SPECIES ID GUIDEBOOK

SELECTED MEDICINAL PLANT SPECIES OF NEPAL



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Note: This guide is prepared to assist the field level enforcement officials to identify selected medicinal plant species, focusing on the parts in trade. This book should be used as a reference, but the respective official should follow designated procedure to validate and confirm the identification.

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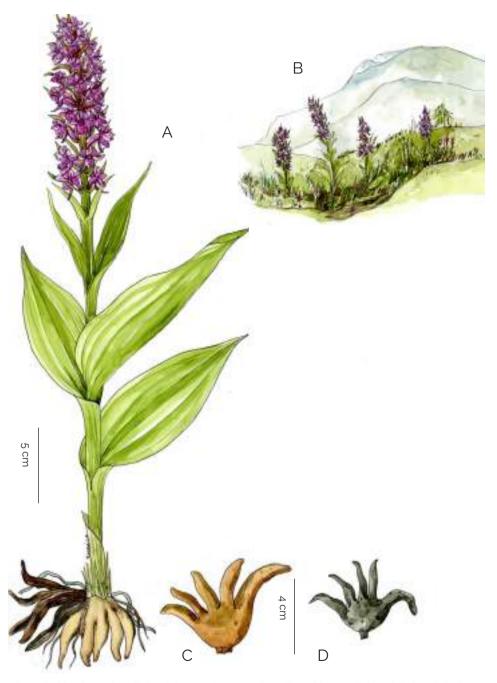
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HIMALAYAN MARSH ORCHID

PLANT INFORMATION	
Genus	Dactylorhiza
Local name/s, trade name/s	Nepal: Panchaaule, Hatajadi; India: Hatajari (Kumaon) Salem Panja (Kashmiri), Ambolakpa (Ladakhi), Salap (Urdu); China: Kuanyehongmen lan, Hongmen lan, Mengguhongmen lan, and zhanglie lan
English Name	Himalayan Marsh Orchid
Parts in use and trade	Tuber
Scientific name	Dactylorhiza hatagirea (D.Don) Soo
Harvest time	September to October (late Bhadra to mid Ashoj)
	Shape: Palm like with 3 to 6 fingers, i.e. lobed, soft and fleshy
Identification of trade part (shape, size, colour)	Size: One dried and ready to transport individual weighs nearly 2.5 gms
	Colour: Skin coloured, light to dark brown (if stored for longer duration it gets darker)
Remarks related to trade parts	There are two species of Dactylorhiza in Nepal and they all look alike (<i>Dactylorhiza hatagirea</i> and <i>Dactylorhiza viridis</i>)
	Plant size: Upto 70 cm tall
	Tuber: Palm like with 3 to 6 finger like lobes
	Stem: Erect with tubular sheaths at base, leafy throughout the lower portion
	Leaf: Oblong to lanceolate, 8 to 15 × 1.5 to 3 cm, apex acuminate
Morphological characters (plant size, roots, stem, leaf, inflorescence, flower, floral parts)	Inflorescence: Terminal, raceme with dense flowers, floral bract lanceolate, apex acuminate
	Flower: Rosy purple in cluster of a single stalked stem, 2 cm across
	Sepal: Abaxial sepal ovate-oblong apex obtuse, lateral sepals oblique, ovate-lanceolate, apex abtuse Petal: Ovate-lanceolate, apex abtuse
	Lip: Spathulate, base spurred, lobeless and usually slightly broader than long
	Column: Short
Flowering	June to August (mid Ashad to mid Bhadra)
Conservation status	CITES Appendix II, IUCN RL - EN, Forest Act - complete ban
Habitat	Terrestrial



Dactylorhiza hatagirea (D.Don) Soo . A, Mature plant; B, Habitat; C, Tuber; D, Tuber Dried

