

Kandalaksha State Nature  
Reserve, Russia

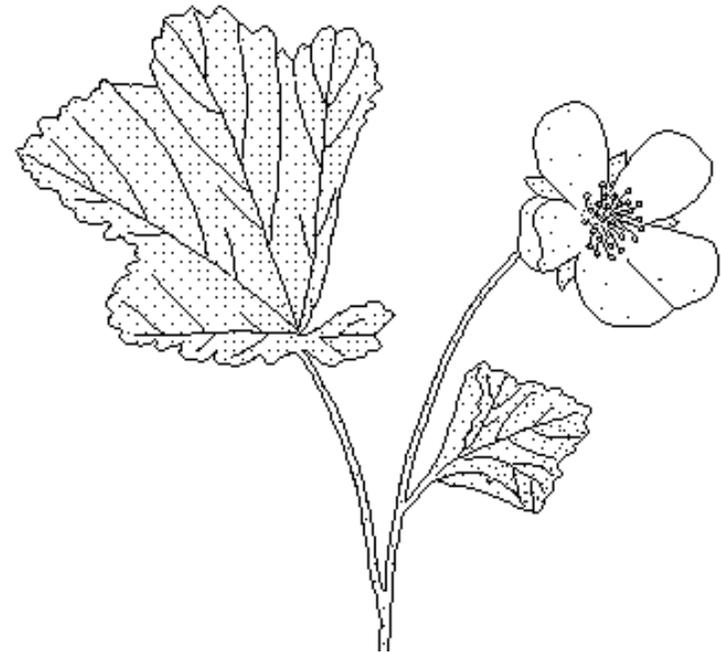


Svanhovd Environmental  
Centre, Norway



**The Project “Phenology of the North Calotte”**

## **FIELD GUIDE**



Kandalaksha - Svanhovd

2003

## FIELD GUIDE

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This field guide was made in connection with the Norwegian-Russian project “Phenology of the North Calotte”. It is meant to be a practical help for the participating schoolchildren in their work with the field registrations. The field guide includes illustrations and brief descriptions of the different nature objects chosen for observation. You will find more detailed information in the “Project Manual”, written in Norwegian and Russian.

The main aim of the project is to give the participants an experience with scientific nature observation in their local environment. Most of the required data can be registered close to where you live. When registering, please make certain that the species and their phenophases are correctly determined.

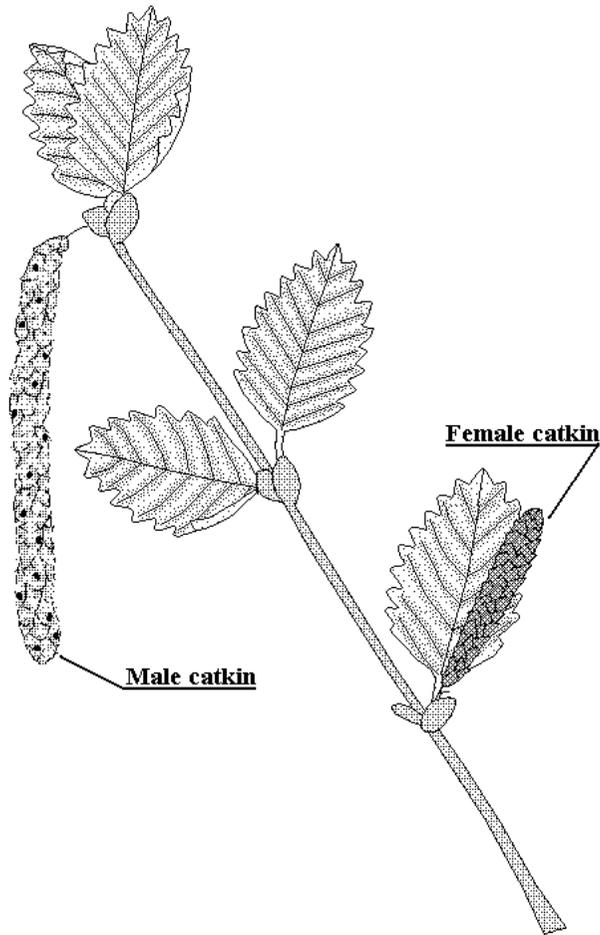
The project has its own interactive web pages where you can register all the collected data, and where information can be exchanged between the participants ([www.miljolare.no/northcalotte](http://www.miljolare.no/northcalotte)). Here you also will find the “Project Manual”, this field guide, photos of nature objects, and other information. Please, fill in information about your school group/class, and the phenological data you collect in special tables on the web page.

We hope that your observations will bring you new knowledge and lots of new impressions, and wish you good luck in your work with the registrations!

*Lise Flø*  
Project manager

*Alexander S. Koryakin*  
Project coordinator in  
Russia

## **Betula sp.**



© Vera Zherikhina

*The first leaves and flowering catkins in birch*

N: Bjørk

Sw: Glasbjörk

S: Soahki

F: Koivu

R: Берёза [ Ber`ioza ]

## **1. Birch**

On the North Calotte, the birch begins to sprout leaves and develop its female catkins in the middle of May. At the same time the male catkins, whose formation began in the autumn, wake up from their winter rest and continue developing.

Autumn colours in the leaves first appear in the beginning of August. The leaves fall to the ground in August – September.

### **Phenophases**

*Appearance of the first leaves. Obligatory.*

*The first flowers. Optional.*

The male catkins are loose and begin to release yellow pollen.

