



Welcome  
to the  
Museum

ADMIT ALL

# Christmas

POP-UP ADVENT CALENDAR

Curated by EMILY CARTER

Make and decorate  
your own tree

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Royal  
Botanic  
Gardens Kew

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# Christmas

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B P P

# Arctic Tundra

You may think nothing is able to survive the Arctic tundra's bitter, frozen landscape, with its treeless terrain and sub-zero temperatures, but camouflaged against the snow, the Arctic fox, with its warm white fur and bushy tail, is well adapted to the cold. It is a master of disguise in all seasons, moulting into a rocky blue or brown as summer draws near. Resilient and resourceful, it is also a formidable hunter. The Arctic fox uses its expert hearing to pinpoint and pounce on small rodents, such as lemmings, buried beneath the snow.

But not all prey are easy to catch. One of the fastest animals in the tundra, the Arctic hare can outrun predators at speeds of 64km/h. Their impressive eyesight helps, too. Arctic hares can see almost 360 degrees around them without turning their heads, scanning the snow for danger in all directions. The Arctic fox needs to be extremely subtle to outsmart these vigilant creatures.

## Key to plate

### 1: Arctic fox

*Vulpes lagopus*

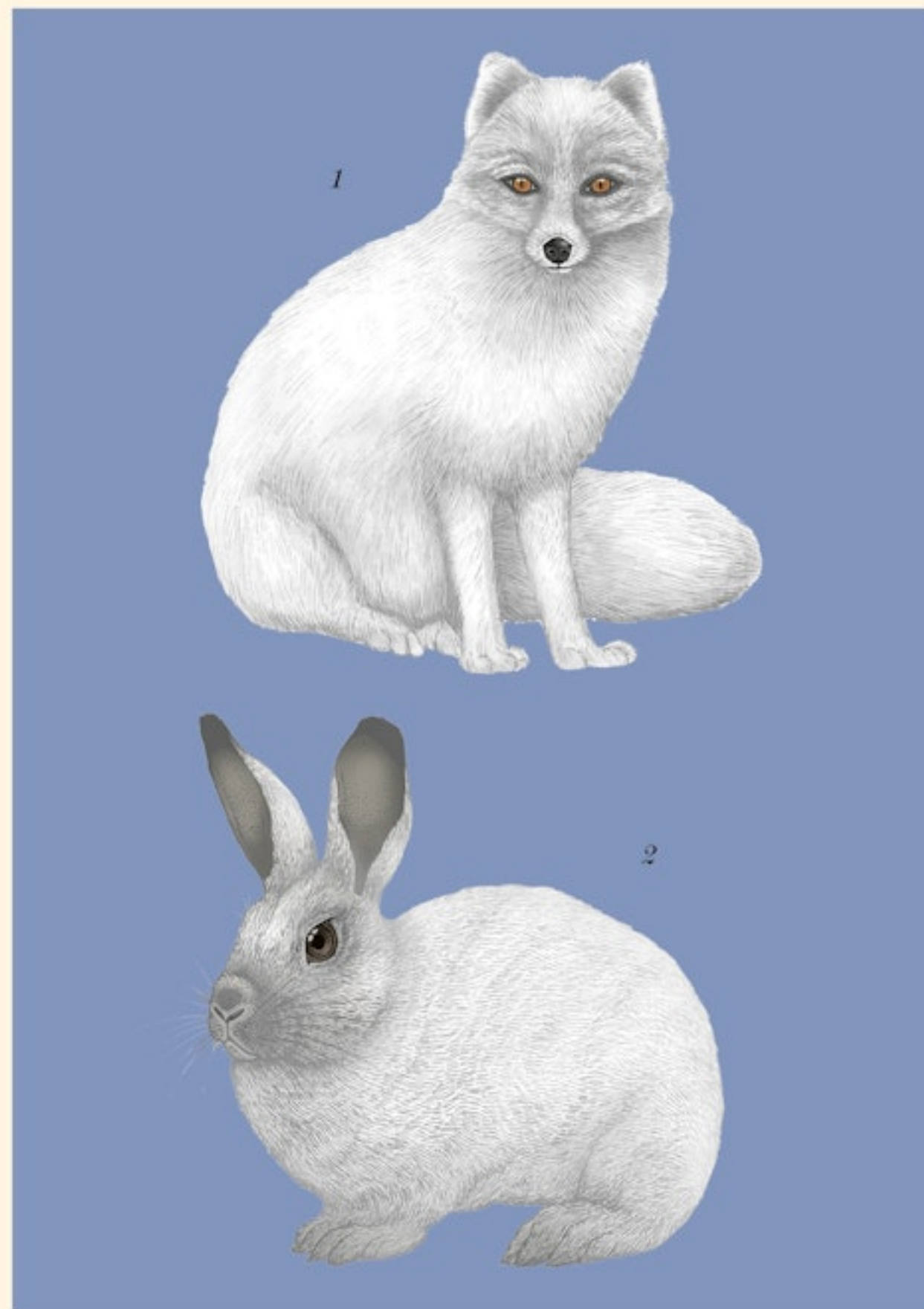
The Latin name means 'hare-footed fox', as this species grows fur on its paw pads,

