems can be much longer than 15 centimetres, but they lie close to the ground, so they are not very tall plants. Where the branches touch the ground, roots can develop. The stems can either be smooth, or have a few hairs. The new year's growth, however, is different because it has a flaky bark or outer covering.

LEAVES

The leaves of this plant are bluish green in the spring and summer but turn red in the autumn, after which they fall off the plant, meaning that they are **deciduous**. The leaves grow on the branches in a loose spiral so that the leaves receive the maximum exposure to sunlight. Most of the leaves grow toward the end of the branches where the current season's growth happens. The thin leaves are egg-shaped in outline, a dull green on top and a more bluish green underneath, with prominent **veins** in a netlike pattern. All surfaces of the leaves are smooth.

FLOWERS

The flowers develop at the base of the leaf where it joins the stem. The flowers can either be solitary or there can be two or three growing in a small **cluster**. The flowers are small, bell-shaped, and pink with white. They are made up of a dark pink or red **calyx** and a pinkish white **corolla**. The calyx is composed of five smooth **sepals** that are **fused** at the base. The corolla is completely fused but has five **lobes** at the mouth of the bell shape. Inside the **petals**, there are ten **stamens** that have **pores** on the top. These open to shed pollen. On the bottom, there are horns to hold the **anthers** away from the petals and near the centre of the flower. There is a large **stigma** on



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top of the **ovary**, which has five **carpels**, in the centre of the flower. This is best seen when the ovary becomes a fruit.

FRUIT

The fruit is a true **berry** that attaches directly to the stem. It is fleshy, round, and blue when it is ripe. It contains no hard parts except the small black seeds.

DID YOU KNOW?

Blueberries that are not ripe yet are called nanuq in Inuktitut, which means polar bear. They are so called because unripe blueberries are white, just like the animal they are named after.

TRADITIONAL USE

The Inuktitut word for blueberry is kigutangirnait, which means, "that which causes the teeth to be removed." They were called this because they left little black pieces on the teeth (Ootova et al, 2001). Both Dene and Inuit used the leaves of the bilberry plant in teas, and of course everybody loves to eat blueberries freshly picked off the plant. Inuit also preserved blueberries in seal oil or fat to be eaten later.

We used to use berries for a pudding in the summer, especially when we were staying in a location where they grew. A mix would be prepared with berries. We used to feast on pudding. Then we could also use kigutangirnat, but each type of berries would not be mixed at the same time. One type of berries did not mix well with another type.

Z. Innuksuk, interviewed by Leah Otak (March 18, 1999)



© CMN



Mountain cranberry

Scientific name: *Vaccinium vitis-idaea* subsp. *minor*

Inuktitut name: Kimminait



ROOTS/STEMS

Mountain cranberry is a dwarf **shrub** that usually grows between 2 and 10 centimetres high. It creeps along the ground and can cover large areas. The stems can either grow up, usually leaning on something like a rock, or along the ground. **Fibrous** roots can sprout from the stems where they are lying on the ground. Old stems are smooth, while the new stems may have a few hairs.



LEAVES

The leaves stay on the plant all winter. In the fall, they turn a dull reddish brown but return to green in the spring. They are oblong or elliptical, leathery, smooth, and have edges that are slightly rolled under. The top surfaces of the leaves are very shiny. The leaves have tiny stalks (1 to 1.5 millimetres long). The **blades** are 4 to 12 millimetres long and 3 to 8 millimetres wide. The base of the leaf is shaped like an ulu. The blade surface has one obvious **vein**. There are no **glands** on the upper surface. The few on the under surface can be seen as small brown dots.

FLOWERS

There are small **bract** leaves on the main stem of the **inflorescence** and the flowers are born at the base of the bract leaves. The flowers have very short stalks and five tiny reddish **sepals** that are very conspicuous against the white or pale pink of the much longer (5- to 6-millimetre) **petals**. Inside the bell-shaped petals are eight to ten **stamens** that have long, tubelike **anthers** that open at the top through **pores**. The part of the **ovary** that will become a fruit can be seen below the sepals on the outside of the flower.



Susan Aiken

FRUIT

The fruit is a shiny, red, fleshy **berry**. The berries are smooth and do not split open when the seeds are ripe. There are lots of tiny yellow seeds inside the berries. The fruit is a little acidic, but very tasty.

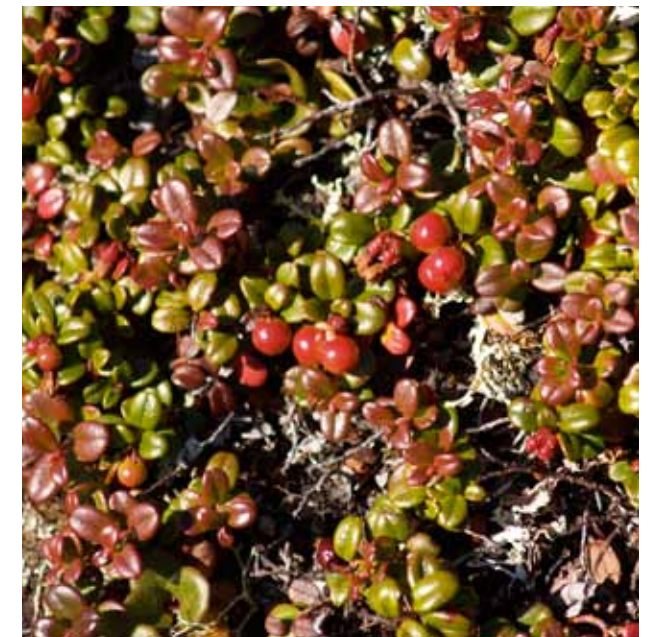
DID YOU KNOW?

The berries are tastier once they have gone through the first frost. The berries stay on the plant even in winter, and can still be eaten in the spring.

TRADITIONAL USE

In the past, the Inupiaq people would collect the berries in great quantities. They would be eaten mixed with meat, fats, fish eggs, fish, or blubber. Cranberry juice is good for kidney problems, and you can make a tea from the leaves that is good for a cough.

Traditionally, the Inupiaq used to keep the berries over winter by storing them in long, shallow birchbark baskets with tight lids in an underground pit or in a tree.



Lapland pincushion

Scientific name: *Diapensia lapponica*

Inuktitut name: Piruqtut nunaralikuluit



ROOTS/STEMS

Lapland pincushion is a dwarf **shrub** that upon first glance does not look like a shrub at all. These tiny shrubs grow between 1 and 5 centimetres high. They form tightly packed, roundish clumps of stems and leaves called **cushions**. These cushions are layered with overlapping leaves.

Underneath all the stems, growing in the soil, there is a long **taproot**. There are also short, underground **rhizomes**. The above-ground stems are smooth and **erect**.



LEAVES

The leaves of *Diapensia* densely overlap in tight spirals. The leathery leaves attach directly to the stems, without stalks or **petioles**. The leaf's top surface is shiny, and the leaves are narrow and usually somewhat curved under at the edges.

The leaves are yellowish green at the tips. In the summer, the leaves are pale at the base, and as fall approaches they turn dark burgundy. Most of the leaves stay on the plant over the winter. When the snow melts and the plants are visible again, they are still their burgundy fall colour. As the growing season continues, the leaves slowly turn green.



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FLOWERS

The flowering stems have no leaves and are smooth. The flowers are usually solitary, but there may be two or three per stem occasionally.

The smooth **calyx** (made up of five **sepals**) can be green, yellowish, or pinkish. The five **petals** are **fused** together at the base, but free halfway up. They



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form a cup-shaped **corolla** that can be white, cream, or pink. The **anthers** are attached at the gaps between the petals.

The anthers are unusual because they open inwards toward the centre of the flower. In most plants the anthers open outwards. In the centre of the flower there is a **style** with a single **stigma**. The **ovary** has three **carpels** and near the ovary there are **nectaries**.

FRUIT

The fruit is a dry **capsule** that is still surrounded by the calyx. The capsule is shaped like an egg and it is **dehiscent**. It can be brown, red, or even yellowish pink. It can hold anywhere from 27 to 128 brown seeds.

DID YOU KNOW?

Sometimes if a plant is growing squished between a rock and something else, it will send out a longer rhizome than normal to get by the rock. This rhizome will produce a small **cluster** of tightly packed leaves and stems at its tip, and a new plant will begin.



Diapensiaceae - Diapensia



Arctic thrift

Scientific name: *Armeria maritima* subsp. *sibirica*

Inuktitut name: “Carnation,” immulik

ROOTS/STEM:

Arctic thrift is a **perennial**. These plants may grow together in clumps, and they grow between 5 and 20 centimetres high. The top of the long **taproot** is a short, thickened **caudex**. The stems are **erect** and can be hairy or smooth.

LEAVES

The leaves grow in a **tuft** at the base of the plant. There may be many leaves in the tight tuft, making it quite large. The leaves have no **petioles**, but instead attach directly to the caudex. The leaves are long, smooth, and thin—up to 100 millimetres long, but only 1 to 1.5 millimetres wide. They resemble fine grass leaves like those of alpine fescue, except they are fleshier and without a **sheath** or **ligule**.