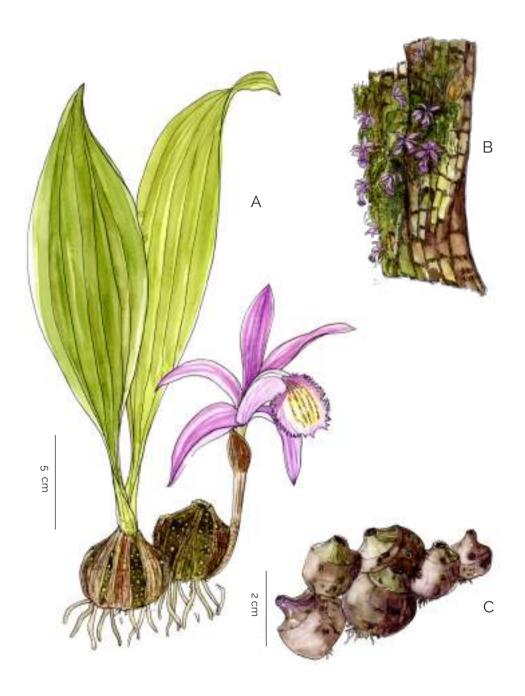




Photo credit: A; B; C; D,© Greenhood Nepal

EARLY BLOOMING PLEIONE

Pleione Nepal: Shaktigumba, Kashyumaar meaning the beak of a hen; India: Fambong Lho; China: Pink striped Orchid Early blooming Pleione Pseudobulb Pleione praecox (Sm.) D.Don October to November (mid Ashoj to mid Mangsir) (Mostly after fruiting) Shape: Pseudobulb is rhombic, It resembles the shape of a gumba (a sacred buddhist monastery or spiritual compound) Size: 1.5 to 4 × 1 to 2.3 cm
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Pseudobulb Pleione praecox (Sm.) D.Don October to November (mid Ashoj to mid Mangsir) (Mostly after fruiting) Shape: Pseudobulb is rhombic, It resembles the shape of a gumba (a sacred buddhist monastery or spiritual compound)
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Size: 15 to 4 x 1 to 2 2 cm
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Colour: Greenish purple, dried ones are brown coloured
These are found to be traded in the name of Himalayan Ground Gooseberry (Pani Amala)
Plant size: 12 to 25 cm tall Root: Adventitious, often aerial
Stem: Usually leafy with one or more swollen pseudobulbs; pseudobulb rhombic shape with usually two leaves at the apex
Leaf: Usually entire, alternate or opposite; oblanceolate, 9 to 20 × 3 to 6 cm with apex acuminate
Inflorescence: Arising from base of leafless pseudobulb; bracts obovoid
Flower: Pinkish purple in colour, lip with yellow lamellae, 10 cm across
Sepal: Oblanceolate, apex acute
Petal: Linear lanceolate, apex acute
Lip: Obovate to elliptic, 3-lobed; lateral lobes rounded, midlobe apically bilobulate, margin dentate, disc with fimbriate lamellae
Column: Apex toothed
September to November (mid Bhadra to mid Mangsir)
CITES Appendix II
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Pleione praecox (Sm.) D.Don. A, Mature plant; B, Habitat; C, Pseudobulb