similarly to hares, which protects them from the ice.

### 2: Arctic hare

*Lepus arcticus*

The Arctic hare can quickly burrow into snow drifts to escape the biting winds.





# Reindeer

It is no coincidence that Father Christmas chose reindeer to pull his sleigh, as they are strong, hardy and capable of traversing more than 5,000km a year. As one of the earliest domesticated animals, reindeer share an ancient alliance with humans. These antlered deer thrive in colder climes of Europe, North America and Asia, residing in the frozen northern forests and the Arctic tundra. Covered in fur from head to hoof, reindeer use their useful dew claws to grip onto slippery surfaces and burrow through the snow, feasting on the ferns, fungi and lichen hidden below.

Unlike their magical counterparts, these animals do not need a glowing red nose to illuminate the way. As one of the few large mammals that can see ultraviolet light, reindeer are able to find food, locate predators and stay safe even in the dark, bleak winter when sunlight is scarce.

## Key to plate

### 1: White spruce

*Picea glauca*

This large evergreen conifer is the northernmost species of North America. However, recent studies suggest the

treeline is advancing further north, towards the Arctic tundra. It is possible that warming temperatures caused by climate change have allowed them to grow

here, in an area where the soil would normally be too shallow.

### 2: Reindeer

*Rangifer tarandus*





# Small Mammals

As autumn slips into winter, woodland animals across Europe must find a way to survive the challenging season ahead. Many small mammals begin preparing for hibernation, feasting on extra food and building up vital fat reserves to use as metabolic fuel. Others, like the secretive wood mouse, retreat underground, hoarding stores of berries and seeds in their cosy, camouflaged burrows. In particularly cold winters, the wood mouse conserves energy by slowing its metabolism and lying in an involuntary, hibernation-like state of inactivity, called torpor.

But not everything remains dormant. With its bristly tail and tufted ears, the red squirrel is one of the few small mammals that does not hibernate. Instead, this species scavenges the forest floor and stockpiles acorns and hazelnuts in secret locations. When winter finally arrives, this russet rodent is ready, using its map-like memory and acute sense of smell to track down and devour its winter cache.

## Key to plate

### 1: Red squirrel

*Sciurus vulgaris*

This mammal builds a nest, known as a drey, inside tree trunks, lined with hair, moss and dried grass. It is endangered in the UK.

### 2: Wood mouse

*Apodemus sylvaticus*

Studies suggest that wood mice pick up and distribute twigs while foraging. These act as signposts, so should the mouse be disturbed and need to hide, it can later remember where it was.

### 3: Pin oak

*Quercus palustris*

Originally pin oak trees grew only in North America, but their small, hardy acorns are a useful food source for squirrels, mice and birds wherever the trees now thrive.





# European Robin

With its rust-coloured plumage and curious expression, the European robin is a plump, small-billed bird that breeds throughout Europe, Western Asia and parts of North Africa. A much-loved sight, the robin can be spotted all year round, the welcome sound of its melodic warbling filling the frosty air even during winter. As natural ground feeders, robins can be found hopping around gardens, woodlands and parks, foraging for insects and worms.