FLOWERS

The flowering stems have no leaves, are hairy, and are taller than the leaves. The flower **cluster** is headlike, and tightly packed, with small flowers. Right underneath the cluster are two rows of **bracts**. They are flat, smooth, and mostly green. There are 30 to 50 flowers per **flowering head**. Each flower has five white or see-through **sepals** that make up the **calyx**. The hairy sepals are joined and make a funnel-shaped tube with five segments at the top and ten ribs.

Each flower has five **petals**. When the flowers are in **bud**, the petals are red, but when they bloom, they are pink. There are five **stamens**. Their **filaments** are joined to the petals. There is a tiny **ovary** made up of five **carpels**, with a single **ovule** inside.



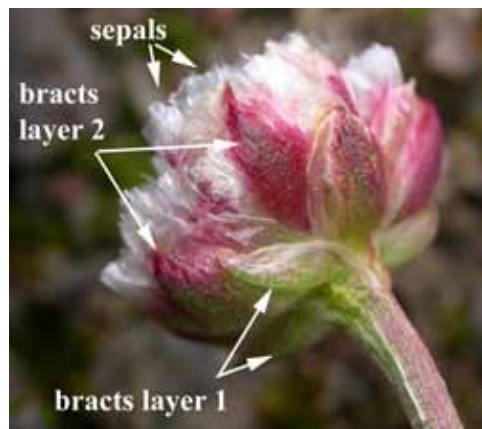
FRUIT

The fruit is dry and still surrounded by the calyx. The calyx is papery-thin and gets longer as the seeds ripen. This helps to catch the wind when the seeds are ready for dispersal. The only true **nut** found in Nunavut is the fruit of Arctic thrift. When fully formed, the nut in this species is 1 to 1.2 millimetres. It is a very tiny product of five carpels, has a woody coat, and contains one seed. It looks rather like a badminton shuttlecock and flies the same way on the wind.

DID YOU KNOW?

According to several sources, after the arrival of qallunat (Southerners), Inuit associated this pink flower with the flower on the cans of Carnation evaporated milk because the drawing of that flower looked like the plant they knew on the tundra.

Armeria maritima is the botanical name for a species of flowering plant. It is a popular garden flower, known by several common names, including thrift, sea thrift, and sea pink. It is a compact perennial that grows in low clumps and sends up long stems from which globes of bright pink flowers blossom. In some cases purple, white, or red flowers also occur.



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Seaside bluebells

Scientific name: *Mertensia maritima*

Inuktitut name: Siurap uqaujangit

ROOTS/STEMS

Mertensia maritima is a **perennial**. It grows on beaches near the sea in dense **tufts**. It has a long **taproot** that grows below the **caudex**. The stems can be between 3 and 30 centimetres long. This plant is very striking, as it has many stems that grow along the ground and branch often, so the plants become a tangled mat.

LEAVES

If you happen upon this plant while walking on the beach you will recognize it right away by its smooth, fleshy, blue-green leaves. The upper surface has tiny holes, particularly toward the tips of the larger leaves. These holes are salt **glands**. The leaves grow along the stem **alternately** and they only last for a single season.

FLOWERS

As the name seaside bluebells implies, the flowers are blue and shaped like small bells; however, when in **bud**, they are pinkish. There are four to twelve flowers per main flowering stalk, and each flower has a short stalk. The length of the stalks varies so that the flowers spread out the way sled dogs do when harnessed in the eastern Arctic fan hitch. This flower arrangement is described as being corymbose. The flowers have five **sepals** that are free for most of their length and five **petals** that are **fused** together to form a tube that opens at the end. Inside this tube, there are five **stamens** that have their **filaments** fused to the petals. The **ovary** has two **carpels**.



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FRUIT

As the ovary ripens into a fruit, the petals fall off but the sepals remain. Prior to opening, the ovary has two carpels. Each of these divides into two as the fruit develops. There is a seed in each unit, which is called a **nutlet**. When the fruit is mature, the nutlets separate. The outer coat of the nutlet becomes spongy, somewhat inflated, and waterproofed with wax. This allows the nutlets to float, so they will survive if they get washed out to sea and carried to another beach.

DID YOU KNOW?

The plants grow in environments where they receive salt from sea spray and there is salt in the substrate in which they are growing. Some of the larger leaves of seaside bluebells are covered with salt glands toward their tips. These glands get rid of salt from the leaf tissues. These glands can be seen under a magnifying glass.



Boraginaceae - Borages

Mare's tail

Scientific name: *Hippuris* ssp.

Inuktitut name: Unknown



ROOTS/STEMS

Mare's tail is aquatic. When the water freezes and the plant is caught in the ice, that part of the plant dies, but it grows again the following spring from underground stems buried in the mud. The three species in Nunavut usually grow between 4 and 100 centimetres high, with *H. vulgaris* being much taller than *H. lanceolata* and *H. tetraphylla* (both grow to a maximum of 50 centimetres). The height attained varies depending on how deep the water is. It has a single stem, without any branches. The stems grow up above the water when the plant flowers. These stems are smooth, **erect**, and reddish. These plants also have **rhizomes** that grow roots in the soft ground in order to get nutrients.

LEAVES

When these plants grow in shallow water, they may have two types of leaves—those that grow above the water and those that grow beneath. None of the leaves have **petioles**. All the leaves are smooth. The leaves that grow underwater are longer and more flexible, so they float in the water. The leaves that grow above the water are fleshier and stiffer, so they stand out straight from the plant. The leaves are arranged in a circle around the stem, in a **whorled** pattern. Different species of *Hippuris* have different numbers of leaves per whorl. *H. tetraphylla* has four leaves per whorl, while *H. lanceolata* has six, and *H. vulgaris* has eight.

FLOWERS

The tiny flowers grow where each leaf meets the stem. There are no **sepals** or **petals**, just a **stamen** and an **ovary** composed of a single **carpel**. The ovary has a slender **style**, with the **stigma** running along most of its length. The stamen grows from the top of the ovary and has a purple **anther** that splits open longitudinally to release its pollen. These tiny flowers are barely noticeable.

FRUIT

The fruit is a dry, one-seeded **achene**. In all species, the fruit is oblong, brown, and smooth. The fruit are between 1.8 and 2 millimetres long, but the fruit of *H. lanceolata* is a tiny bit wider at 1 to 1.2 millimetres wide. *H. vulgaris* is 0.8 to 0.9 millimetres wide. If there are six leaves in each stem whorl, there can be six flowers per whorl, followed by six achenes per whorl.

DID YOU KNOW?

Because the flowers of this plant lack both petals and sepals and are tiny, they are probably wind-pollinated, as there is nothing to attract insects. These tiny flowers are barely noticeable.

Botanists consider that these species are probably related to plants that live on the land, but this genus has evolved from them to be able to live in water, and in doing so, they no longer need structures like sepals and petals.

TRADITIONAL USE:

The Inupiat and the Yupik of Alaska cook these plants in water with seal oil and blood to make a soup.



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Arctic lousewort

Scientific name: *Pedicularis langsdorffii*

Inuktitut name: Unknown

ROOTS/STEMS

Arctic lousewort is a **perennial** herb. No obvious buildup of the previous season's growth occurs. Plants have a pale yellow branching **taproot** and a short **caudex**. The stems are usually from 8 to 15 centimetres high and are not branched. They are hairy, especially near the flowers.

LEAVES

The plants have two sorts of leaves. Those that grow in a **tuft** at the base of the plant are fernlike, while those near the flowers are long and narrow, with lobed edges. All the leaves are **alternate** and arranged in a loose spiral on the stem. The basal leaves have a **petiole** that can be as long as 10 millimetres. The leaf **blades** are 6 to 18 millimetres long and to 5 millimetres wide, and are deeply cut into 10 to 20 divisions. The leaf edges have fine teeth. The leaves near the flowers have no petiole, and have smaller blades with a flat central zone. The surfaces of the leaves have no hairs.

FLOWERS

The flowering stems are hairy and leafy. There are ten to thirty flowers per stem and they start blooming at the bottom of the stem. The flowers are bilaterally symmetrical, meaning there is only one way they can be cut so that both sides look the same. They have five **sepals** that are **fused** into a tube at the base but have separate **lobes** at the top. Their five **petals** are fused at the base. Near the middle, the petals divide. Two together become the **helmet**, and the three others are fused as a landing platform. In this species, the helmet petal can be purple or bright pink, 23 to 26 millimetres long, with two small teeth at the tip. The landing petal is paler. There



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are four **stamens** that have **filaments** of two lengths. When the flower is in **bud**, they lie toward the end of the helmet and can often be seen as darker spots. The flowers have an **ovary** that is composed of two **carpels** and a long **style** that protrudes between the teeth of the helmet as the flower opens.