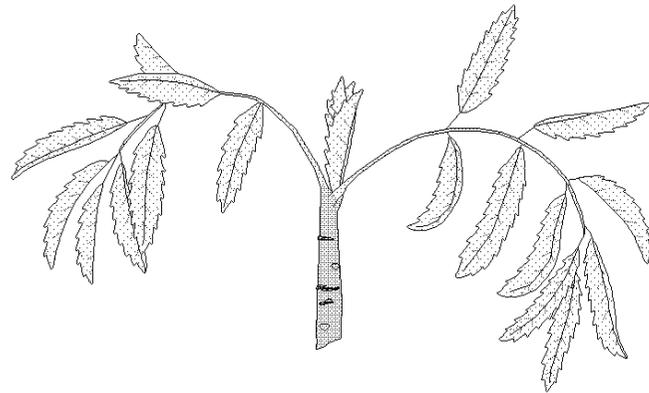
*Autumn colouring of the leaves. Obligatory.*

Approximately 50% of the leaves have turned yellow.

*The leaves' falling. Optional.*

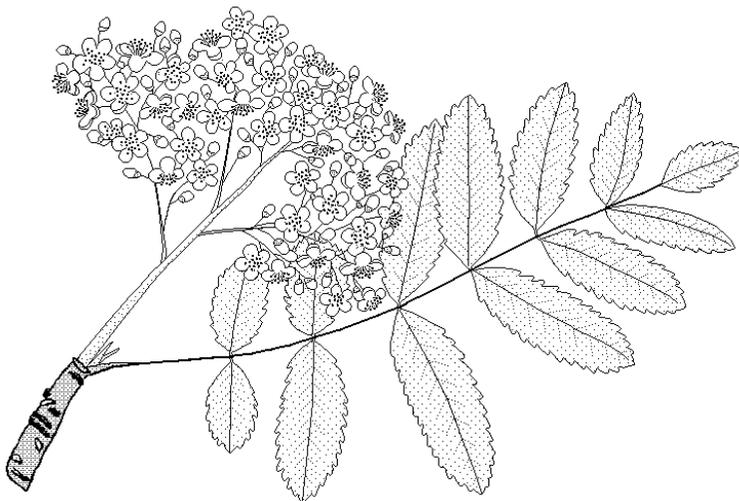
Approximately 50% of the leaves have fallen to the ground.

## *Sorbus aucuparia*



© Vera Zherikhina

*The unfolding leaves of a rowan*



© Vera Zherikhina

*The inflorescence of a rowan*

N: Rogn

Sw: Rönn

S: Skáhpi

F: Pohjanpihlaja

R: Рябина обыкновенная  
[ Ryabina obyknovennaya ]

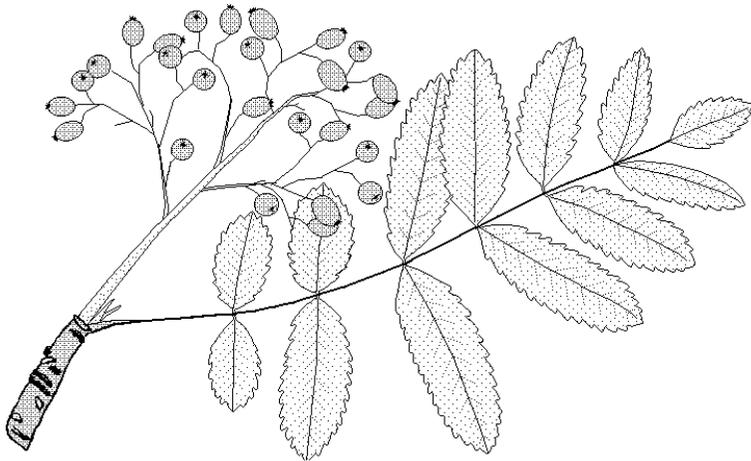
## 2. Rowan

Rowan is a tree or a bush and can become up to 15 meters high. Its pinnate leaves consist of 7 or more, small leaves. The flowers are small and white with 5 sepals and 5 petals, and smell pleasantly. The fruits are red, ball-shaped berries.

In the North Calotte, rowan leaves start sprouting in the middle of May – beginning of June. The first flowers open in the middle of June, and the peak of flowering occurs in the end of June – beginning of July.

Autumn coloured leaves begin to appear in August, and the leaves fall to the ground in the end of August – September.

The rowan's fruits ripe in September.



© Vera Zherikhina

*The ripe fruits of a rowan*

## Phenophases

*Appearance / unfolding of the first leaves. Obligatory.*

*The first flowers. Optional*

*The first ripe fruits. Optional.*

The first fruits have reached the size and condition of a well-developed, ripe rowanberry, i.e. they have taken on a bright red or orange colour, and are fleshy and juicy.

*Autumn colouring of the leaves. Optional.*

Approximately 50% of the leaves have taken on autumn colours.

*The leaves' falling. Optional.*

Approximately 50% of the leaves have fallen to the ground.

N: Rogn

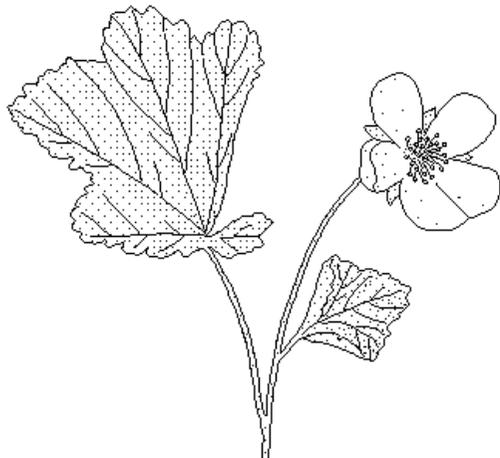
Sw: Rönn

S: Skáhpi

F: Pohjanpihlaja

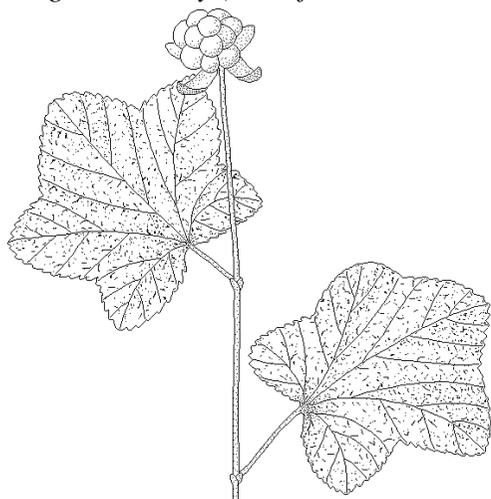
R: Рябина обыкновенная  
[ Ryabina obyknovennaya ]