Despite being only 14cm long, these tiny birds are fiercely territorial, puffing up their scarlet chests and fighting off any feathered intruders that invade their patch. Robins are considered modern Yuletide mascots. They first appeared on Victorian Christmas cards as an ode to the vermilion-coloured uniform of the postmen who delivered them. These postal workers were aptly nicknamed 'redbreasts'.

## Key to plate

**1: European robin**  
*Erithacus rubecula*

**2: Common holly**  
*Ilex aquifolium*

The evergreen holly bush is

the UK's most festive plant and for hundreds of years it has been used, along with ivy, to decorate homes at Christmastime. Today, this

prickly plant, with its water-resistant waxy leaves and bright red berries, makes the ideal festive wreath.



# Mistle Thrush

When taking a countryside stroll this Christmas, keep an ear cocked for the fluty tune of Britain's largest songbird: the mistle thrush. These birds have a characteristic rattle-cry. They appear more grey than their song thrush cousins, with speckles on a slightly darker, plumper breast and patches of white feathers on the underwing. Spirited and territorial, mistle thrushes can often be found perched atop tall trees, fiercely defending their berry-laden branches and whistling against the inclement winter weather. This defiant habit has earned them the old country epithet 'stormcock', though their common name stems from a fondness for festive berries.

Mistle thrushes are famed for their penchant for mistletoe – a semi-parasitic plant with paired evergreen leaves and white berries, poisonous to humans but delicious to birds. The mistle thrush's appetite for this Christmas plant plays a vital, albeit accidental, role in its propagation. After feasting on the juicy berries, mistle thrushes wipe their sticky beaks clean, on branches, thus dispersing seeds so another plant can take root.

## Key to plate

**1: Mistle thrush**  
*Turdus viscivorus*

**2: European mistletoe**  
*Viscum album*  
It is thought the tradition of kissing under the mistletoe

was popular during the festival of Saturnalia in ancient Rome, which took place in December.





# Wild Turkey

For many households, Christmas dinner would not be complete without one large, oven-roasted bird taking prime place. Hailing from Mexico, the domestic turkey was first introduced to Europe in the 16th century as an exclusive upper-class delicacy. The turkey's Christmas connection emerged shortly after, when Henry VIII famously feasted on the exotic fowl during his festive banquet. Since then, turkey as a food has risen in popularity and grown in affordability, helped in part by advances in food production and Charles Dickens's inordinate fondness for the bird.

Today, turkeys have a reputation as odd-looking, ungainly birds, but throughout history they have been venerated as powerful, majestic creatures. Wild turkeys come in a variety of dazzling colours, with beautiful iridescent blue, bronze and green plumages. The Mayans venerated these noble fowl and valued their spectacular feathers highly, using them to make ornamental cloaks, garments and headdresses.

## Key to plate

**1: Wild turkey**  
*Meleagris gallopavo*

**2: American hazelnut**  
*Corylus americana*  
These tasty nuts are a favourite of wild turkeys,

pheasants, quail and grouse, providing an important food source during the tough winter months.





# Grey Partridge

Plump, rounded and rapidly declining in number, the grey partridge is one of Britain's few indigenous game birds, popularised by the classic carol *The Twelve Days of Christmas*. This once-flourishing avian has distinctive camouflage to help it blend into thicket and farmland: delicate ash-grey feathers, a striking rust-coloured head and a dark horseshoe-shaped stomach patch. Despite festive depictions of the partridge in a pear tree, these birds are strictly ground dwellers, scurrying across grasslands and nesting in hedgerows. They are also reluctant flyers. When danger approaches, partridges prefer to flee on foot but will, if flushed, burst into a low whirring glide across the grassland.

Exactly how the partridge found its way into the pear tree remains an enduring Christmas mystery, though one popular theory points towards a corruption of *une perdrix* (the French for partridge), which was simplified into 'pear tree' over time, resulting in the lyric we sing today.

## Key to plate

**1: Grey partridge**  
*Perdix perdix*

**2: Pear tree**  
*Pyrus communis*  
Pear harvest happens in the autumn, which is why these

juicy fruits are so commonly used in festive cooking.