FRUIT

The petals fall off as the fruit develops, but the **calyx** remains. The fruit is a brown **capsule**, 16 to 20 millimetres long and 5.5 to 6.6 millimetres wide. It is wider at the base and pointed towards the tip. When it is ripe, it opens at the top and down the side to release the seeds.

DID YOU KNOW?

When this species was described in 1823 from plants collected on Melville Island, it was called *P. arctica*. The same plant was described in Russia a few months earlier. When this was discovered, the official Latin name for the plant became the Russian name that was used first.

This species occurs on the more westerly and northern Arctic Islands, and sporadically on Baffin Island as well as in northern Pacific regions where the plants are larger and have fewer hairs. In Nunavut, this species is similar to the hairy lousewort, but the flowers are larger and more clearly divided into helmet and landing platform.



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Capitate lousewort

Scientific name: *Pedicularis capitata*

Inuktitut name: Kukiujait

ROOTS/STEMS

Capitate lousewort is a **perennial**. This small plant grows between 5 and 15 centimetres high. It has **erect**, hairy stems that grow up from a thickened **caudex**, with slender underground branches that spread out and behave like **rhizomes**, giving rise to new plants at their ends. **Fibrous** roots arise from these branches. The plants do not have **taproots**.



LEAVES

Two types of leaves occur on capitate lousewort. There are leaves in a **tuft** at the base of the plant, and these are attached to the stem by a narrow **petiole** that may be as long as 60 millimetres. The **blades** are much longer than they are wide and are divided into ten to twenty segments. They are **pinnate**. A second type of leaf occurs just below the flower **cluster**. These leaves are narrow, with teeth, and attach directly to the stem.

FLOWERS

The flowering stem is bare between the leaves in the basal tuft and the leaves underneath the flower cluster. As its name implies, the flower cluster is like a cap on top of the flowering stem. The flowers are bilaterally symmetrical. Each flower has five **sepals** that are **fused** at the bottom half to form a bell-shaped, green and black (or dark red) **calyx**. The five segments of the calyx may or may not be hairy. Just above the calyx are five fused, creamy yellow **petals**, and in this species the **helmet** petals are longer than the three bottom petals, which form a landing pad for insects. There are two small teeth at the tip of the helmet.

There are four **stamens** that have **filaments** of two lengths. When the flower is in **bud**, they lie towards the end of the helmet and can often be seen as darker spots. The flowers have



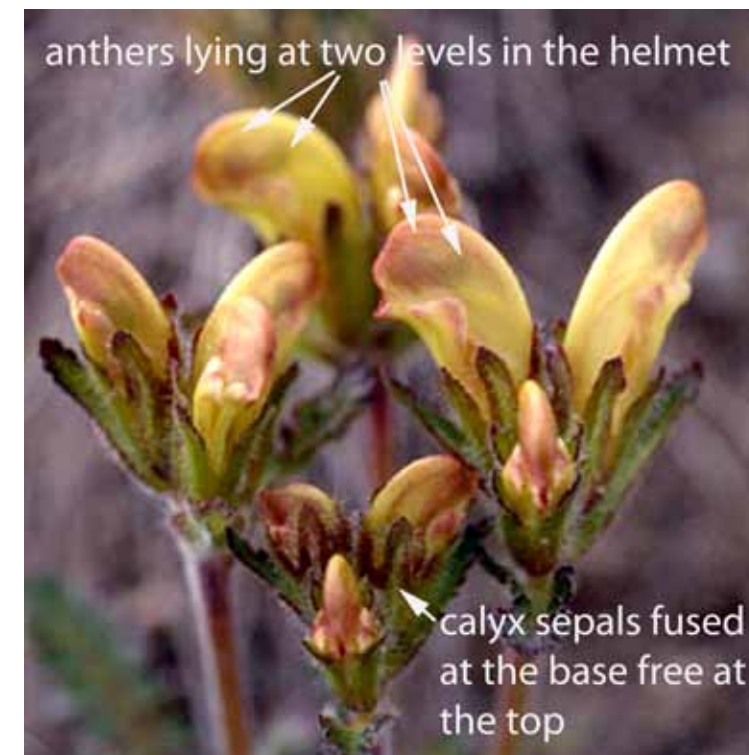
an **ovary** that is composed of two **carpels** and a 25- to 30-millimetre **style** that protrudes between the teeth of the helmet as the flower opens. The **inflorescence** of capitate lousewort does not grow taller as it sets fruit, like some of the other louseworts do.

FRUIT

The dry **capsule** has the calyx present at the base. It is an elongated cylinder or a vase-shaped, flattened fruit. It is yellow or straw-coloured and hairy, and contains a few large (0.5- to 0.6-millimetre) black seeds. When the seeds are ripe, the capsule splits open at the tip and partly down one side.

DID YOU KNOW?

Inuit call these flowers bananas since they resemble bunches of bananas. The flowers taste sweet due to the sugary solution that is in the **nectaries**.



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Flame lousewort

Scientific name: *Pedicularis flammea*

Inuktitut name: Ujungait



ROOTS/STEMS

Pedicularis flammea is a **perennial**, which means it dies back to the ground in the winter but grows again the following spring. These are small plants, between 8 and 15 centimetres high, with a central **taproot** and a thickened **caudex**. The stems are reddish purple, **erect**, and smooth.



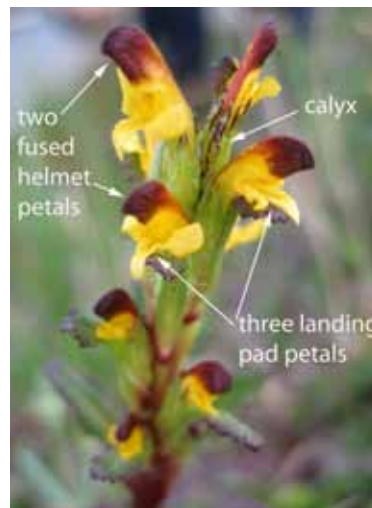
LEAVES

The basal leaves have 10- to 45-millimetre **petioles**, and **blades** that are 10 to 40 millimetres long and 5 to 10 millimetres wide. The leaves on the flowering stems lack petioles and are much smaller. The leaves are divided in such a way that they are often mistaken for fern leaves. The overall shape of the leaf is that of a rounded sword and all the edges are toothed like a steak knife or saw.

FLOWERS

The **inflorescences** are spikelike—the flowers are on short **pedicels** on a central **axis** when they are in bloom. As the fruit matures, the pedicels become longer. These flowers are bilaterally symmetrical.

The **calyx** is **fused** at the base and has four **lobes** at the top. The five **petals** are fused at their base. Two of the petals are completely fused and form the **helmet**. In *P. flammea*, the top of the helmet is brownish red, while the rest of the flower is yellow. The lower three petals form the landing pad for insects (most commonly flies) that come to collect nectar.



There are four **stamens** that have **filaments**, which are fused to the petals and lie inside the brownish red part of the helmet petal. The **ovary** has two **carpels**, a **style**, and a **stigma** that do not protrude beyond the helmet.

FRUIT

As the fruit develops, the petals drop off, but the calyx remains. The ovary ripens as a **capsule** that is 14 to 16 millimetres long and 3 to 4.5 millimetres wide. The capsule opens at the tip and partly or fully down one side when the seeds are ripe. The smooth capsule can be black, dark brown, or golden brown. There are only a few brown seeds per capsule.

DID YOU KNOW?

Once the plant has finished flowering, the stem not only grows fatter, but it also gets much taller. This growth also makes it easier for the plant to disperse its seeds over a greater distance.

The Latin name likens the colours in the flower to that of a fire flame.



Hairy lousewort

Scientific name: *Pedicularis hirsuta*

Inuktitut name: Ugjunnait

ROOTS/STEMS

Hairy lousewort is a **perennial**. This plant usually grows between 5 and 15 centimetres high. The young plants have a long **taproot**, while the older plants have a well-developed **caudex**. The stems grow straight up and are hairy. They get much hairier near the flower **cluster**.

LEAVES

The leaves grow in a **tuft** at the base of the plants, but also along the stem in an **alternate** pattern. The leaves at the base of the plant have divisions that often confuse people into thinking they've found a fern plant. As the leaves get farther up the stem, they look much less like fern leaves. These leaves become longer, with toothlike divisions all around the leaf. The leaves at the base of the plant are attached to the stem by **petioles**, while the leaves farther up attach directly to the stem, without petioles. All of the leaves are smooth.

FLOWERS

The part of the stem with the flowers is hairier than the rest of the stem, and it has many leaves. These hairs keep the air near the flower **buds** still, which helps encourage growth because the area becomes warmer when the sun is out. The **inflorescence** is a **raceme**. The whole cluster is almost shaped like a globe when in flower or in bud. The cluster changes and gets much longer as the individual flowers spread apart and open up so that insects can pollinate them, and also so that the fruit has space to form and mature. The flowers of hairy lousewort are bilaterally symmetrical.