## ***Rubus chamaemorus***



© Vera Zherikhina

*Flowering cloudberry (male flower with stamens)*

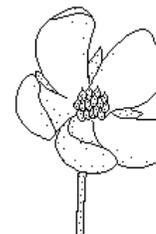


© Vera Zherikhina

*Cloudberry with ripe berry*

## **3. Cloudberry**

Cloudberry is a perennial plant with upright sprouts (up to 25 cm high); its leaves are five-lobed with stalks. The cloudberry flowers are white, but the female and male plants develop differently. Male flowers are larger than female ones. Usually a flower consists of 5 snowy-white petals and 5 sepals. The berries are in the beginning red and firm, but become golden/yellow, fleshy and juicy when ripe.



*The female flower of cloudberry with pistils.*

In the North Calotte, the cloudberry plants start sprouting leaves in May, when the snow has melted. The first flowers open in the end of May or beginning of June; peak of flowering occurs in June. The first berries ripen in the middle of July, but most of the berries get ripe in the beginning of August.

### **Phenophases**

*The first flowers. Obligatory.*

*The first ripen fruits. Optional.*

The first berries have become golden/yellow, fleshy and juicy.

N: Multebær

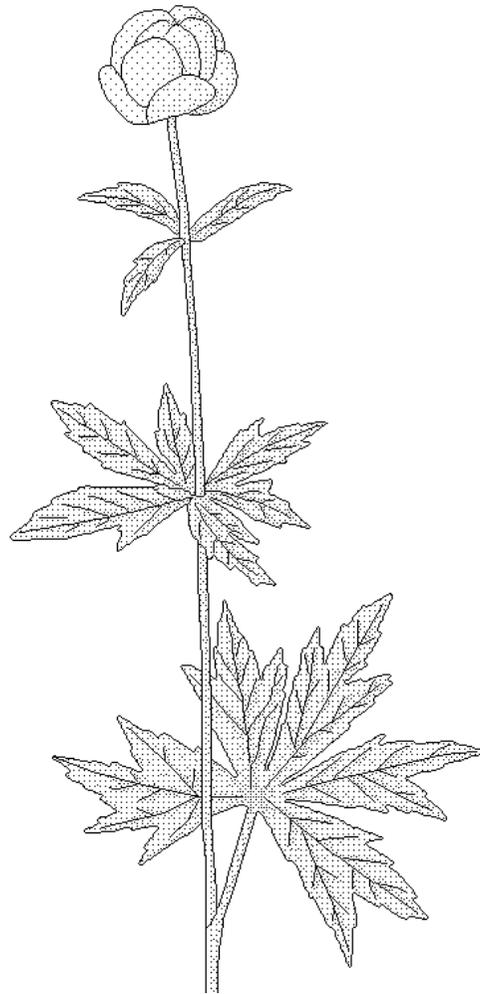
Sw: Hjortron

S: Luomi

F: Muurain

R: Морошка [Moroshka]

## *Trollius europaeus*



© Vera Zherikhina

*The flourishing globe flower*

## 4. Globe flower

Globe flower is a perennial plant with upright stem (height up to 90 cm) and large five-partite leaves. Usually there is only one flower, situated on the top of the stem. The yellow flowers are globe-shaped, and have a delicate, soft smell. Sepals, not petals, form the external appearance of the globe flower. Small petals transformed into nectaries are situated inside the globe.

The plant starts developing in the spring as soon as the snow is gone. In the North Calotte the first globe flowers open in June, and the flourishing period of the species does usually not exceed two weeks.

### Phenophase

*The first flowers open. Obligatory.*

The phenophase date which is to be registered is the first time the *opening* of the ball-like flowers is observed, i.e. the moment when the first flowers have semi-opened, and it is possible for insects to get inside the flower.

N: Ballblom

Sw: Smörboll

S: Boallorássi

F: Kullero

R: Купальница европейская  
[Kupal'nitsa evropejskaya]

## *Chamaenerion angustifolium*



© Katya Koryakina

*The Rosebay willowherb with flowers (in left) and at the seed-dissemination stage (in right)*

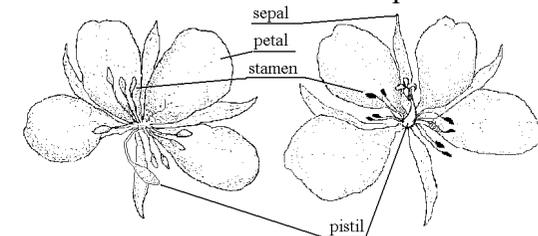
N: Geiterams

Sw: Getrams

S: Horbmá

## 5. Rosebay Willowherb

Rosebay willowherb is a perennial plant with upright strong stem (height up to 1-1,5 m) and long simple leaves. The flowers are violet/red and have 4 petals and 4 sepals.



© Katya Koryakina

*The male (I) and female (II) stages of rosebay willowherb flower*

In the North Calotte, the first green sprouts of Rosebay willowherb appear in May, shortly after the snow is gone. The sprouts grow quickly up until July, when the first flowers open. The first seeds get ripe in the second part of August.