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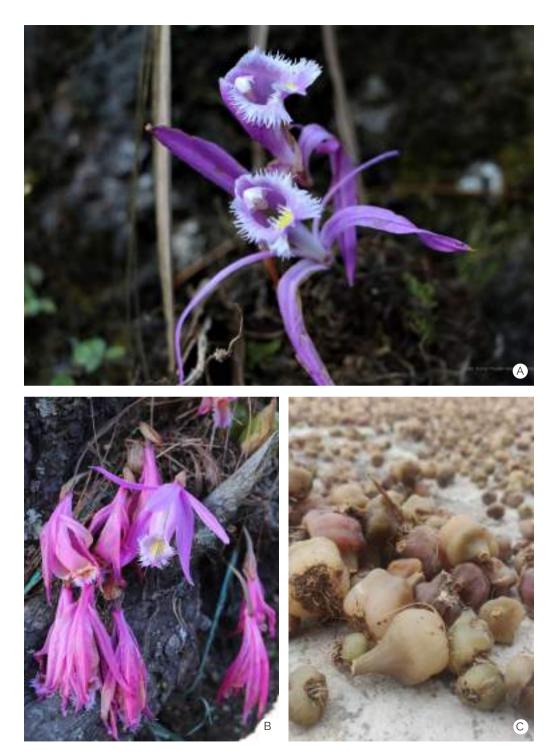
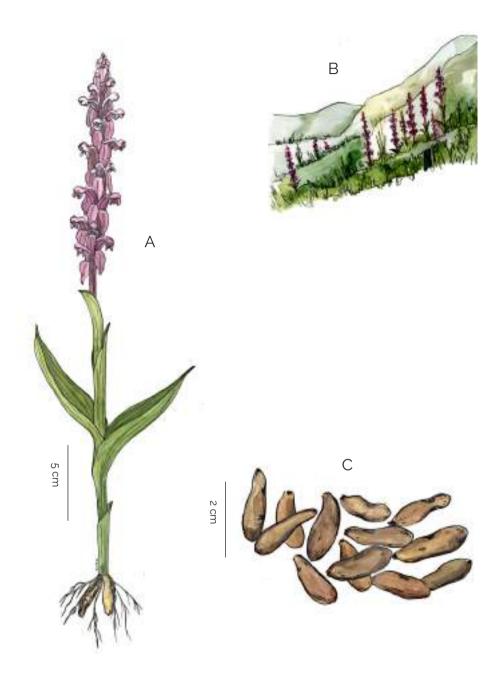


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THE NEPALESE SATYRIUM

PLANT INFORMATION	
Genus	Satyrium
Local name/s, trade name/s	Nepal: Gamadol/ Mishri, Chhedung (Gorkha), India: Salam misri, China: Bird's foot orchid
English Name	The Nepalese Satyrium
Parts in use and trade	Tuber
Scientific name	Satyrium nepalense D.Don
Harvest time	September to November
	Shape: Each plant has two 0.8 to 1.5 cm tubers
Identification of trade part	Size: Swollen at middle and tapering at both ends
(shape, size, colour)	 Colour: Slightly brown in colour
Remarks related to trade parts	Its tuber resembles to Brachycorythis (an orchid species)
	Plant size: 11 to 70 cm tall
Morphological characters (plant size, roots, stem, leaf, inflorescence, flower, floral parts)	Root: Adventitious, often aerial, sometimes assimilatory
	Stem: Usually leafy, cylindrical with 1 to 3 membraneous sheath at the base, 1 to 3 leaved
	Leaf: Elliptic-oblong, slightly fleshy, 7 to 10 × 3.5 to 5.5 cm, margin somewhat crisped, apex acute or acuminate, usually basal leaves that are widely spaced and alternate
	Inflorescence: Erect or hanging, Spile with densely many flowers, floral bracks reflexed, ovate-lanceolate
	Flower: Fragrant, widely spreading; whitish pink or pale purple flowers with hooded lip and two spurs, spike 5 to 20 cm long, 7 mm across
	Sepal: Abaxial sepal elliptic, obtuse, lateral sepal oblong-subovate, apical margins minutely ciliate
	Petal: Elliptic, obtuse, usually free
	Lip: Hooded, 3-lobed, spurs pedulous, longer than the ovary
	Column: Short
Flowering	August to September (mid Shrawan to mid Bhadra)
Conservation status	CITES Appendix II
Habitat	Terrestrial