The **calyx** of each flower is made up of five **fused sepals** that come in a variety of colours: green, purple, pink, yellow, and cream. The hairy or even woolly calyx has five **lobes** or segments at the top. Each flower has five **petals** that are fused at the base. These petals are grouped into two different parts: the **helmet**, which is the two fused petals at the top of the flower that overhang the other three petals that form a landing pad for insects. The helmet of this particular lousewort is short and stubby, with two very tiny teeth at the tip. The petals can be white, yellow, or pale pink, with the top of the helmet being a darker pink.

There are four **stamens** that have **filaments** of two different lengths. When the flower is in bud, they lie towards the end of the helmet and can often be seen through the petals as darker spots. The flowers have an **ovary** that is composed of two **carpels** and a **style** (10 to 12 millimetres long) that protrudes as the flower opens.

FRUIT

The fruit are on small stalks with the calyx still present. The **capsules** are broad, flat, golden brown, and longer than they are wide. They are hairy and contain between 15 and 25 yellow or brown, smooth seeds. They are dry, **dehiscent** capsules.

DID YOU KNOW?

There are a lot of long and complicated words used in the study of plants. For example, in order to say that the leaves of hairy lousewort are not the same in the tuft at the base as the leaves growing up the stem, we could use the word heterophyllous. Heterophyllous is made up of two Greek words: the word *hetero*, meaning the other or different, and the word *phyllous*, meaning leaf. Or to explain that the petals are not bilaterally symmetrical, we could say that the flowers are zygomorphic. Zygomorphic is also a combination of two Greek words: *zygo*, meaning paired or two, and *morphic*, meaning form. **Botanists** use Greek terms like these so they can communicate with each other about plants even when they do not speak the same languages in everyday life.

TRADITIONAL USE

The leaves and flowering stems of these plants may be used as herbs in soups or stews. The roots and young stems are also edible raw.



Labrador lousewort

Scientific name: *Pedicularis labradorica*

Inuktitut name: Unknown

ROOTS/STEMS

Unlike the other louseworts, this one is a **biennial**, and not a **perennial**. On southern Baffin Island, the only island in Nunavut where this plant has been found so far, it can grow between 9 and 25 centimetres high. On the mainland, like warmer places in Labrador, it can grow another 10 centimetres, that is, up to 35 centimetres high.

This is the only lousewort in Nunavut to have branching, above-ground stems. The stems are **erect** and hairy, with many leaves. Labrador lousewort has a small **caudex** that tapers into a **taproot**.

LEAVES

Two types of leaves are found on this plant. The leaves at the base of the plant, of which there are few when the plant is flowering, are attached to the stem by a small stalk, and are divided, looking somewhat like a feather. The upper leaves grow **alternately** along the stem. They do not have small stalks, and their edges look like they have teeth, which is different from the large divisions on the bottom leaves. All the leaf surfaces are smooth.

FLOWERS

There is a flower at the end of each branch. The **inflorescence** does not elongate as the fruit matures. There are five to ten flowers per **cluster**. Each flower has a **calyx** that is made up of five **fused**, green **sepals**. Each flower also has five creamy yellow **petals**. The petals are fused, with the top two petals forming the overhanging **helmet** and the bottom three forming a landing pad for insects. The helmet has a purplish brown cap with two small teeth at the tip.



Each flower has four **stamens** with **filaments** of unequal lengths. The **ovary** is shaped like an inverse turnip and composed of two **carpels**. There is a long **style** (11 to 14 millimetres) and a **stigma**.

FRUIT

The fruit is surrounded by the calyx. It is a dry, brown or red, smooth **capsule** that splits open from the tip down one side when the seeds are ripe. The seeds are brown or yellowish.

DID YOU KNOW?

Although this plant is not frequently found on the Arctic Islands, it is more likely to be found on the mainland between Bathurst Inlet, Baker Lake, and Rankin Inlet, and of course it grows in Labrador, where it was found first.



Lapland lousewort

Scientific name: *Pedicularis lapponica*

Inuktitut name: Unknown

ROOTS/STEMS

Lapland lousewort is a **perennial**. These plants usually grow between 10 and 20 centimetres high. The purplish brown stems are **erect** and look smooth to the naked eye, but when looked at under a microscope, it is evident that there are hairs present. Underground, there are elongated, branching **rhizomes**.

LEAVES

Lapland lousewort has two types of leaves. The leaves at the base of the plant grow in a **tuft** and are attached to the stem by a **petiole**. These leaves are narrow and are divided into 12 to 30 thin sections about 1 millimetre wide, along the main **vein** of the **blade**.

The leaves that grow up the stem in an **alternate** pattern are smaller than the leaves at the base, and they have small indentations, or teeth, rather than segments. These upper leaves also attach directly to the stems. Both types of leaves have teeth all around the edges, and they are smooth.

FLOWERS

The flowering stems have leaves, and hairs that are difficult to see with the naked eye. The flowers occur in a **cluster** at the top of the stem. At first they are close together in a compact **raceme**. As the lower flowers bloom, the **inflorescence** becomes longer. When in bloom the flowers are at right angles to the flowering stem, with the landing petal hanging down. This is unusual and makes



it easy to identify this species. As with some other louseworts, the flower cluster elongates as the fruit matures. Each flower has a **calyx**, which is composed of five **fused**, smooth, purplish red **sepals**. The yellow petals are also fused. The **helmet** (top two overhanging petals) and the landing pad (bottom three fused petals where insects can easily land) are all one colour, unlike some of the other louseworts. The helmet does not have any teeth at the tip.

There are four **stamens** with **filaments** of unequal lengths, large **nectaries**, and an **ovary** with **carpels** inside the flower. The style is 16 to 20 millimetres long, and it comes out at the mouth of the helmet when it is ready to receive pollen.

FRUIT

The calyx remains around the fruit, which is a dry **capsule**. It is about 1.5 times as long as the calyx. It is broader at the bottom and tapers to a point. This smooth, yellowish capsule splits open from the tip down one side when the seeds are ripe. There are only a few yellow-brown seeds per capsule.

DID YOU KNOW?

If you get close to these flowers and inhale, you will find that they are quite fragrant.



Pedicularis albolabiata

Scientific name: *Pedicularis albolabiata*

Inuktitut name: Unknown

Since the first edition of this book, the species described there as *Pedicularis sudetica* has been divided into two species: *Pedicularis albolabiata*, which is based on a specimen from Cambridge Bay, and *Pedicularis arctoeuropaea*, which is based on a specimen from Russia. The second species occurs in the N.W.T. and grows only in the extreme west of Nunavut (with one possible record from Coats Island).

ROOTS/STEMS

Pedicularis albolabiata is a **perennial** that usually grows between 10 and 20 centimetres high. These plants have a thickened **caudex** from which the roots grow. The stems are **erect** and smooth except near the flower, where they may have some hairs.

LEAVES

Pedicularis albolabiata's leaves grow in a **tuft** at the base of the plant. The leaves are divided into segments in such a way that they look like fern leaves or feathers. They grow from the stem on a **petiole**. The overall leaf shape is longer than it is wide and looks like a two-sided saw.

FLOWERS

The flowering stems might have one leaf, but usually there are none. These flowers are described as being bilaterally symmetrical. When the flower **cluster** is in **bud**, it is a dense globe. It gets even longer as the fruit matures.

Each flower is surrounded by a green or purple **calyx**, which is made up of five **fused sepals**. The five **petals** are fused at the base, with the top two reddish petals forming the overhanging **helmet**, and the bottom three pink petals (spotted with darker red) forming the landing pad.



The helmet has a strong curve and two small teeth at the end. There are four **stamens** that have **filaments** of two different lengths. When the flower is in bud, the stamens lie toward the end of the helmet and can often be seen through the petals as darker spots. The flowers have an **ovary** that is composed of two **carpels** and a 10- to 12-millimetre **style** that protrudes as the flower opens.

If you come across these plants, it's interesting to look down while standing right over them. The flowers are arranged in a spiral around the stem, which creates a lovely, two-toned circling effect.

FRUIT

The calyx remains around the fruit, which is a dry **capsule** longer than it is wide. The brown or black capsule splits open from the tip down one side when the seeds are ripe. The capsule contains only a few yellowish seeds.

DID YOU KNOW?

When you look down on the top of a flowering stem of this species, the helmet petals form a spiral. The species *Pedicularis albolabiata* has petals that are all much the same shade of purple. The western Arctic *P. arctoeuropaea* has petals with a distinctly pink helmet and an almost white landing pad.



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Woolly lousewort

Scientific name: *Pedicularis lanata*

Inuktitut name: Ugjungnaq

ROOTS/STEMS

Woolly lousewort is a small **perennial** that usually grows between 5 and 15 centimetres high. These plants have a thick, lemon yellow **taproot**, as well as a thickened **caudex**. The stems are unbranched, **erect**, and so hairy they are described as being woolly.

LEAVES

The leaves of this plant grow in both a **tuft** at the base of the plant, and along the stems. The leaves at the base are fernlike. The leaves have small winged **petioles** between the main stem and the flat surface of the leaf. The leaves along the stem **alternate** in a slight spiral. These leaves are smaller, thinner, and without divided segments. Instead they have toothlike indents all the way around the edges of the leaves. Both types of leaves range from smooth to woolly.