### Phenophases

*The first flowers open. Obligatory.*

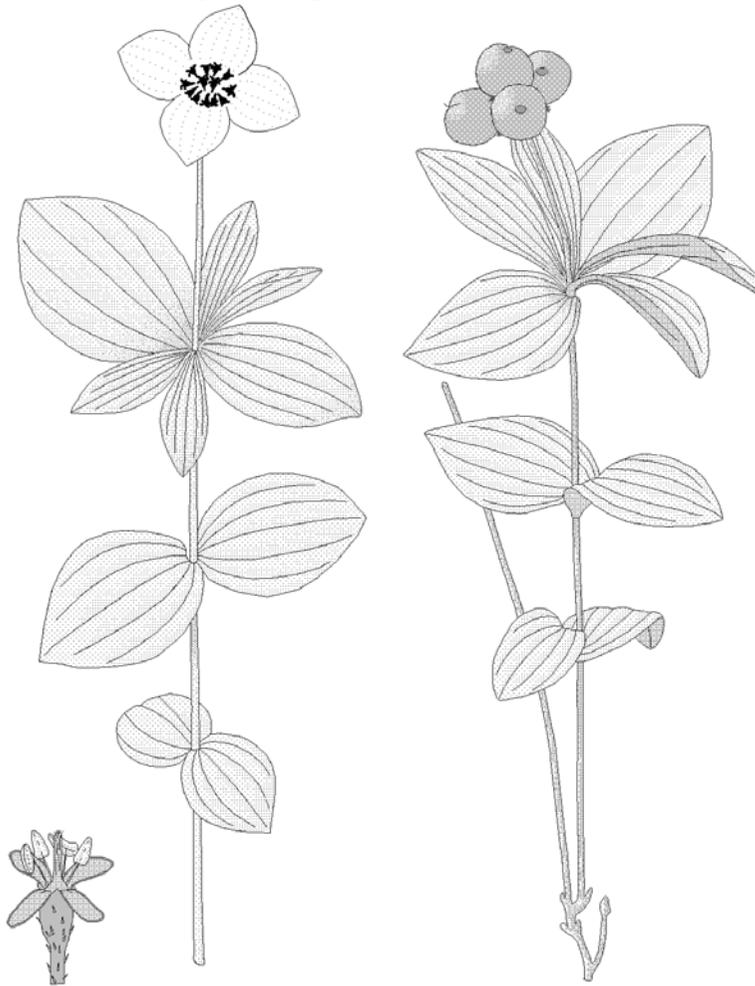
*The first ripe seeds. Obligatory.*

The first seed capsules have opened, and seeds with long white hair can be seen.

F: Maitohorsma

R: Иван-чай узколистый  
[Iv`an-chaj uzkol`istnyj]

## *Chamaepericlymenum suecicum*



© Vera Zherikhina

*Flowering Dwarf Cornel (to the left, an enlarged image of one single flower) and plant with ripe fruits*

N: Skrubbær

Sw: Hönsbär

S: Beatnatmuorji

## 6. Dwarf Cornel

Dwarf cornel is a perennial plant (up to 30 cm high). The sprouts develop 3-4 pairs of opposite simple sessile leaves.

An inflorescence of the dwarf cornel immediately appears to be one flower with four white petals. But in the middle of this “flower”, 5-25 small, violet, *real* flowers are situated. The white “petals” are leaf-like envelopes surrounding the inflorescence.

The dwarf cornel’s fruits are red, mealy, ball-shaped berries, each with one seed.

In the North Calotte, the first sprouts of dwarf cornel appear in May, shortly after the snow is gone. The flowering period is June and the beginning of July. The first ripe fruits appear in early August.

### Phenophases

*The first flowers open. Obligatory.*

The first flowers – i.e. the small, dark, *real* flowers! - have opened completely.

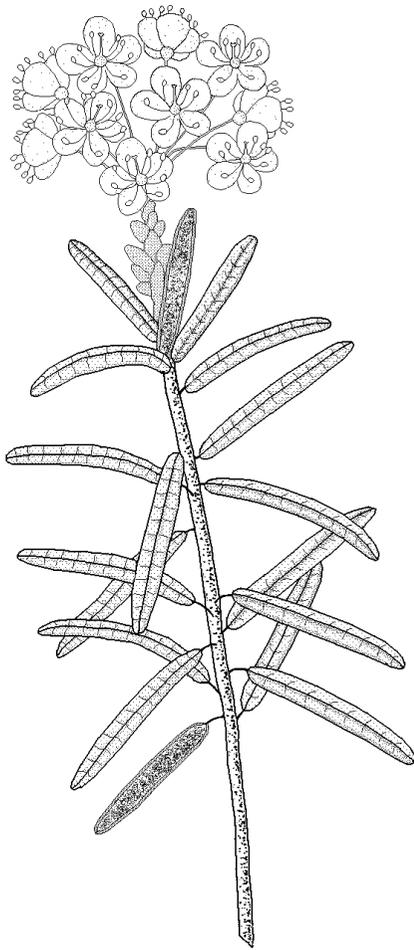
*The first ripe fruits. Optional.*

The first berries have reached the size of a well-developed fruit, become red and soft/pulpy.

F: Rauho-kanukka

R: Дерен шведский  
[D`eren shv`edskij]

## *Ledum palustre*



© Vera Zherikhina

*Flowering Labrador-tea*

N:  
Finnmarkspors

Sw: Skvattram

S: Guohcarássi

F: Suopursu

R: Багульник болотный  
[Bag`ul`nik bol`otnyj]