# European Turtle Dove

Named after its gentle 'tur tur' purring, the turtle dove is a dainty, pinkish-grey pigeon with a white-tipped tail and intricately patterned chestnut wings. This timid bird nests in mature hedgerows and scrub, foraging the woodland floor for low-growing wildflower seeds. Since ancient times, the monogamous turtle dove has been coveted as an emblem of love, friendship and fidelity, dragging Aphrodite's chariot across the sky and symbolising perfect union in the famous Christmas carol *The Twelve Days of Christmas*.

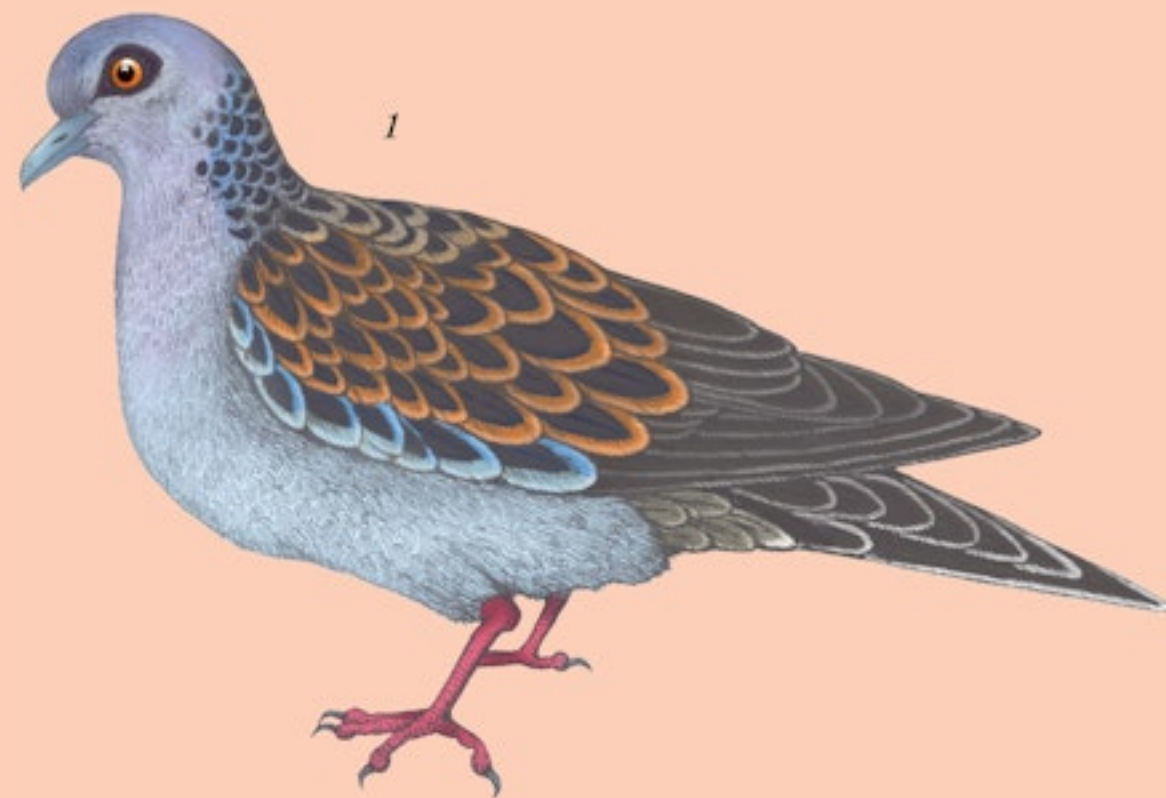
In reality, this small-but-mighty bird is equally impressive. As one of Europe's only migratory doves, it completes an epic annual journey, flying a round trip of more than 5,600km from its European breeding grounds to West Africa and the Sahel, where it overwinters, and back again. The expedition is not without peril. Unsustainable human hunting, food shortages and agricultural changes have marked the turtle dove as Britain's fastest declining avian. It will take careful conservation management to help ensure the future of this beautiful, festive lovebird.