FLOWERS

The flowering stems are very hairy between the leaves. This provides air insulation near the developing flowers, and this added warmth helps them to grow. The flower **cluster** is tightly packed with flowers and woolly hairs. The cluster is almost round at first, but as the flowers reach full bloom, the cluster becomes cylindrical. As with most louseworts, the whole plant becomes even more elongated as the fruit matures.

The **calyx** is 4 to 7 millimetres long and purple or sometimes greenish, and it has dense, woolly hairs. The **corolla** has five **petals** that are **fused** at the base. The **helmet** (two fused petals) is 17 to 19 millimetres long, slightly darker than the three petals that form the landing pad, and rounded at the end, without teeth. There are four **stamens** that have **filaments** of two different lengths. When the flower is in **bud**, they lie towards the end of the helmet and can often be seen through the petals as darker spots. The flowers have an **ovary** that is composed of two **carpels** and a 10- to 12-millimetre **style** that protrudes at the bottom of the helmet as the flower opens.



FRUIT

The fruit is a dry **capsule** that is longer than it is wide. It is yellowish or brown and smooth. The capsule is **dehiscent**, and its seeds are yellowish and have ridges.

DID YOU KNOW?

Although most lousewort roots are edible raw or cooked, the whole plant is destroyed once you pick the root. Because these plants were not seen as being plentiful, they were only eaten in emergency situations. The roots are apparently good roasted or boiled.

TRADITIONAL USE

According to Porsild, Inuit children liked to pick the flowers from this lousewort and suck the nectar from the base of the corolla. The people of the Great Slave region would take small pieces of these roots that were sun-dried, and mix them with tobacco. This was then smoked in a pipe to relieve headaches.



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Arctic harebell

Scientific name: *Campanula uniflora*

Inuktitut name: Unknown



ROOTS/STEMS

These small **perennials** usually grow from 5 to 10 centimetres high. This harebell has smooth, **erect** stems with usually one unbranched stem per plant. These stems grow up from a thickened **caudex** at or near ground-level. Beneath the caudex, there is a central, pale brown **taproot**.



LEAVES

The leaves are mostly basal. Those that do grow up the stem, do so in an **alternate** pattern. Leaves growing at the base of the plant have a **petiole**, while those growing up the stem do not. The leaf **blades** are straight, narrow, and longer (10 to 35 millimetres) than they are wide (2 to 8 millimetres). The leaves are slightly leathery and dark green in colour. Both the top and bottom surfaces are smooth.

FLOWERS

The flowering stem is taller than the **cluster** of leaves at the base of the plant. It is smooth and has leaves. There is always only one flower and when in **bud**, it is parallel to the ground, but it nods a little when in full bloom. The **calyx** is made up of five green and hairy **sepals**. The five bluish purple **petals** are **fused** and form a narrow bell shape with five segments. The petals are longer than the sepals. The flower has five **stamens** of equal length. The **ovary**, which is below the sepals and petals, is made up of three **carpels**. There is a **style** and three **stigmas** per ovary.



FRUIT

The fruit is a dry, hairy, blackish **capsule**. It is **dehiscent**. There are about 100 smooth brown seeds per capsule. Although the flower nods when in full bloom, once the fruit starts to develop, the stem becomes erect. It is in a good position to shake the seeds out of the capsule when it is blown around in the wind.

DID YOU KNOW?

This delicate plant is found in many locations throughout Nunavut, often on rocky, gravelly places or near cliffs. Perhaps if more people paid attention to the flowers that are in their part of the tundra, and took note, we would have more data and then we would be able to state where exactly these plants are found!



Campanulaceae - Harebells



Aster

General Overview

Scientific name: *Asteraceae*

The Asteraceae (often called the aster, daisy, or sunflower family) is one of the largest families of flowering plants. Worldwide it has about 22,750 species spread across 1,620 genera. In Nunavut, there are more than 40 species in 17 genera, and all the plants are herbs. In other parts of the world, members of this family are **shrubs**, vines, and trees. The family is most common in the arid and semi-arid regions of subtropical and lower temperate latitudes. In Nunavut, the species occur in dry, often gravelly habitats. Many economically important products come from this family, including cooking oils, lettuce, and sunflower seeds. Several genera, such as chrysanthemums are also very popular with gardeners and people in the cut flower industry.

ROOTS AND STEMS

Most species have **taproots**, and several have **fibrous** roots. The stems usually stand straight up, but in Nunavut there are species that hug the ground. Some have a short **caudex**.

LEAVES

The leaves can be **alternate**, **opposite**, or **whorled**. They may be simple, but they are often deeply **lobed** or cut into divisions that may be further divided. The margins can be smooth or toothed.

FLOWERS

What looks like a flower in this family is a **flowering head** with many **florets** on a platform-like structure called the **involucre**. Under the flowering head, there are small **phyllaries**, often in more than one row. They function the way **sepals** do in single flowers and protect the flowering head when it is in **bud**. The flowers in the flowering heads bloom from the outside of the head inwards.



There are two distinct forms of flowers. In one, **disc florets**, the five **petals** are **fused** into a symmetrical tube at the base, with the five petal tips separate at the top. In the other, **ray florets**, the five petals are fused as a small tube at the base, but open between two of the petals so that the five petals lie flat. Often the tips of the five petals that joined to form the ray floret can be seen as small points at the end. At other times the ends of the ray petals are rounded, without points. Sometimes there are only three points. Flowering heads may have both types of flowers.

When flowers have **stamens**, there are five. The **filaments** are joined to the petals and the **anthers** lie together loosely attached at the sides, as if by Velcro. They form a tube in the centre of the flower. The anthers open inwards and release their pollen inside the flower. It is carried higher up the flower by the growth of the **style** from the top of the **ovary**. When the style grows through the tube of anthers, the two branches that will become the **stigma** are together. When they are above the anthers, the stigma branches open and spread out, often curling back so much that they come in contact with the tops of the anthers.

The ovary is below the petals of the flower. It is made up of two **carpels**, and has a single **ovule**.

FRUIT

All members of this family have an achene-like fruit called a **cypsela**. This name refers to the way it is formed in the flower. A cypsela may be smooth, winged, or spiny. In many species, a fluff of hairs (**pappus**) develops on top of the ovary as the fruit ripens. This differs from the sedge family, where the fluff develops from the bottom of the fruit.

DID YOU KNOW?

As well as the species described in the book, there are six species of pussytoes in Nunavut. They have flowering heads that are made up of disc florets only. There is a small Arctic daisy, *Hulteniella integrifolia*. It has a flower very much like seashore chamomile, but is about one-third the size, and the plants grow on mature tundra away from the sea.



Susan Aiken



Alpine arnica

Scientific name: *Arnica angustifolia*

Inuktitut name: Qursuqtainnarmik nunaralik

ROOTS/STEMS

Arnica angustifolia is a **perennial**. It is widespread in Nunavut and grows as far north as Ellesmere Island. Arnica has **rhizomes**, and is usually between 10 and 30 centimetres high. There is a **caudex** between the rhizomes and the flowering stems.

LEAVES

The leaves are found in both a **tuft** at the base of the plant and in an **opposite** pattern along the stems. The opposite leaves can be used to identify this plant even when there are no flowers. The leaves are longer than they are wide. The leaf **blades** are flat, with three main **veins**.

FLOWERS

The flowers in arnica are of two types. Its **flowering head** has straplike flowers (**ray florets**) around the outside and tubular flowers (**disc florets**) in the centre. The **involucre** is composed of two rows of 8- to 15-millimetre **phyllaries** that surround the flowering head when it is in **bud**. The phyllaries are hairy and often purplish red. When the flower opens, it is 2 to 3 centimetres across.

FRUIT

The fruit is **indehiscent**. The **cypsela** is black and 3 to 5 millimetres long, with a ribbed, hairy surface. From the top, after **fertilization**, the seeds develop a **pappus** that acts as a parachute for wind dispersal.



DID YOU KNOW?

The buds of *Arnica angustifolia* demonstrate a couple of strategies that Arctic plants use to facilitate growth in their harsh climate. Before they open, dark hairy phyllaries cover the buds. The dark colour attracts the heat of the sun and the hairs trap that heat. These strategies help to warm the plant and encourage growth, allowing it to bloom successfully despite the cool temperature of the air. In some native cultures, arnica is used to help heal bruises and wounds. Part of the leaf is crushed then placed on top of the bruised or wounded area.



Wormwood

Scientific name: *Artemisia borealis*

Inuktitut name: Unknown



ROOTS/STEMS

Artemisia borealis is a **perennial** herb that usually grows between 10 and 20 centimetres high. *A. borealis* has a **caudex** that is almost woody. Usually the roots are small and hairlike, but sometimes there is also a **taproot**. The regular stems are mostly **erect** and smooth, or with a few hairs near the base of the plant. The stems get hairier as they reach the flowers.