## 7. Labrador-tea

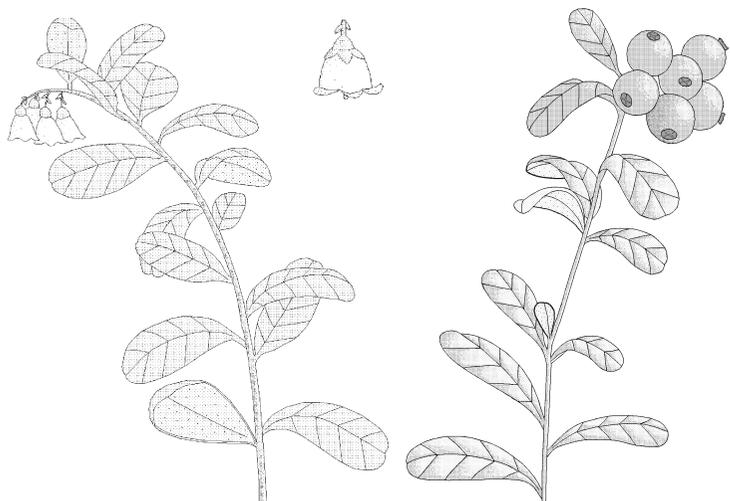
Labrador-tea is a perennial evergreen branchy bush (up to 1 m high). It has alternate narrow leathery leaves with short petioles. The racemes of white flowers sit on slim stems on the tips of branches. There are 5 petals in each flower.

In the spring, labrador-tea begins vegetating as soon as it gets free from the snow cover. In the North Calotte, the first flowers appear in early June; the period of flowering lasts until early July. The seeds ripen in September.

### Phenophase

*The first flowers. Obligatory.*

## *Vaccinium vitis-idaea*



© Vera Zherikhina

*Flowering Cowberry and with ripe berries*

## 8. Cowberry

Cowberry is an evergreen plant (up to 30 cm high) with alternate, leathery glossy leaves. The leaves have even edges, and their backside is covered with tiny “dots” or holes.

The cowberry’s bell-like flower is white or pink, and has 4-5 indentations in its edge.

The ripe berries of cowberry are juicy, with pink flesh.

In the North Calotte, the first cowberry flowers appear in the middle of June; the peak of the blossoming takes place in the beginning of June. The first berries ripen in mid-August, whereas most of the berries get ripe in September.

Almost every year, a second blossom of cowberry can be observed in September, but this flowering does not bring any fruit.

Phenophases

*The first flowers. Optional.*

*The first ripe fruits. Obligatory.*

The first berries have become red, fleshy and juicy.

N: Tyttebær

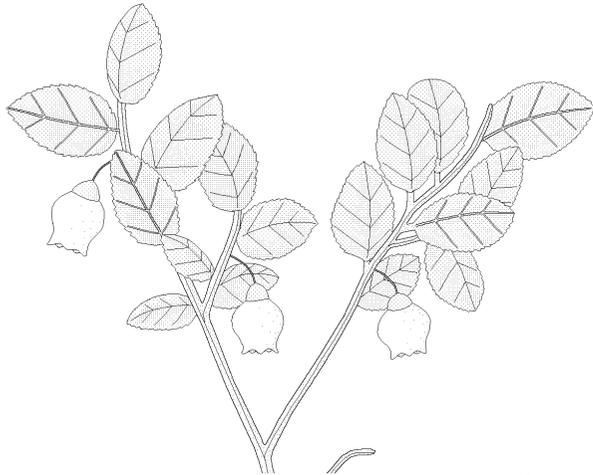
Sw: Lingon

S: Jokqa

F: Puolukka

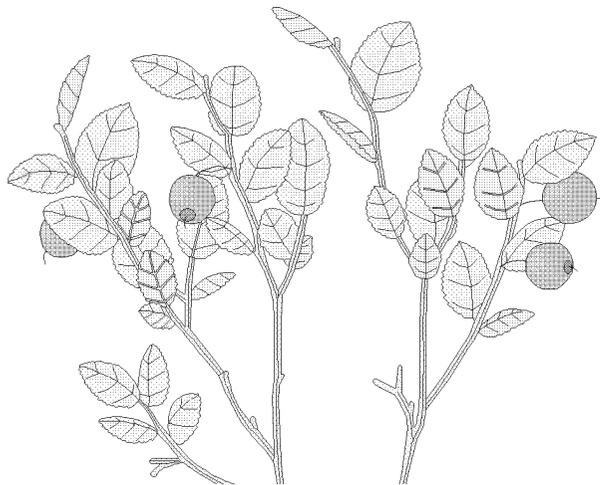
R: Брусника обыкновенная  
[Brusn`ika obyknov`ennaya]

## ***Vaccinium myrtilis***



*Flowering Bilberry*

© Vera Zherikhina



*Bilberry with ripe berries*

© Vera Zherikhina

N: Blåbær

Sw: Blåbär

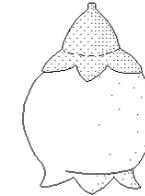
S: Sarrit

F: Mustikka

R: Черника миртолистная  
[Chern`ika mirtol`istnaya]

## **9. Bilberry**

Bilberry is a deciduous plant (10 - 40 cm high) with single leaves. The goblet-shaped flowers are greenish-pink or, sometimes red.



*A single flower of Bilberry*

The black or blue ripe berries are juicy, with dark-purple flesh.

In the North Calotte, bilberry plants begin sprouting leaves in May, when the snow cover is gone. The first flowers appear in the end of May – beginning of June. The first berries get ripe in early August.

### **Phenophases**

*The first flowers. Obligatory.*

*The first ripe fruits. Optional.*

The first berries have become blackish-blue, fleshy and juicy.

## *Culicidae* sp.



© Katya Koryakina

*Mosquito*

## 10. Mosquito

There are more than 20 species of blood-sucking mosquitoes in the North Calotte area. In certain species, hibernating impregnated females survive the winter and start reproducing in the spring; other species winter at their larva stage.

The first females that have survived the winter appear in the first half of May, but they are not numerous. However, in the species wintering as larvae, the first mosquitoes hatch in June, and in enormous numbers. The blood-sucking activity of all the mosquito species has its peak in June-July.