## Key to plate

**1: European turtle dove**  
*Streptopelia turtur*

**2: Common snowdrop**  
*Galanthus nivalis*  
Carpeting woodland forest floors right across Europe, this hardy little plant is one

of the first to bloom in late winter (typically from January), signifying the oncoming of spring and hope for a new year.





# Small Birds

Against snow-capped conifers and frosty trees, the male northern cardinal is a striking flash of colour amid the wintry landscape. Native to North America, these songbirds are easily identifiable by their fire-engine red plumage, black mask and pointed crest. While other birds overwinter in balmy southern climes, the northern cardinal is an American winter stalwart, remaining all year round and fluffing up its feathers to keep warm. These charismatic birds seek shelter from the cold in dense vines and hedgerows, nestling under thorny canopies to keep dry.

Across the Atlantic, the European goldfinch is an equally festive sight, gingery-brown on top with a bright red-, white- and black-patterned head. In flight, their dark wings unfurl to reveal a broad yellow bar that gleams in the sun. The sociable goldfinch finds safety in numbers, forming communal flocks of up to a hundred birds and foraging the frosty woods for a secluded shrub or a bounty of winter rowan berries.

## Key to plate

### 1: European goldfinch

*Carduelis carduelis*

These unmistakable birds have sharp little beaks, perfect for plucking seeds from plants and trees.

### 2: Northern cardinal

*Cardinalis cardinalis*

Only the male sports this fine red plumage. The female is grey-brown with some red tinges on its crest, wings and tail.

### 3: Rowan tree

*Sorbus aucuparia*

The berries of this tree, also known as the mountain ash, grow in clusters and attract overwintering birds long after the leaves have fallen.



# Myrrh

Of the three kingly gifts presented at Jesus's birth, myrrh is perhaps the most elusive. Valued throughout antiquity for its medicinal and pain-relieving properties, myrrh is a reddish-brown gum resin derived from the thorny trees of the genus *Commiphora*. It is extracted by repeatedly making incisions in the bark, causing the injured tree to produce sap that coagulates quickly and becomes scablike and then hardens into teardrop pieces to be gathered, processed and sold. Over the years, myrrh has been used in the form of an antiseptic paste to tend battle wounds, a powder to treat throat and gum inflammation and a pain-relieving tonic. Ancient Egyptians also revered myrrh as an important embalming agent, dressing bodies in the aromatic compound and burning pellets to purify the air during mummification rituals.

Today, myrrh is most likely to be found as an essential oil in aromatherapy or infused into modern perfumes and cosmetics, continuing a tradition that has spanned thousands of years.