LEAVES

Wormwood has two types of leaves. The leaf **blades** at the base of the plant have a small **petiole**, whereas the leaves higher on the stem do not. The leaves in a **tuft** at the base of the plant have three to seven deep, thin divisions on both sides of a central **vein**. The leaves that grow up the flowering stem are narrow and straight. They are distributed along the stem in an **alternate** pattern. All surfaces usually have hairs, although the amounts vary greatly. The leaves may look silvery grey because of the hairs.

FLOWERS

The flowering stem is hairy and has leaves. The **flowering heads** are in **clusters** of four to nine. Each flowering head is surrounded by two to three rows of densely hairy **phyllaries**. The flowering head is made up of many **disc florets**. The **petals** of the tiny florets are two to three millimetres long. The red petals are **fused** together to make a funnel shape. There are no **ray florets**.



FRUIT

The fruit is a dry, one-seeded fruit, a **cypsela**. It is quite small. Unlike some other fruit in the Asteraceae family, wormwood's cypsela is smooth and does not have a **pappus**.

DID YOU KNOW?

Artemisia plants are also known as wild sage. Although *A. borealis* is not particularly strong-smelling, others in this genus are used in cooking as an herb.

There are two other species of wormwood on the Arctic Islands. In the western Arctic there is a second subspecies.



Fleabanes

Scientific name: *Erigeron* ssp.

Inuktitut name: Nunaraqpait

There are three species of fleabanes in Nunavut: dwarf mountain fleabane or cut leaf fleabane (*E. compositus*), alpine Arctic fleabane (*E. humilis*), and one-flowered fleabane (*E. uniflorus* subsp. *eriocephalus*). The last two species are similar and sometimes grow together in the same environment.



ROOTS/STEMS

All three fleabanes are **perennials**. They are all less than 25 centimetres high. The **caudex** maybe thick and branching. From it, there are **fibrous** roots.

LEAVES

E. compositus has **compound** leaves. In both *E. uniflorus* and *E. humilis*, the simple leaves are longer than they are wide, and are somewhat spoon-shaped. The leaves in all three species are hairy.

FLOWERS

The flowering stems have leaves and are hairy. These plants get hairier as you get closer to the flowers. The hairs act like the fur around the hood of a parka and help keep the air trapped in the hairy zone from moving. The still air acts as insulation and keeps the flower warmer at all stages of growth.

All three species have a single **flowering head** per stem. Beneath the flowering heads are very hairy **phyllaries**. *E. compositus* is less hairy than the other two species. The flowering heads are made up of both **ray florets** and **disc florets**. The disc florets are yellow in all three species, while the ray florets vary from white to pale purple or pink.



E. humilis



E. compositus © CMN

FRUIT

Arctic fleabanes have a **cypsela**. They range in size from 1.6 to 2.7 millimetres long. On top of the cypsela there is a **pappus** consisting of between 12 and 30 bristles. This tuft of hairs helps the seed to be dispersed by the wind. This type of fruit is **indehiscent**.

DID YOU KNOW?

Fleabane has both ground-level and underground vertical stems, and when its leaves die back in the winter, the short stem at ground-level stores food, particularly sugars, in the same way a tree that loses its leaves in the autumn stores food for regrowth the following season. Think of it this way. The plant makes food in the leaves over the summer, and then caches it in the stem over the winter. Growing close to the ground helps keep Arctic plants out of the dry Arctic winds, which tend to suck the moisture out of plants.

Erigeron compositus occurs on northern Baffin Island, some of the High Arctic Islands, and further to the west. *E. humilis* occurs mostly on Southern Baffin Island, Southampton Island, and the mainland. If you spot a fleabane while up on Ellesmere Island or on Victoria Island, more than likely you are seeing *E. uniflorus*. Of course there is some overlap, and on the mainland, on Southampton Island, and around Iqaluit, both species occur. These two plants look quite similar, although *E. uniflorus* is generally a little larger. Also its ray flowers are more purple than white. However, the easiest way to tell them apart is to look at their hairs. *E. humilis*'s hairs have a purple tinge, while *E. uniflorus*'s definitely look white. It is useful to have a **hand lens**!



E. uniflorus



Dandelions

General Overview

Scientific name: *Taraxacum*

Inuktitut name: Imugaq, misartaq

Taraxacum is a large genus of flowering plants in the family Asteraceae. The plants are native to Eurasia and North America. Two species, *T. officinale* and *T. erythrospermum*, are found as weeds worldwide, but so far, not on the Arctic Islands.

ROOTS/STEMS

All dandelions in Nunavut are **perennials**. The plants have long **taproots**. At the top they each have a small **caudex**.

LEAVES

The leaves grow from the caudex in a **rosette** close to the ground. Usually the leaves lie close to the ground, but they can be semi-upright or even fully upright in sheltered environments.

The leaves are simple, but the **blade** margins are variably **lobed**, or even almost divided. The surfaces are smooth. The **petiole** portion of the blade is sometimes winged, meaning that there is narrow blade tissue present on the edges.

FLOWERS

The hollow, flexible flowering stem has no leaves, but it does have some soft hairs, particularly near the flowers. If it is cut, there is a white milky juice (latex) that comes out of the cut end.

When the **flowering heads** begin to develop, they are on stems that lie close to the ground. When the flowers are blooming, the stems are **erect**. When the flowers begin to

set seed, the stems again lie close to the ground. When they are ready to shed the seeds, the stems again become erect. This was documented with time-lapse photography.

There is a platform (**involucre**) at the top of the flowering stem. On the outside there are two to three rows of **phyllaries**. In Nunavut, all the dandelions have phyllaries that remain pointing upward for the life of the flower. The weedy southern *Taraxacum* has phyllaries that point downward, even when the flower is in bud. The shape of the phyllaries is used to identify species.

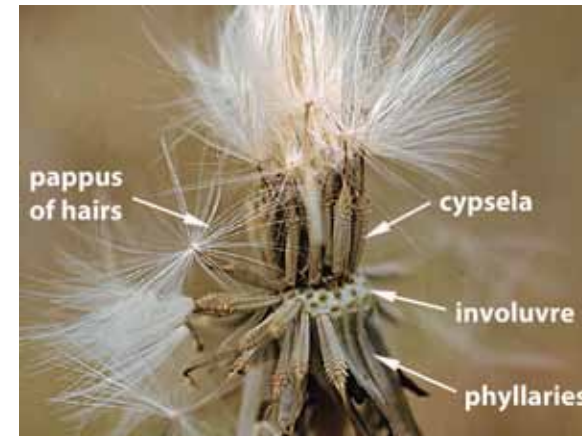
All the flowers are **ray florets** and all produce **anthers** and **ovaries** like other members of this family. The colour of the **petals** in the flowers varies.

FRUIT

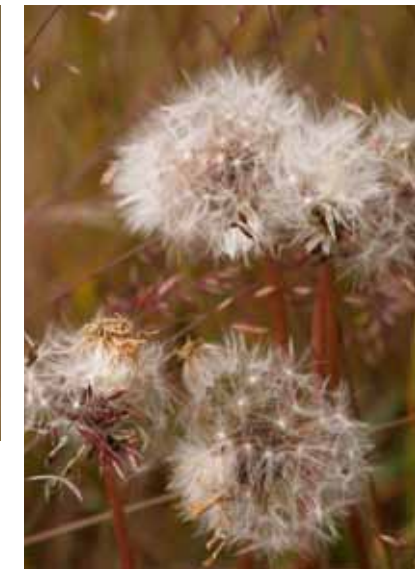
The fruit is a **cypsela** that is the product of an ovary composed of two **carpels**. The upper part of the cypsela may have well-developed teeth. At the top of the fruit, there is a beak, and from the top of the beak a whorl of **pappus** hairs. When the fruit detaches, these hairs help the fruit to be carried on the wind.

DID YOU KNOW?

There are at least four species of native dandelions in Nunavut. Only one is officially recognized as being in Iqaluit, but the authors have seen plants growing side by side that look as though they may be separate species.



© CMN



Dandelions in Nunavut

General Overview

Scientific name: *Taraxacum*

Inuktitut name: Imugaq, misartaq

There are four species of dandelions in Nunavut. They are northern dandelion (*T. phymatocarpum*), Holmen's dandelion (*T. holmenianum*), High Arctic dandelion (*T. hyparcticum*), and horned dandelion (*T. ceratophorum*). The first three species are strictly Arctic species. They occur in the High Arctic of Nunavut and the northern Northwest Territories. They also occur in northern Alaska and northern Greenland. Horned dandelion is quite the **opposite** and is the most widespread native dandelion in North America. In Nunavut, it occurs only in the Low Arctic.

ROOTS/STEMS

The three High Arctic species are dwarfed, growing between 2 and 12 centimetres high. Horned dandelion can be much taller, sometimes up to 50 centimetres high. They all have purplish or reddish flowering stems.

LEAVES

The High Arctic species usually have less than ten leaves per plant, while horned dandelion has more than ten per plant. The leaves are varied between these species, but the horned dandelion's are much longer (40 to 300 millimetres). The longest leaves of the High Arctic dandelion are 120 millimetres.