Phenophase

*The first mosquito bite in spring. Obligatory.*

N: Mygg

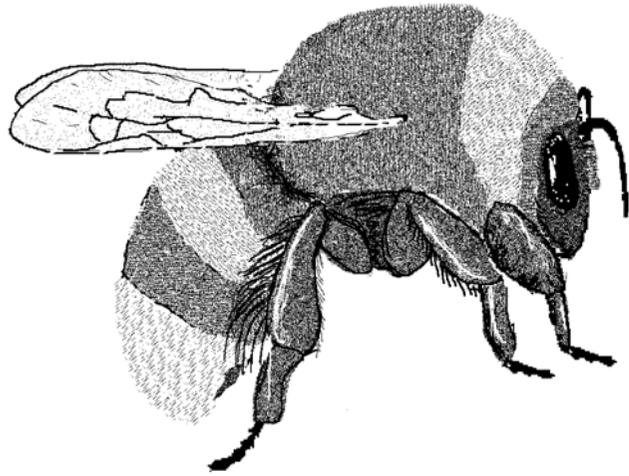
Sw: Mygga

S: Čuoika

F: Hyttynen

R: Комар [Kom`ar]

## ***Bombus* sp.**



© AS Koryakin

*Bumblebee*

## **11. Bumblebee**

There are more than 20 bumblebee species in the North Calotte. In all species, only the females survive the winter, hibernating.

The first bumblebees that have hibernated through the winter usually appear in the first half of May. The first days after awakening they do not eat, and can be seen anywhere. Later on, bumblebees will mostly be observed in places with flowering plants, gathering pollen and nectar.

### **Phenophase**

*The first spring registration. Obligatory.*

N: Humle

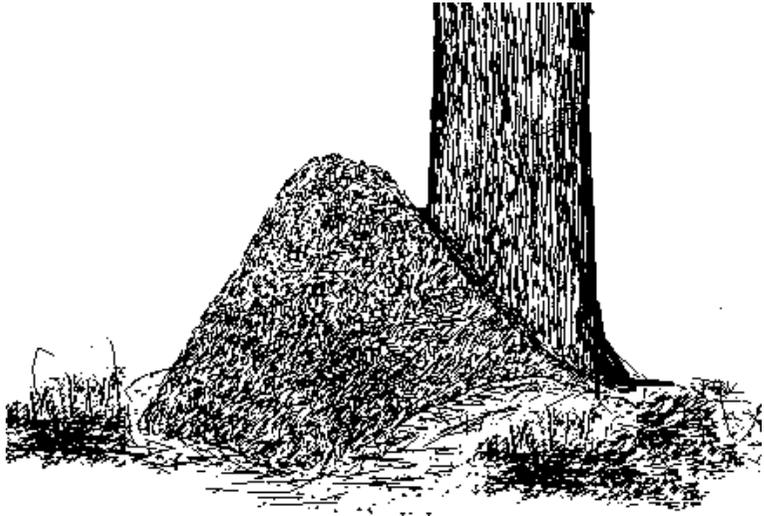
Sw: Humla

S: Uvlu

F: Kimalainen

R: Шмель [ Shmel' ]

## ***Formica* sp.**

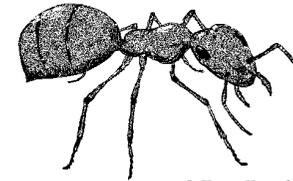


© Katya Koryakina

*The anthill of Formica*

## **12. Ants**

Ants are highly social insects that live in large families. Wingless and unfertile ant-workers build a nest for the family; the well-known anthill. The fertile female, so-called queen lives in the deep of the anthill. There is a system of tunnels and chambers inside the anthill, and underground mines are spreading out for tens of meters around. In the Northern Calotte only ants of the *Formica* genus (about 10 species) have anthills.



© Katya Koryakina

### ***Ant-worker***

Shortly after the snow has melted away from the anthill, the first ants appear on its surface. In the North Calotte this happens in April or May. The ants disappear for winter hibernation in September.

Phenophase

*The first ant on anthill. Obligatory.*

N: Maur

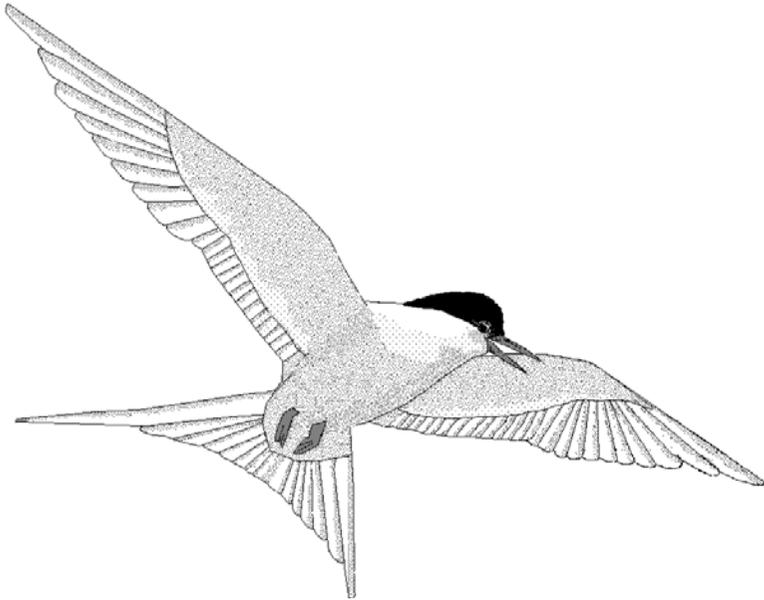
Sw: Myra

S: Gotka

F: Muurahainen

R: Муравей [Murav`ej]

## *Sterna paradisaea*



© AS Koryakin

*Arctic Tern*

## 13. Arctic Tern

The arctic tern is a medium sized long-winged and long-tailed bird. A silhouette of flying tern is similar to swallow. The arctic tern is a pale (white and light grey colour) bird with black cap. The long and sharp bill is dark red, and the very short legs are dark red too. The arctic tern has a specific rasping voice, which easily can be detected.