## Key to plate

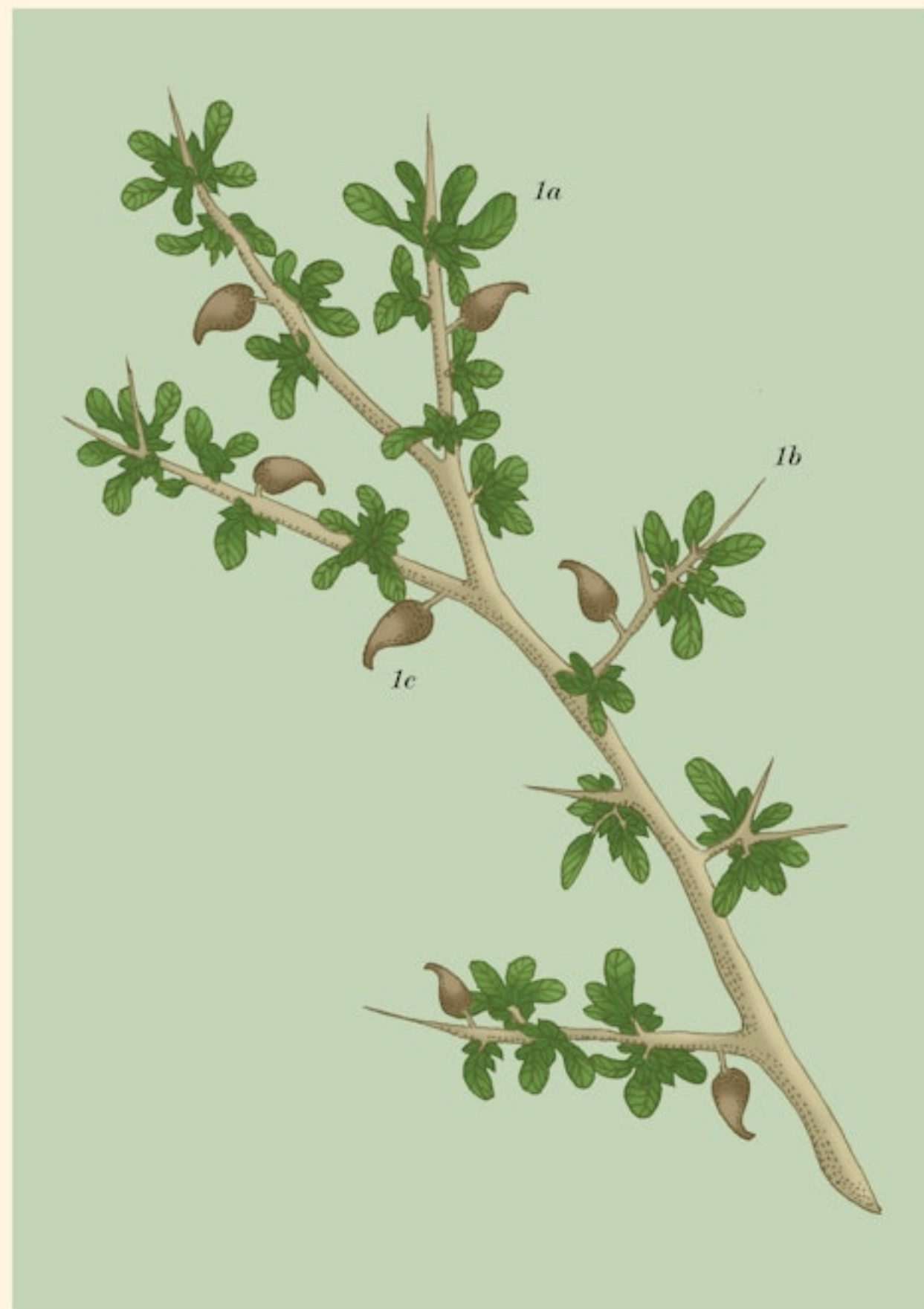
### I: Myrrh tree

*Commiphora myrrha*

a) leaf b) thorn c) fruit

This short, spiky tree grows

to a height of around 5m  
with a distinctly knotted,  
thick trunk.





# Frankincense

Found in the tomb of Tutankhamun and gifted to Jesus by the Magi, frankincense has been heralded as one of nature's most treasured commodities for thousands of years. Like myrrh, frankincense is a natural exudate that hardens into an aromatic resin with a rich, woody smell. Frankincense is harvested from *Boswellia papyrifera*, a gnarled tree with papery, peeling bark that grows in the desert lands of the Horn of Africa.

Frankincense has deep significance in various religious traditions, particularly in the Eastern Orthodox and Roman Catholic churches. During worship, frankincense is ignited on the burning coals of a censer, generating incense smoke that fills the room with an earthy aroma. It is also widely used for cosmetic purposes, often labelled the 'king of essential oils' for its versatility and rejuvenating properties. To this day, frankincense remains highly valued, with increasing evidence of medicinal benefits, particularly in treating arthritis, suggesting that this ancient plant has many more secrets to uncover.