FLOWERS

Phyllaries can be used to distinguish one dandelion species from another. Northern and High Arctic

dandelions both have hornless phyllaries, while the horns on Holmen's dandelion, if present, are small. The horns on horned dandelions are well-developed.

The largest flowers belong to horned dandelion (about 30 millimetres across), while the other species are all about 20 millimetres across. The High Arctic dandelion has cream-coloured to white or even pink-tinged flowers. Holmen's dandelion is a dark orange-yellow, while northern dandelion is a pale, at times lemony, yellow. Horned dandelion is the standard yellow we think of dandelions being.

FRUIT

The fruit of these species (**cypselae**) are varied in colour, but are all variously ribbed.



T. phymatocarpum © CMN



T. hyparcticum © CMN



T. ceratophorum © CMN



T. phymatocarpum © CMN

Mastodon flower

Scientific name: *Tephroseria palustris*

Inuktitut name: Unknown

ROOTS/STEMS

The mastodon flower is different from most Arctic plants in that it is an **annual**. It only flowers once then dies. That being said, some years, if there is late frost that kills the tops of the plants before they flower, the same plants will grow back the following year to produce flowers and seeds. Although they are usually 10 to 25 centimetres high, under certain conditions they can grow to be 1 metre. They are the biggest annual plant in Nunavut.

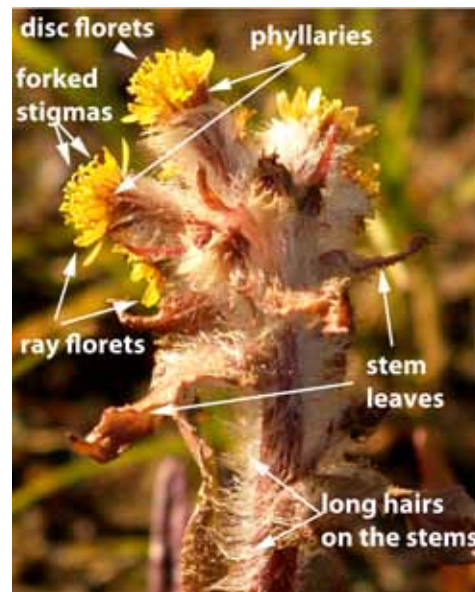
The stems are **erect** and hollow and grow from short, **fibrous** roots. The stems are brownish yellow and have only a few hairs at the base, but are densely woolly near the **inflorescence**. Some plants have fewer hairs than others.

LEAVES

Mastodon flower has two types of leaves. The leaves at the base of the plant are narrower and have teeth along the edge towards the tip of the leaf. The leaves that grow along the stems are wider and have no teeth. Neither type of leaf has **petioles**. The top surfaces of the lower leaves are smooth, whereas the leaves along the stems are hairy.

FLOWERS

The flower **cluster** is made up of several **flowering heads**. The flowering heads are each on their own **pedicel**. Several flowering heads grow close together. Each head is surrounded by one or two rows of **phyllaries**. The 21 phyllaries are green or yellowish green. These phyllaries just below the flowering head protect the flowers within when the flowering head is in **bud**. The heads are made up of **ray** and **disc**



florets. The five **petals** in both types of flowers are bright yellow. There are twelve to twenty ray florets with two to three teeth on top. The **pappus** is 4 to 8 millimetres long and the strap petals are 3.5 to 7 millimetres long. In the centre there are many disc florets.

FRUIT

The fruit is a small, dry, one-seeded **cypsela** that does not split open when the seed is ripe. It is cylindrical, ribbed, and 2 to 3 millimetres long. The fruit is brown and smooth and has a pappus of white or dirty white hairs (1 to 12 millimetres long) on top.

DID YOU KNOW?

Plants take in carbon dioxide during the day, and give it off at night. The hairs still the air near the plant so that it stays warmer in the sunshine, and they hold moisture close to the rapidly growing and expanding leaves.



© CMN

Seashore chamomile

Scientific name: *Tripleurospermum maritimum*

Inuktitut name: Unknown

ROOTS/STEMS

Seashore chamomile can be an **annual** plant, a **biennial** plant, or a short-lived **perennial**. Plants can grow from 10 to 30 centimetres high. The stems are smooth and **erect**, curving upwards. These plants have a central **taproot** as well as a mass of threadlike roots. There are many stems per plant that branch from the **caudex** at ground level.

LEAVES

The leaves of seashore chamomile only stay on the plant for one season. On shorter plants, the leaves grow in a **tuft** at the base of the plant, while on taller plants, the leaves grow in an **alternate** pattern. The leaves are **compound**, meaning they are made up of small **leaflets**. The leaflets are arranged in such a way that the leaves look like feathers. This type of leaf arrangement is described as being **pinnate**. With seashore chamomile, the leaves are **bipinnate**, meaning that each division is divided a second time, making them even finer and lacier. The leaves are smooth and the edges have teeth all the way around.

FLOWERS

The smooth flowering stems have leaves, and usually, in the Arctic, one **composite** flower at the top of the stem. There are four to five rows of **phyllaries** that grow in rings at the base of the **flowering head**. This collection of phyllaries is called the **involucre**. Each individual **phyllary** is broadly triangular and is dark green or brownish, with wide, dark



margins. The 10 to 34 white **ray florets**, which are 10 to 16 millimetres long, open first. Inside there are many **disc florets**. They are yellow when open. When young in **bud**, they are often red in the centre of the flowering head.

FRUIT

The fruit is a dry, one-seeded, ribbed **cypsela**. It can be pale brown to blackish brown, with a slightly rough texture between the ribs. It does not develop a **pappus** of hairs.

DID YOU KNOW?

The word chamomile, in the common name, might suggest that this species is similar to chamomile tea, but the Arctic plant has now been put into a different genus. The significant chemicals in chamomile tea are secondary compounds that plants make when there is the time and food reserves to do so. Plants that have such compounds are often able to survive and reproduce better than those that do not. In Nunavut, the growing season is short and the insect and animal predators are minimal, so few Arctic plants have the time or energy to put into developing secondary compounds. This species may have limited secondary compounds, as it is said to be an effective insect repellent and to remove fish odours from your hands.



Biographies

Carolyn Mallory

Carolyn Mallory co-wrote her first book, *Common Plants of Nunavut*, with Susan Aiken in 2004. Her second book, *Common Insects of Nunavut*, came out in 2012. She lived in Iqaluit, Nunavut for twelve years before moving to Nova Scotia in 2012. For the past few years, in the summers, she has been working as resource staff on cruise ships in the Arctic, sharing her passion for plants and insects. She is currently working on a novel and writing poetry as she adjusts to her new home.



Susan Aiken

Susan Aiken was born in New Zealand, where she did an undergraduate degree in botany. She worked at the Queensland University, Australia, and did a Master's degree. In Minnesota, she did her Ph.D.

She worked for twenty-one years at the Canadian Museum of Nature, eventually studying all plants occurring in the Canadian Arctic Archipelago. She is first author on *Flora of the Canadian Arctic Archipelago* (2007) and contributed knowledge from that project to the first edition of *Common Plants of Nunavut*. Since retiring in 2005, she has worked on fifteen cruises as a lecturer for Cruise North Expeditions.



Lucy MacDonald

Lucy MacDonald grew up Igloolik, Nunavut, where she enjoyed collecting and pressing Arctic plants in the summers. Graduating from Mount Allison University in 1999 with a Bachelor of Fine Arts degree with a minor in Biology, Lucy went on to study illustration at the Edinburgh College of Art in Scotland. Since 2005, Lucy has worked as Curator of Education and Community Outreach at the Owens Art Gallery at Mount Allison University in Sackville, New Brunswick. Lucy is an avid gardener and shares her days in the garden with her husband, Matt and their cat, Mr. Friendly.

Glossary

Achene:	A dry, one-seeded fruit with a thin fruit wall.
Aggregate:	Closely clustered.
Alkali:	An environment with a basic (opposite of acidic) pH.
Alternate:	A pattern of leaf growth in which one leaf grows on one side of them stem, and then another leaf grows a little farther up the stem on the other side, and so on.
Amphibious:	(Of a plant) Able to grow both on land, and in the water.
Annual:	A plant that only flowers once and then dies. New plants grow up from seeds every year, and not from the previous year's roots.
Anther:	Part of the male reproductive system that produces and releases the pollen.
Awn:	A slender, stiff bristle usually at the tip of one of the grass florets.
Axil:	The upper angle where the leaf meets the branch.
Axis:	Main stem in leaves or flower clusters.
Basal rosette:	Leaves growing in a circular cluster at the base of the plant near or on the ground.
Berry:	Small, juicy, fleshy fruit.
Bipinnate:	Pinnate leaves where each division is divided a second time, making the leaves look fine and like lace.
Biennial:	A plant that grows up from the ground one year, but does not flower until the second year of growth, after which it dies.
Blade:	The flat surface of a leaf. In a grass, this is the part of the leaf that is free of the stem. It is attached to the sheath, which wraps around the stem in a grass, or sometimes a petiole in other plants.
Botanist:	A scientist or biologist who specializes in the area of plants.
Bract:	Modified leaf that is usually much smaller than a regular leaf.
Bud:	A small swelling that develops into a leaf, stem, or flower. Also, the state of having such a swelling (in bud).
Bulbil:	A small bulb, like a tiny onion, found on the stem of some plants. It can easily fall off and grow into a new plant. This type of reproduction is called vegetative reproduction.
Calyx:	All of the sepals together.