Satyrium nepalense D.Don. A, Mature plant; B, Habitat; C, Tuber

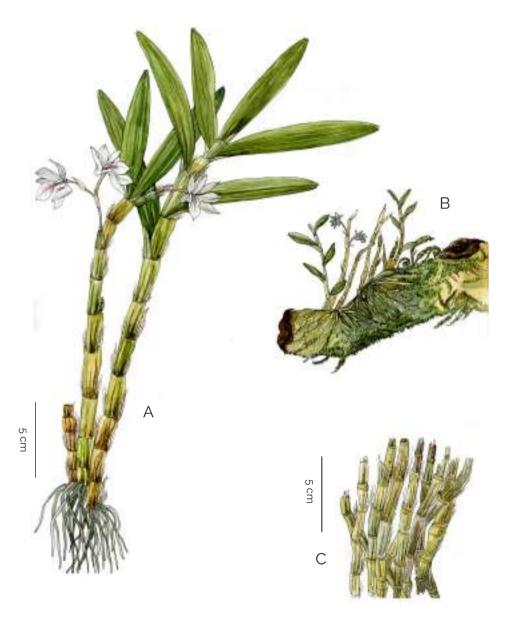




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THE NECKLACE SHAPED DENDROBIUM

PLANT INFORMATION	
Genus	Dendrobium
Local name/s, trade name/s	Nepal: Sunakhari; China: Thin-stemmed Dendrobium
English Name	The Necklace Shaped Dendrobium, Carrot Fern
Parts in use and trade	Stem
Scientific name	Dendrobium moniliforme L (Sw.)
Harvest time	May to June (mid Baishak to mid Ashar)
	Shape: Slender with many nodes, internodes upto 2.5 cm long
Identification of trade part (shape, size, colour)	Size: Usually erect, cylindric, 30 to 40 cm long and 3 to 5 mm thick
	Colour: Yellow tinged with dark gray when dry
Remarks related to trade parts	Stems are dried (steam or sun) before transporting to local traders
	Plant size: 17 to 40 cm tall
	Root: Fibrous root with relatively stretched parts, cylindrical
	Stem: Erect, cylindircal, elongated cane to like pseudobulbs/stem
	Leaf: Lanceolate, 5 to 7.5 × 0.5 to 0.8 cm, apex obtuse, obliquely bifid and usually deciduous before flowering
Morphological characters (plant size, roots, stem, leaf, inflorescence, flower, floral parts)	Inflorescence: Usually bears 1 to 3 flowers, creamy white to pale yellow or white tinged with pale purpllish red, sometimes fragrant
	Flower: White to pale yellow flower, lip with yellow blotched at the base, 3 cm across
	Sepal: Broadly lanceolate, sub acute
	Petals: Ovate lanceolate, acute
	Lip: Ovate lanceolate, apex acute, incurved, disc with long callus
	Column: Short
Flowering	April to May
Conservation status	CITES Appendix II
Habitat	Epiphytic, Lithophytic



Dendrobium moniliforme L (Sw.) . A, Mature plant; B, Habitat; C, Stem



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Picture credit: ©National Herbarium And Plant Laboratories

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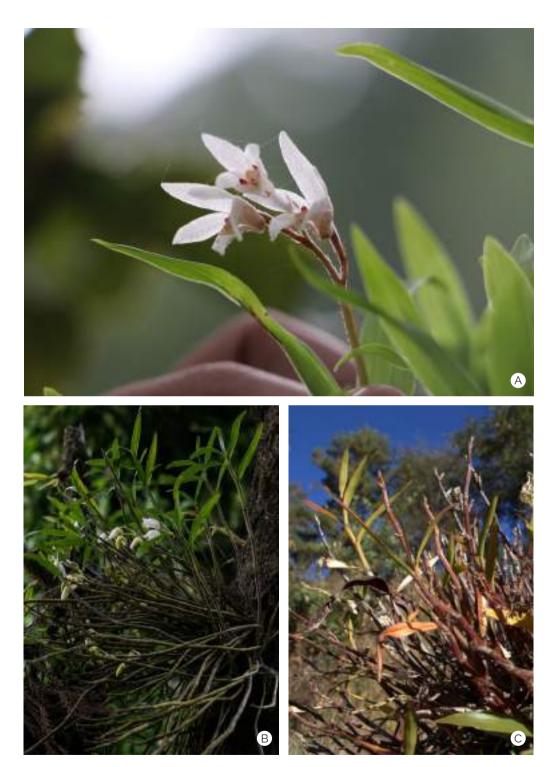
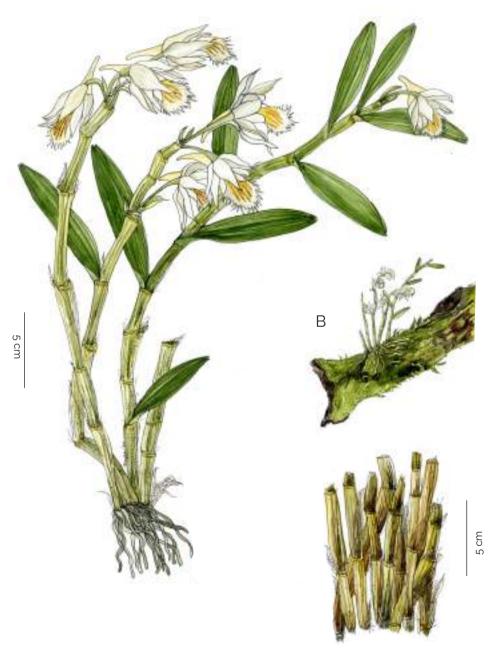


