

## NERVILIA FALCATA (KING & PANTL.) SCHLTR. (ORCHIDACEAE) A NEW RECORD FOR PENINSULAR INDIA

Sarat Misra, S P Panda, and P K Nayak

Orchid Study Centre, C-89 HIG, Baramunda Housing Board Colony  
Bhubaneswar-751 003, Odisha, India

### Abstract

*Nervilia falcata*, known as an endemic species of the sub-Himalayan tracts in the NorthEast and NorthWest India, has been recorded in the state of Odisha extending its distribution range to peninsular India. Illustrations and morphological description for this rare species has been provided in this communication.

### Introduction

DURING A search for orchids in the montane forests of the Koraput district in August 2009, we came across a small colony of tiny orchids growing among rocks. The plants at first sight looked like *Nervilia infundibulifolia* Blatt. & McCann, a species distributed widely in Odisha (Misra, 2004). However, in view of their deep green, irregularly angular, prominently acuminate, and strongly undulated leaves that remained slightly raised above the ground, they appeared more closely allied to *N. falcata* (King & Pantl.) Schltr. and *N. mackinnoni* (Duthie) Schltr.

The plants were collected and grown in the orchidarium at Regional Plant Resource Centre, Bhubaneswar. The leaves perished in the dry season but they reappeared during the rainy season. The flowers, however, remained elusive till June next year (2011). Detailed study of the flower structure, unambiguously established the taxonomic identity of the collections as *Nervilia falcata*. Incidentally, the young leaves invariably supported dark purple streaks along the veins on their adaxial surface. The streaks faded soon after and were completely lost by the second week of August. Illustrations and morphological description for the species in flowering and leafy stage are provided here.

### Species Description

*Nervilia falcata* (King & Pantl.) Schltr. In Engl., Bot. Jahrb. 45: 403. 1911; Deva & Naithani, Orch. Fl. Northwest Himalaya: 79, fig. 34. 1986; Ghatak, J. & R. K. J. Devi, Biol. Cons. Cult. Orch.: 358. 1986; Pearce & Cribb, Orch. Bhutan: 57. *Pogonia falcata* King & Pantl., J. Asiat. Soc. Bengal 65(2): 129. 1896.

Type: India, Sikkim, Duars, East of Jaldacca River. R. Pantling 439 (holo CAL !)

*Terrestrial*, 1- leaved tiny herbs growing from corms. Corm globose, c. 13 mm across, slightly compressed from top to bottom, joined, with small root-knobs. Stem borne on apex of corm, erect, dirty white, warty, with two tubular sheaths above; Stolons borne on top of the stem immediately below the ground, two, opposite, slender, up to 10 cm long, many-noded. Leaf slightly above the ground, broadly cordate, 4.4 - 7.7 x 3.2 - 6.7 cm, acuminate, sometimes the tip extended, margin strongly



a



b



c

Fig. 1 a-c. *Nervilia falcata* : a, Leaves showing dark purple streaks along the veins; b, Older leaves without purple streaks; c, Inflorescence showing a solitary flower.