Capsule:	A dry fruit that splits open when the seeds are mature.
Carpel:	Female reproductive organ consisting of a stigma, style, and ovary.
Caryopsis:	A small, dry, and one-seeded fruit only found in grasses, in which the wall of the seed is joined to the wall of the fruit, with food resources in between. It does not split open when the seed is ripe.
Caudex:	Thickened stem base, usually found underground in Arctic plants.
Cluster:	A number of things of the same sort growing together.
Composite:	A type of flowering head made up of many flowers (usually more than one type of flower).
Compound:	A leaf divided into two or more leaflets.
Corolla:	All the petals together.
Cross-pollination:	The process of one flower becoming fertilized by the pollen of a flower on a different plant.
Culm:	Stem in grasses.
Cushion:	Tightly packed, roundish clumps of stems and leaves that sit on the tundra.
Cyme:	More or less flat-topped cluster of flowers in which the central or terminal flower opens first.
Cypsela:	A small, dry, one-seeded fruit that does not split open when the seed is ripe. These seeds often have fluffy pappus tops that help with seed dispersal.
Decumbent:	(Of a branch) Bending down towards the ground, but sometimes growing up at the tips.
Dehiscent:	(Of a fruit) Splitting open to release seeds when a fruit is ripe.
Deciduous:	(Of leaves) Falling off in the autumn.
Dichasium:	Inflorescence in which the uppermost flower blooms first and two lateral branches occur at about the same level, with flowers at approximately the same stage of development.
Diffuse:	Spread out or dispersed.
Disc floret:	Five petals fused into a symmetrical tube at the base, with five petal tips separate at the top.
Distribution:	Frequency of occurrence or extent of location.
Drupe:	A fleshy, indehiscent fruit with an inner stone that surrounds one or more seeds.

Epicalyx:	An outer calyx below the calyx.
Erect:	Standing up straight; growing in a vertical position as opposed to growing along the ground.
Fertilization:	The process of pollen from a male plant or plant part landing on a female part, after which point the plant is fertilized and will produce fruit.
Fibrous:	Threadlike or fibrelike; usually used in reference to roots.
Floral bract:	Tiny, scalelike leaves that surround each flower in a tightly packed cluster.
Floret:	Tiny flower usually less than 1 centimetre high.
Flowering head:	Another term for the whole flowering structure, or inflorescence.
Fused:	Joined together.
Gland:	An organ or layer of cells that produces and releases an often sticky substance.
Glandular:	Having glands.
Glaucous:	Having a thin, waxlike covering that gives the plant a bluish grey colour.
Glume:	The pair of bracts usually present at the base of a grass spikelet.
Hand lens:	Small magnifying glass that botanists use to get a closer look at the small details of plants.
Helmet:	Two petals that are fused at the top of the flower to form an overhang over the other three petals, looking like a hat or helmet over the other three petals.
Herbarium:	A place that houses a collection of dried plants.
Hybrid:	The offspring of two plants of different species.
Hybridization:	When two plants of different species reproduce and produce an offspring that has some of the characteristics of each of the parent plants.
Hydathodes:	Specialized pores at the tips of some leaves that are used to secrete waste when the plant is growing so fast that it can't store all of its waste products in the vacuoles where they are normally stored.
Inflorescence:	The flowering part of the plant or cluster of flowers.
Involucre:	A ring of small bracts around the base of the tight flowering head in plants of the composite or Asteraceae family. They function like sepals in other plants.

Keel:	The two lowest, joined petals that act like a landing pad for insects in pea plants, or the obvious ridge along the length of some sedge leaves.
Lanceolate:	(Of a leaf) Narrowing and tapering like the head of a lance or sword.
Leaf buds:	Baby leaves that are often formed in the preceding summer and are packed closely together, ready to grow into new leaves the following spring.
Leaflets:	Small, complete leaf divisions in a compound leaf.
Lemma:	The lowermost of the two bracts enclosing the flower in the grass floret.
Linear:	Thin and straight, as in a leaf.
Lobe:	Rounded segments of a leaf or petal.
Marcrescent:	(Of leaves) Staying on the plant after they die and forming insulation that helps protect the base of the plant and trap water.
Matted:	Tangled together.
Mulch:	Layer of leaves or straw left around the bottom of plants to help prevent the evaporation of water from the soil, or the freezing of roots, and to generally protect the plant.
Nectaries:	Glands that secrete a sugary solution.
Node:	Place on the stem from which leaves or branches grow.
Nodule:	A small knot on a root or stem, especially one containing nitrogen-fixing bacteria.
Nut:	A dry, one-seeded fruit in a hard or tough shell.
Nutlet:	The product of an ovary with two or more carpels. As the fruit develops, the ovary divides into two or more units, called nutlets, each containing one seed.
Opposite:	(Of leaves) Growing in pairs, one on each side of the stem mirroring the other.
Ovary:	Part of the female reproductive system where the seeds are formed.
Ovule:	The plant part that contains the embryo sac and hence the female germ cell, which after fertilization develops into a seed.
Palea:	The uppermost of the two bracts enclosing the flower in the grass floret.
Palmate:	Having veins, leaflets, or segments coming from a central location.
Panicle:	A loose, irregularly branched flower cluster.
Pappus:	A group of bristles or hairs that are attached to a small fruit to help with dispersal.

Pedicels:	Tiny stalks between the flowers and the stems.
Perennial:	A plant that lives for more than two years; a plant that dies back to the ground in the winter but grows again the following spring.
Perigynium:	Bottle-shaped sack that surrounds the ovary and then the fruit in some of the sedges.
Petals:	The individual parts that make up the corolla (what we think of as the flower).
Petiole:	A stalk between the leaf and the stem.
Phyllary:	A leaflike structure located just below a flower, a flowering stem, or a flowering head. A bract of the involucre in the Asteraceae family.
Pinnate:	(Of leaflet pairs) Growing opposite each other down a central axis.
Plantlets:	Small plants.
Pod:	Type of fruit that occurs on pea plants; it is a dry case that splits open when the seeds are ripe.
Pore:	A tiny opening, usually microscopic, as in plant leaves, where fluids may be absorbed or discharged.
Prostrate:	Growing along the ground.
Raceme:	An inflorescence that has an unbranched central stem with flowers growing on separate stalks out to the sides. The flowers at the bottom open first.
Ray florets:	Five petals that are fused as a small tube at the base, but open between two of the petals so that the five petals lie flat.
Receptacle:	The swollen upper end of the stalk from which the flowers grow.
Rhizome:	Underground horizontal stem.
Rosette:	A cluster of leaves growing in a circular fashion around the stem.
Samara:	A dry, one-seeded, winged fruit.
Scabrous:	Rough to the touch.
Scale:	Similar to a bract, a small leaf.
Sepal:	Structure just below the petals that protects the petals and reproductive organs when the flower is in bud.
Septum:	A partition in an ovary with more than one carpel.
Serrated:	Having sawlike notches around the edges, as in a leaf.

Sheath:	The bottom part of a leaf, in a grass or sedge, that is wrapped around the stem.
Shrub:	A woody plant that has several main stems instead of a single trunk.
Silique:	A long, thin capsule that splits in two when the seeds are ripe. Both the outer walls fall off, leaving a fine membrane to which the seeds are attached. This is a special type of fruit that is found in the mustard family.
Spike:	An elongated inflorescence or flower cluster, with flowers arranged on a long stem.
Spikelet:	Small spikes in sedges. In grasses, spikelets are units made up of two glumes and at least one flower, surrounded by a lemma and a second scale (the palea, which has both male and female structures inside).
Stamen:	Male reproductive organ made up of the filament (threadlike stem) and the anther (pollen-producing part).
Stigma:	Part of the female reproductive system that receives the pollen.
Stipule:	A small leaflike appendage at the base of the leaf stalk.
Style:	The stalk between the stigma and the ovary in the female reproductive system; long styles can help expose stigmas to the wind in wind-pollinated plants.
Sub-shrub:	A plant whose central stems have a tendency to become woody and produce new growth every year at the tips; not a shrub, because the plant does not form true wood.
Taproot:	A long, carrot-like central root.
Tepals:	The name given to petals and sepals when there is no distinction between the two.
Tuft:	A bunch of grass or leaves growing closely together.
Veins:	Bundles of tissue that allow nutrients to be transported in the leaves.
Whorled:	Growing in a circle around the same point or node on a stem.

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