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THE LONG-HORNED DENDROBIUM

PLANT INFORMATION	
Genus	Dendrobium
Local name/s, trade name/s	Nepal: Sunakhari, Jiwanti; India: Hatajori; China: Long- spurred Dendrobium, Changju Shihu
English Name	The Long-horned Dendrobium
Parts in use and trade	Stem
Scientific name	Dendrobium longicornu Lindl.
Harvest time	mid June to mid September (Ashar to Bhadra)
Identification of trade part (shape, size, colour)	Shape: Suberect, terete, thin, clustered, pendulous, cylindric, tufted, minutely sulcate, somewhat fractiflex
	Size: 7 to 35 cm long, 2 to 4 mm in diameter, slightly rigid and unbranched, has many nodes and internodes of 2 to 4 cm
	Colour: Light green covered in black hairs stems
Remarks related to trade parts	Stems are used in ancient Chinese medicines
	Plant size: 10 to 40 cm tall
Morphological characters (plant size, roots, stem, leaf, inflorescence, flower, floral parts)	Root: Adventitious, often aerial
	Stem: Tufted, minutely sulcate, covered by black hairs, usually leafy, often with one or more swollowen internodes forming pseudobulbs
	Leaf: Usually entire, alternate or opposite, plicate and usually sheathed, 4 to 7 × 0.5 to 0.8 cm, covered with fine black hairs, lanceolate, apex acute
	Inflorescence: Erect or hanging, borne on leafy stem, short, axillary, raceme with one to many flowered either on basal, lateral or terminal end, floral bracts ovate, acute
	Flower: Pure white flower with orange streak, 4/5 cm across, Lip is rhombic, 3 lobed; lateral lobe rounded, midlobe suborbicular, fimbriate
	Sepal: Lanceolate, acuminate
	Petal: Ovate to lanceolate, acute
	Lip: Rhombic, 3-lobed, lateral lobes rounded, midlobe suborbicular, fimbriate and has a comb like structure
	Column: Short
Flowering	September to November (mid Bhadra to mid Mangsir)
Conservation status	CITES Appendix II
Habitat	Epiphytic