## Key to plate

### I: Olibanum tree

*Boswellia papyrifera*

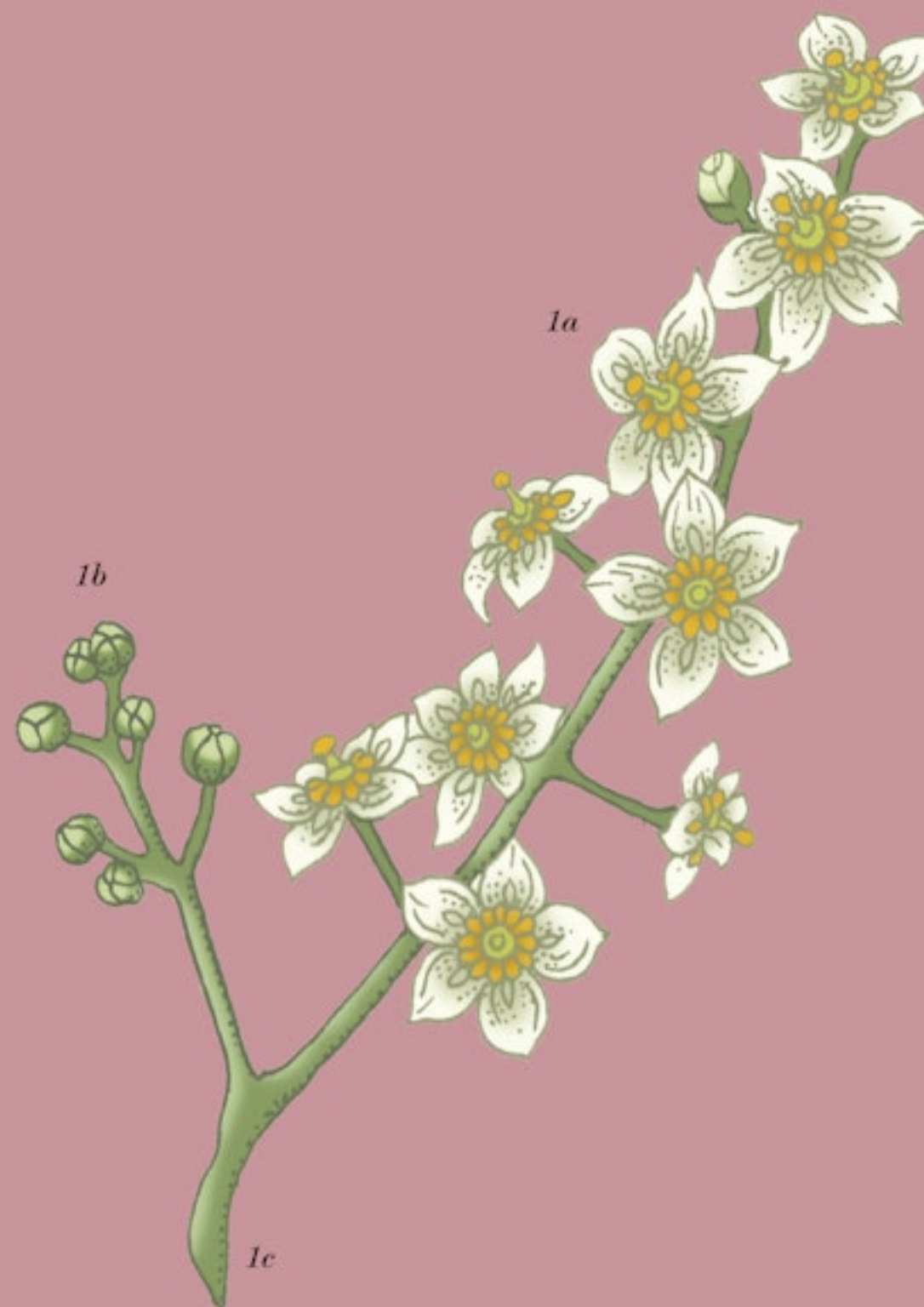
a) flower b) bud c) stem

The genus *Boswellia* is

named after the Scottish botanist John Boswell.

*Sacra*, meaning 'sacred' in Latin, signifies the plant's

usage in traditional religious ceremonies.



# Poinsettia

Indigenous to Mexico and Central America, the poinsettia is a perennial flowering shrub that thrives in warmer climes and is often nicknamed 'the Christmas star'. The poinsettia is a short-day plant, meaning its flower formation is triggered by periods of darkness. As winter creeps in and the days grow shorter, the poinsettia blooms in full colour: tiny yellow flowers called cyathia blossom at the centre, crowned by star-shaped crimson bracts and deep green leaves.

Poinsettias are heavily connected to the Christmas period and feature in festive decorations, a tradition that stems from an old Mexican legend. According to the Christmas Eve tale, a poor child, with no money for a grand gift, gathered a bouquet of roadside weeds to present to the Nativity Jesus at church. Witnessing this humble act of compassion, the angels took pity, transforming the weeds into the beautiful crimson and green plant we recognise as poinsettia today.