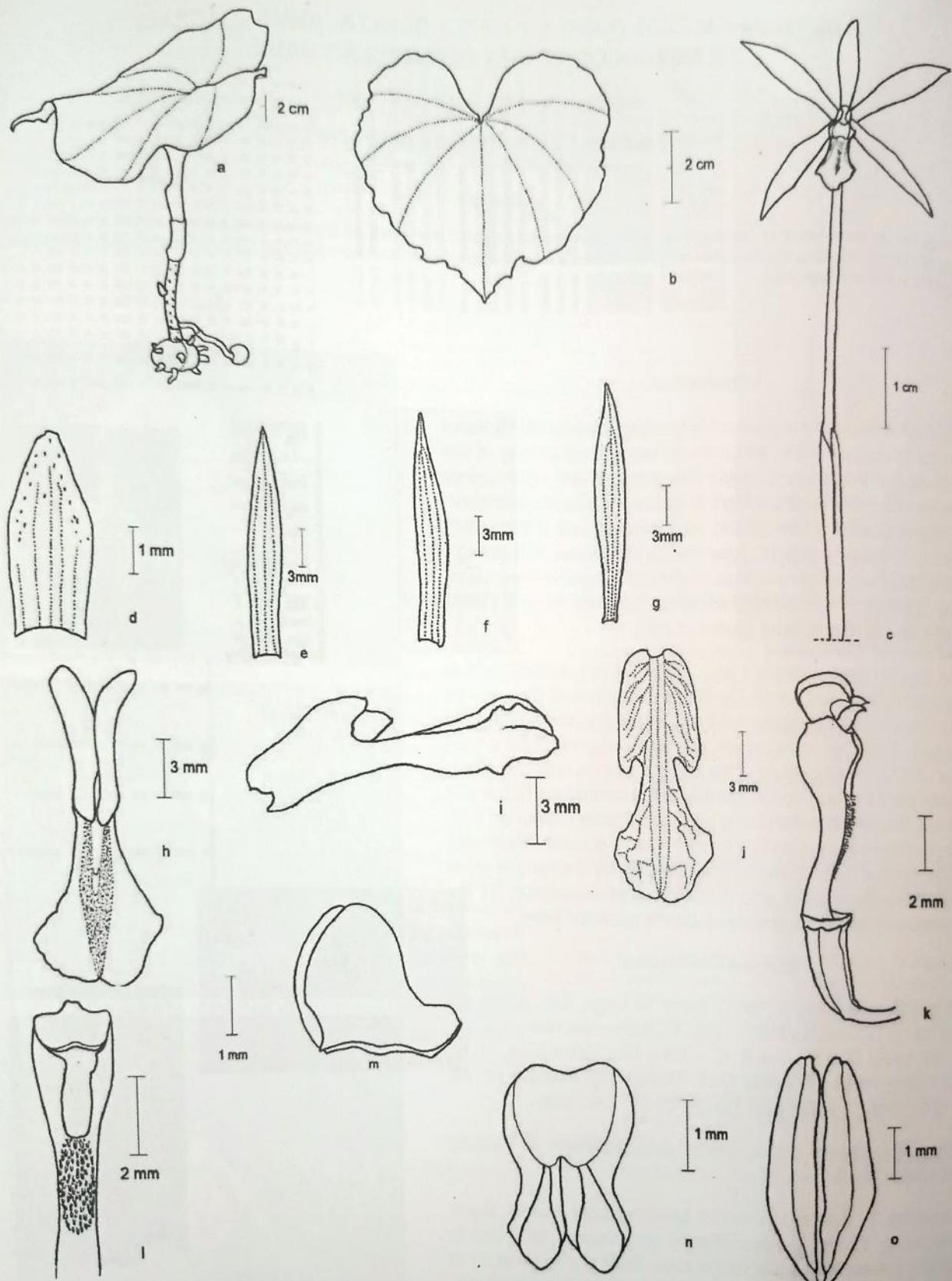


Fig.2 a-o. *Nervilia falcata* (King & Pantl.) Schltr.: a, Leafy plant; b, Leaf seen from top; c, Inflorescence; d, Bract; e, Dorsal sepal; f, Lateral sepal; g, Petal; h-i, Lip in normal position, seen from top and side; j, Lip spread out; k, Pedicel, ovary column and anther in position, seen from side; l, Column, anther removed, front view; m-n, Anther, pollinia removed, side view and under-face; o, Pollinia. (drawings by S. Misra)

undulate and irregularly angular with somewhat rounded angles, glabrous on both faces, fleshy, deep green above, pale green beneath, with angular veins corresponding to the depressed ones on the upper face. Inflorescence heteranthous, terminal, one-flowered, scape c. 10 cm tall; peduncle slender, terete, brittle, blunt, c. 4.5 x 2 mm, indistinctly 5-veined. Flower at right angles to the scape, c. 25 x 30 mm, inodorous. Pedicel curved, small, slender; ovary winged c. 3.5 x 1 mm. Sepals and petals gaping, subsimilar, oblong-ob lanceolate, acuminate, broader in the middle, slightly concave, 3-veined, greenish maroon; dorsal sepal c. 18.5 x 3 mm; lateral sepals 18 x 2.75 mm; petals 18 x 2.6 mm. Lip adnate to the base of the column, sessile, lateral lobes waxy white; terminal lobe clouded violet with white edges, and a narrow median yellow streak from base to about the middle, c. 17 x 7 mm, 3-lobed; lateral lobes convolute round the column forming a tube, apices slightly falcate, obtuse, c. 8 x 2 mm; mid-lobe narrowly obovate, blunt, retuse, c. 9.5 x 7 mm; lamina 3-veined, lateral veins emitting branches on the outer side all along, lamina on the upper surface minutely gland-dotted, the glands prominent along the veinlets; lower surface glandular only along the veins and veinlets; area between lateral veins forms a lanceolate glandular-papillose shallow ridge from base to tip of the lip, ridge thicker about the base as also beyond the widest width of the mid-lobe.