Dendrobium longicornu Lindl. . A, Mature plant; B, Habitat; C, Stem

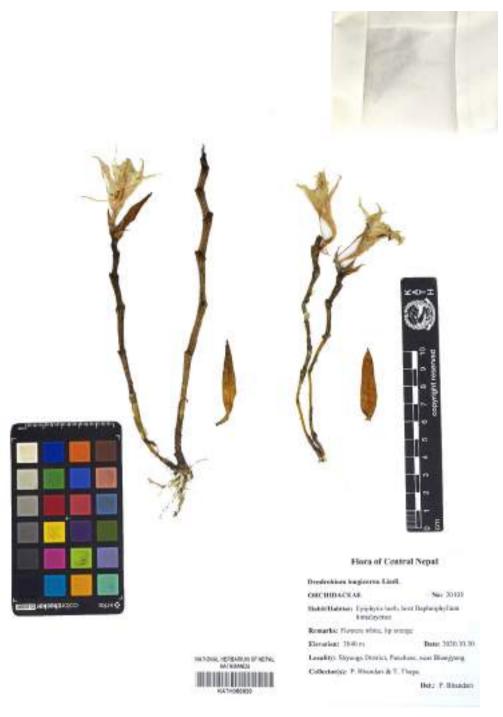


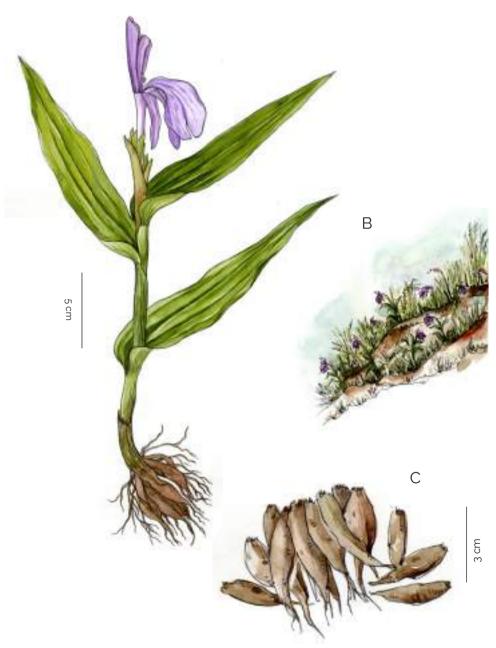




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HARDY GINGER

PLANT INFORMATION	
Genus	Roscoea
Local name/s, trade name/s	Nepal: Gurkha, Rasgari, Katare, Kakoli; India: Yuwangon; China: Ivory Ginseng
English Name	Hardy Ginger
Parts in use and trade	Rhizome
Scientific name	Roscoea purpurea Sm.
Harvest time	October (mid Ashoj to mid Kartik) (Autumn)
Identification of trade part (shape, size, colour)	Shape: Thick, fleshy, fasciculated, tapering at the ends Size:4 to 5 gms each
	Colour: Light brown
Remarks related to trade parts	It is an astavarga plants and used as tonic in many ayurvedic formulations such as Chyawanprash, and it is often confused with panchaunle rhizome
Morphological characters (plant size, roots, stem, leaf, inflorescence, flower, floral parts)	Plant size: 30 to 45 cm tall
	Root: Fleshy and thick
	Stem: Leafy, elongated with 5 to 6 lanceolate leaves
	Leaf: 4 to 8 somewhat wavy, bright green, smooth or ciliate leaves with purple or reddish leaf sheaths; narrow ovate bracts mostly hidden by the upper leaves Inflorescence: Sessile spike holding flowers
	Flowers: Purple, mauve, red or white, appearing in succession from among the upper leaves; lasting only about 2 days
	Petal: Dorsal petal ovate, 2 cm wide and divided at the tip, and lateral lobes linear lanceolate
Flowering	June to September (mid Ashar to mid Bhadra)
Conservation status	Not Assessed
Habitat	Terrestrial