The first arctic terns arrive in the middle of May. They disappear by the end of August. The arctic tern is a colony breeder. You can find it near seashores or inland lakes.

Phenophase

*The first observed bird in spring. Obligatory.*

N: Rødnebbterne

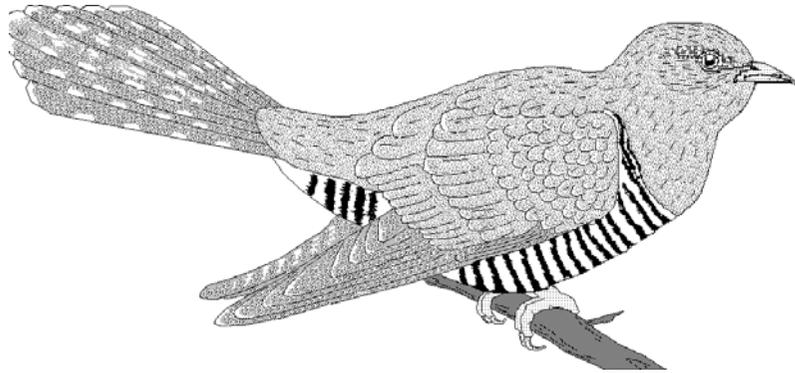
Sw: Silvertärna

S: Čearret

F: Lapintiira

R: Полярная крачка  
[Pol`yarnaya kr`achka]

## *Cuculus canorus*



© AS Koryakin

*The Cuckoo male*

## 14. Cuckoo

The cuckoo is a medium-sized bird with long tail. The male's upper side is grey, its belly white with dark stripes, much resembling a hawk. There are two varieties of female cuckoos, grey - similar to the male, but with rusty feathers on the breast, and rusty - i.e. rusty feathers all over. Cuckoos have short legs with two toes pointing forwards and two backwards.

The male's voice signal is the well-known "cuck-coo". The first cuckoos appear in the North Calotte in the second half of May. In this period the males' voice activity is very high, and they are easily noticed. The cuckoos disappear in the end of August - beginning of September.

Phenophase

*The first "cuck-coo" call heard in spring. Obligatory.*

N: Gjök

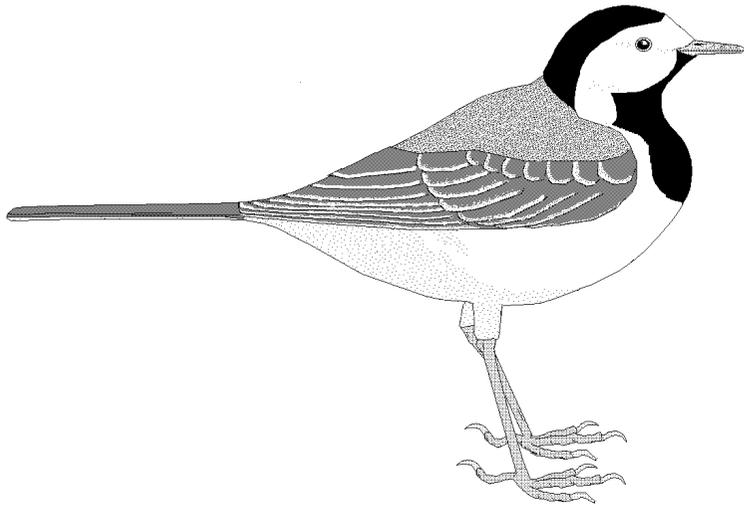
Sw: Gök

S: Giehka

F: Käki

R: Обыкновенная кукушка  
[Obyknov`ennaya kuk`ushka]

## *Motacilla alba*



© AS Koryakin

*White Wagtail*

## 15. White Wagtail

The white wagtail is a small bird with a slim, lengthy body, long legs and long tail. The bill is straight awl-like. The upper part plumage is grey, the belly is white, and the cap and broad tie are black. The tail is black with white margin feathers. Female can have grey or blackish cap. Many females have white stripes on their ties, especially on the throat, but some females are more malelike. Tail wagging is a very typical character for this species and other wagtails. They run quickly on the ground, and are not skipping around as sparrows.

In the North Callote the first white wagtails arrive in the end of April or in the beginning of May. They are easily detected by their specific vocal flight-call “tshizzik”. The last wagtails leave our region by the end of September.

Phenophase

*The first observed bird in spring. Obligatory.*

N: Linerle

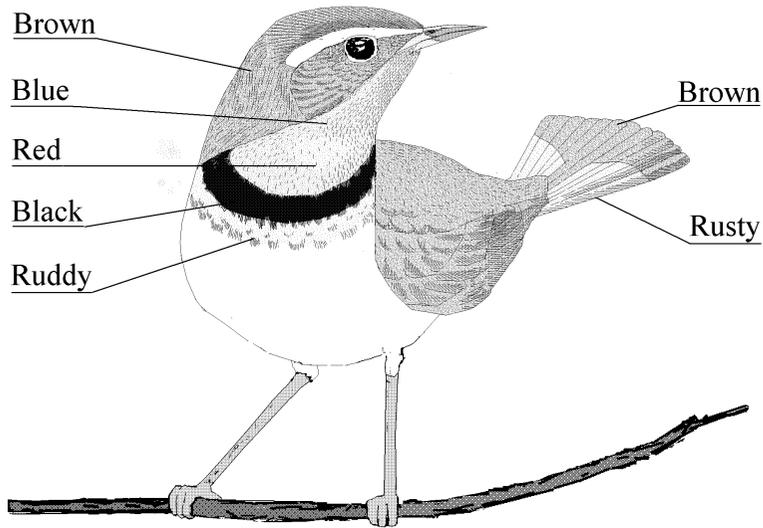
Sw: Sädesärle

S: Beštor

F: Västäräkki

R: Белая трясогузка  
[B`elaya tryasog`uzka]