## Key to plate

### 1: Poinsettia

*Euphorbia pulcherrima*

a) leaf b) bract c) flower

Long before this flower became a Christmas staple, it was cultivated by the Aztecs.

The native name of this plant is 'cuetlaxochitl' in Nahuatl.





# Festive Flavours

As Christmas draws near, festive flavours waft through kitchens across the globe, filling the air with traditional aromas of nutmeg, ginger and clove. In Europe, roasted sweet chestnuts make a tasty Christmas treat, harvested from the *Castanea sativa* tree with its prickly husks and grooved bark. The zingy orange is another popular festive food, gifted to well-behaved children or peppered with cloves to make a pomander ball. This practice dates back to medieval times, when such spice-studded pomander balls perfumed the frosty air to ward off bad spirits and winter illnesses.

The iconic Christmas pudding also has humble origins, dating back to a porridge-like prune dish served in the 14th century. Although it originally formed part of a British tradition, the Christmas pudding is a global festive phenomenon, enjoyed by families far and wide in countries like South Africa, Australia and Canada. This dessert is often seasoned with cinnamon, a warm, fragrant spice derived from the inner bark of the Ceylon tree of Sri Lanka.

## Key to plate

### 1: Christmas pudding

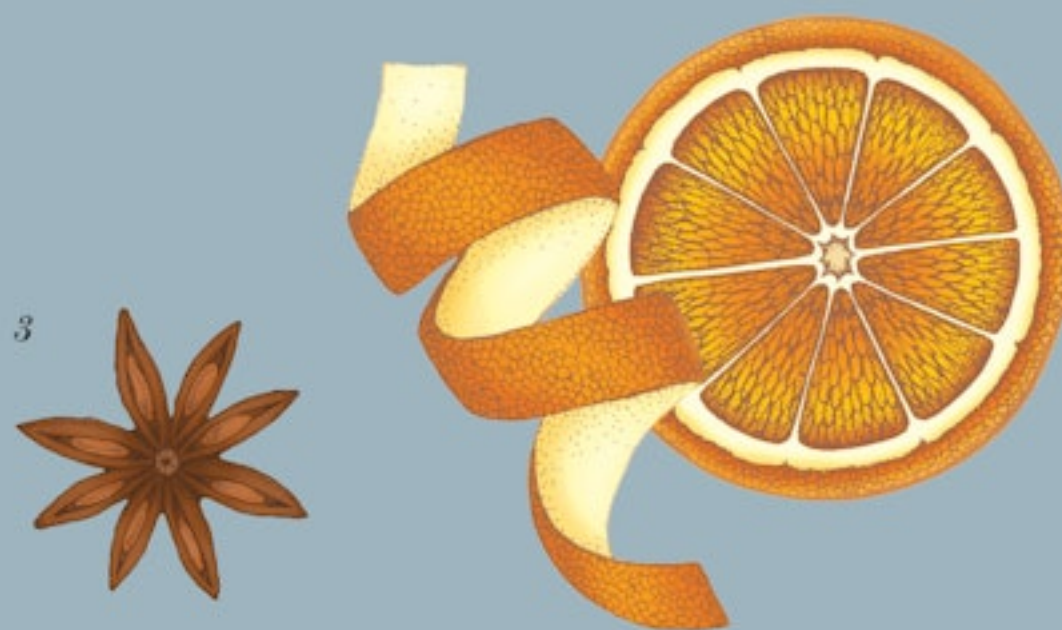
Filled with the quintessential flavours of the festive season, Christmas puddings are packed with citrus fruits, currants, cloves and spices, most of which are harvested from tropical trees.

### 2: Orange

*Citrus × sinensis*  
Gifting oranges at Christmastime may be a tradition that began with St Nicholas himself. According to legend, he threw balls of gold into people's homes, with one accidentally landing in a stocking that was drying by the fireplace.

### 3: Star anise

*Illicium verum*  
Star anise is the name given to the spice that is harvested from the fruits of *Illicium verum*. Highly fragrant, it is used in a variety of food and drinks, from mulled wine, to masala chai, cakes and curries.





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