Roscoea purpurea Sm. A, Mature plant; B, Habitat; C, Rhizome



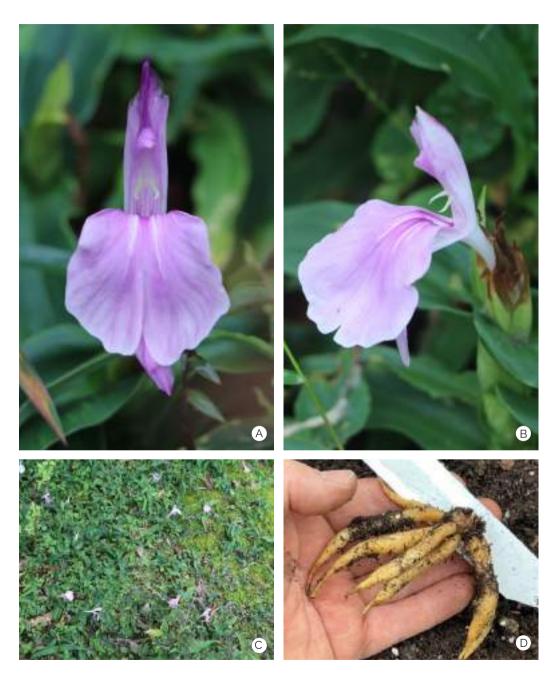
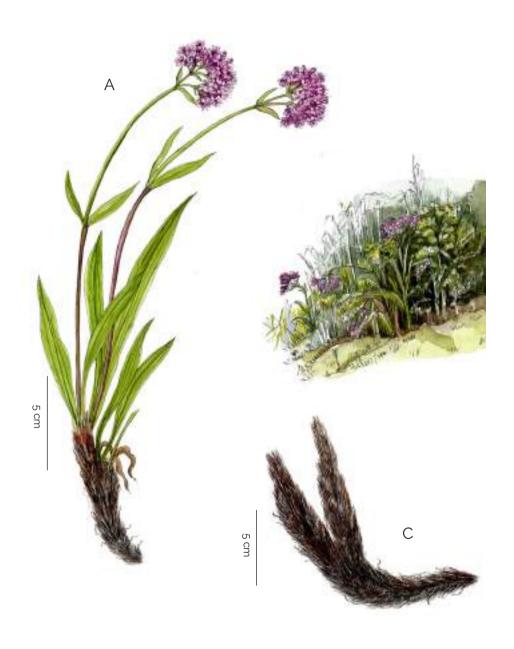


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SPIKENARD

Genus	
	Nardostachys
Local name/s, trade name/s	Nepal: Jatamansi; India: Jatamansi, Balchar; China: Sweet pine
English Name	Spikenard
Parts in use and trade	Rhizome
Scientific name	Nardostachys jatamansi (D.Don) DC.
Harvest time	October to November (mid Ashoj to mid Mangsir) (Normally after seed dispersal)
	Shape: Rhizomatous herb, surrounded with roots, tapering (thin at the tip) and covered with dense remains of leaves' bases the combination looks like heavy beard
Identification of trade part (shape, size, colour)	Size: The rhizome is 0.5 to 1 cm thick and 10 to 15 cm long
	Colour: Dark brown, tap root is even longer than 20 cm, yellowish brown with many/dense hair
Remarks related to trade parts	The leftover rhizome after extraction of essential oil is called Marc, Jatamansi oil is often used as an alternative for Valerian (a herbal medicine used for insomnia, anxiety, and nervous restlessness)
Morphological characters (plant size, roots, stem, leaf, inflorescence, flower, floral parts)	Plant size: 10 to 70 cm tall
	Root: Thick, long reaching upto 30 cm; bearing upto 30 to 50 rhizomes
	Rhizome: Dark brown, tapering and densely covered with old leaves bases appearing like a heavy beard; sweet smelling
	Leaf: Dorsiventrally flattened, radical and cauline leaves, rosette arrangement, lanceolate with 5 to 25 cm length and 1 to 3.5 cm wide, radical leaf with petiole, cauline leaves sessile
	Inflorescence:10 to 60 cm long peduncle with 4 to 10 flowers; presence of bracts and bracteoles Flower: Pinkish red to bluish white
	Sepal: Two sepals fused and three free, persistent; corolla fused to form corolla tube
Flowering	September to October (mid Bhadra to mid Poush)
Conservation status	CITES Appendix II, IUCN RL - CR, Forest Act - Ban on raw export
Habitat	Terrestrial