## *Luscinia svecica*



© AS Koryakin

*Bluethroat male in spring*

N: Blåstrupe

Sw: Blåhake

S: Giellavealgu

F: Sinirinta

R: Варакушка  
[Var`akushka]

## 16. Bluethroat

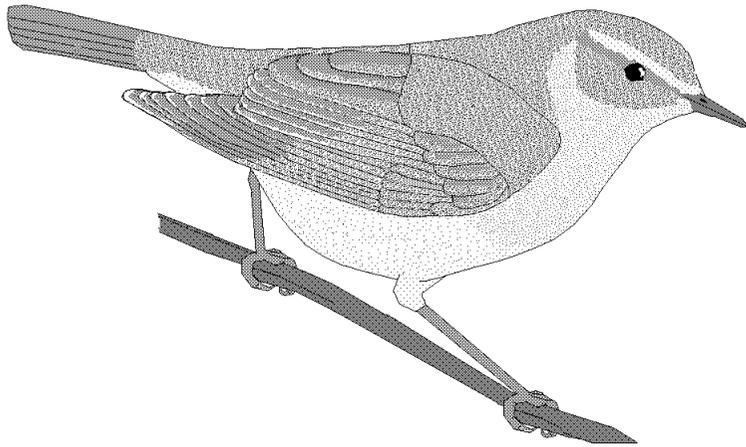
The bluethroat is a little bit smaller than a house sparrow. The breeding male has blue throat, bordered below by black and ruddy bands. The northern European males have a red spot on the blue throat. The female has white throat and a black-splashed necklace. The rest of the body plumage is essentially brown above and white below; the tail is brown with rusty patches at bases of outer feathers. If seen well it is practically impossible to mistake a male bluethroat in spring.

The bluethroats prefer half-open shrubbery habitats near water-bodies. The first male bluethroat appear in the North Calotte in the middle or second part of May. Songs and unmistakable appearance make them easy to detect.

Phenophase

*The first observed bird in spring. Obligatory.*

## *Phylloscopus trochilus*



© AS Koryakin

*Willow Warbler*

## 17. Willow Warbler

The willow warbler is a small bird, smaller than a house sparrow. The plumage is pale with greenish-olive back and wings and yellow-white breast and belly. Males and females look the same. It is a very restless bird. It quickly flutters inside branches during feeding. The willow warblers are easily detected in spring due to the distinctive melodious polysyllabic song of the males. They are not conspicuous outside the breeding season.

In the North Calotte the willow warblers appear in the second half of May. They disappear in the middle of September. The willow warbler is an arboreal bird, but you can find it almost everywhere where there are trees, bushes or scrub.

Phenophase

*The first observed bird in spring. Obligatory.*

N: Løvsanger    Sw: Lövsångare    S: Rievssatcizáš

F: Pajulintu

R: Пеночка-весничка  
[P`enochka-vesn`ichka]

## *Plectrophenax nivalis*



© AS Koryakin

*Snow Bunting male in spring*

## 18. Snow Bunting

The snow bunting is a little bit larger than a house sparrow. It is a well-knit bird with strong bill, spiky wings and a weakly forked tail. In spring males have a black and white appearance: the back, wingtips and tail are black; other parts are white. The white colour prevails in male plumage. In the female plumage, brown colour replaces black, and many rusty and brown feathers are found on the head and breast. The many white feathers separate this species from others. The flight-call of the snow bunting is a sonorous trill.

The first flocks of male snow buntings appear in the North Calotte in the end of March or in the beginning of April. The females arrive two or three weeks later. The birds stay in fields, and are frequently seen in settlements. They run quickly on the ground searching for seeds. The last snow buntings leave our region in September – October.

Phenophase

*The first observed bird in spring. Obligatory.*

N: Snøspurv

Sw: Snösparv

S: Állat

F: Pulmunen

Пуночка [P`unochka]

## 19. Snow

Snow is a common phenomenon in the North Calotte. Snow cover protects soil and plants from deep frost and gives favourable environment for many wintering birds and mammals. The plant and animal world of our region would be poorer if the snow cover was absent.

At the North Calotte snowfall can happen at any season of the year. Usually the first snow falls in the end of September or beginning of October. Generally, the first snow cover melts. A permanent cover normally establishes in the end of October – beginning of November. The depth reaches its maximum in February - March, and decreases later.

Phenophases

*The first snow cover. Obligatory.*

*Melting of snow cover. Obligatory.*

The date when half of the observed open area has lost its snow cover.



© Vera Zaborshchikova

*The first snow cover*

N: Snø

Sw: Snö

S: Muohta

F: Lumi

R: Снег [Sneg]

## 20. Ice on lakes and other water-bodies

Lakes and other water-bodies are common components of the Northern Calotte landscapes. Every year they are normally covered with ice in October – November and ice breaks up again in May – beginning of June.

Water has high thermal capacity, and lakes accumulate a lot of heat during summer. The larger the lake is, the more heat it accumulates. In our region, small lakes accumulate heat to the end of July, large lakes to the end of August. Afterwards the lakes start cooling down. When air temperature in late autumn drops below 0°C, ice crystals appear in the surface water layer. They quickly increase in number with decreasing air temperature.

### Phenophases

*The first ice cover on the lake (or other water-bodies). Obligatory.*

The first ice has covered all the surface of the lake in autumn (it doesn't necessarily need to be permanent).

*The ice cover disappears from the lake (or other water-bodies). Obligatory.*

The lake has broken free from ice cover completely, but some ice floes might be present.



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### A lake breaking free from ice cover

N: Vann

Sw: Innsjø

S: J'arvi

F: Järvi

R: Озеро [ˈOzero]