Column white, clavate, c. 7 mm long, curved about the middle; anterior face below the stigma puberulous in

an elliptical patch; apex winged on front, rounded behind; clinandrium cupular, wide. Stigma oblong, c. 2 mm long; rostellum short and wide, front edge upturned. Anther incumbent, helmet-shaped, fleshy, under face slanting from base to about the middle and then 2-chambered, white. Pollinia 2, sessile, projecting forward from the anther locules, narrowly and obliquely ellipsoid, deeply 2-cleft. Fruit not seen.

*Flowering* : Mid-June, lasting for 5-7 days.

*Habitat* : Tropical moist deciduous forest, in partly open situation in a sloping ground, with rocky-loamy soil.

*Occurrence in Odisha* : Koraput district, Laxmipur, Sorisapadar; about 800 m; occasional.

*Distribution* : India (Sikkim, Manipur, Uttarakhand, Odisha); endemic.

*Specimens examined* : Sikkim : Pantling 439 CAL. Odisha: S. Misra, S. P. Panda & P. K. Nayak. TOB 572 CAL; 572 A-E under cultivation at RPRC.

*Taxonomic note* : *Nervilia falcata* closely resembles *N. infundibulifolia*, a species originally described in India from the state of Maharashtra and subsequently known to occur in the states of Karnataka, Odisha, Uttarakhand and Arunachal Pradesh; and outside India from Thailand. The shape of the lip in the latter species is much varying.

*Nervilia falcata* was first described by King and Pantling in 1896 from collections in Sikkim Duars (cited as 'Bhutan'); it lacked a leaf. They have again provided

Table 1. Morphological variation between *Nervilia falcata* and *Nervilia infundibulifolia*.

Feature	<i>Nervilia falcata</i>	<i>Nervilia infundibulifolia</i>
<i>Leaf</i>		
Position	Slightly above the ground	Lying flat on the ground
Shape	Broadly cordate, apex acuminate	Broad-ovate to suborbicular, apex obtuse, often not differentiated
Margin	Strongly undulated, irregularly angular	Almost straight (between terminating points of the veins) or sparingly crenulate
Size	44-77 x 32-67 mm	25-30 mm across, rarely larger
Colour	Deep green on upper surface, pale green beneath	Pure green on upper surface, pale green beneath
Lip ornamentation	One median narrow lanceolate glandular-papillose ridge extending from base to tip of the blade	Three papillous ridges - two placed close centrally in the hypochile and a median one in the epichile
Column	Anterior face hairy	Anterior face glabrous
Pollinia	Narrow and obliquely ellipsoid	Clavate

(King and Pantling 1898: 268, t. 357) description and illustrations for this entity. The species was subsequently reported from Uttarakhand (Deva and Naithani, 1986) and Manipur (Ghatak and Devi, 1986). The taxonomy of this species, as well as its close relatives, has been discussed here. Our observations on the vegetative and floral traits match with those of *Nervilia falcata* described by King and Pantling, although in our plants the lateral lobes of the lip are not as slender and falcately bent as in the plants from Sikkim. The two key features - like the lip having a narrow-lanceolate glandular-papillose ridge running from the base to the tip of the lip; and the anterior face of the column puberulous, are very much present in our plants. These two features separate *N. falcata* from its close relative *N. infundibulifolia*, where the lip has two papillar ridges in the lateral lobes and a similar median ridge on the mid-lobe; the anterior face here is glabrous. We therefore, identify our present collection of plants from Koraput as *Nervilia falcata*. The morphological variation between these two related species is provided here (Table 1).

The genus *Nervilia* Comm. ex Gaud. was earlier known in the state of Odisha (Misra, 2004: 237) with six species viz. *Nervilia crociformis* (Zoll. & Mor.) Seidenf., *N. infundibulifolia* Blatt. & McCann, *N. plicata* (Andr.) Schltr., *N. aragoana* Gaud., *N. gammieana* (Hook. f.) Schltr. and *N. scottii* (Rchb. f.) Schltr. The first three

species have short petioles, prostrate-leaves and 1-2 flowers; the other three have long-petioled-leaved and several flowers. These inhabit as undergrowths in shady localities with loose and moist soil in moist deciduous to semi-evergreen montane forests. *Nervilia*, now with seven species, is very well represented in Odisha compared to other regions in India.

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