Nardostachys jatamansi (D.Don) DC., Mature plant; B, Habitat; C, Rhizome



Nardostachys grandiflora - Nardostachys jatamansi Picture credit: ©National Herbarium And Plant Laboratories



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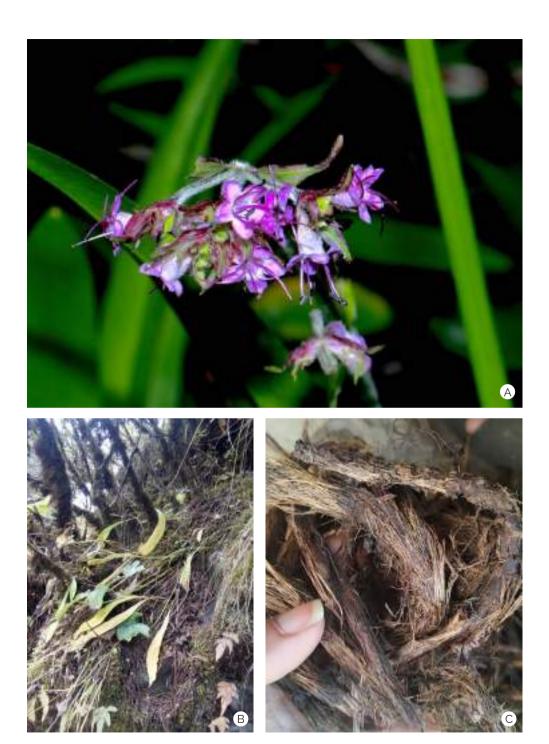


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TERMINOLOGY DESCRIPTION

Abaxial The lower surface of a leaf

Acuminate Tapering to a point

Acute Tapering to a sharp point

Adventitious Arising from an unusual position (e.g., roots from

stems or leaves)

Aerial Located or occurring above ground, often in air (e.g.,

aerial roots)

Alternate Leaves or flowers arranged alternately on the stem
Assimilatory Related to photosynthesis or nutrient absorption
Axillary Growing from the axil (angle between stem and leaf)

Bifid Divided into two parts or lobes

Bilobulate Having two lobes

Bract Leaflike structure bearing a flower or inflorescence

Cauline Attached to the stem or arising from it

Ciliate Margins fringed with fine hairs

Crisped Curled or wavy margins

Dentate Toothed or with teeth-like projections along the

margin

Entire Smooth margins, without teeth or lobes

Erect Upright or vertical position

Fibrous Composed of thread-like or stringy structures, often

referring to roots

Fimbriate Having a border of hairs
Free Not attached; separate
Hanging Drooping or suspended

Incurved Curving inward

Lamellae Thin plates or layers, often seen in mushroom gills

Lanceolate Tapering to a point at the apex (spear-shaped)

Lip Modified petals, often large and colorful, act as a

landing platform and guide for pollinators in orchids.

Linear lanceolate Long and narrow, with a lance-like tapering end
Oblanceolate Inversely lance-shaped, tapering to the base
Oblong Longer than wide, with nearly parallel sides

Obovoid Egg-shaped, broader at the apex

Opposite Leaves or flowers arranged in pairs on opposite sides

of a stem

Ovate Egg-shaped, broader at the base

Pendulous Hanging down

Peduncle The stalk bearing a flower or flower cluster

Persistent Remaining attached after other parts are shed

Plicate Folded into pleats or ridges

Raceme A flower cluster with stalked flowers along a central

axis

Radical Arising from the root or base of the plant

Reflexed Bent backward

Rosette A circular arrangement of leaves at the base

Sessile Devoid of stalk, directly attached

Spathulate Spoon-shaped

Spurred With an elongated appendage or spur, often at the

base of a petal

Suborbicular Almost circular in shape

Succession Sequential development of flowers or leaves

Sulcate Grooved or furrowed

Terminal At the tip or apex of the stem

Toothed Having small projections along the margin

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This book was developed in collaboration of:





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