

# Occurrence and Ethnic Uses of *Cryptocoryne consobrina* Schott, A Lesser-Known Endemic Aroid, in Kerala and Tamil Nadu

## Review Article

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### Abstract

*Cryptocoryne consobrina* Schott, a narrow endemic and threatened plant species of the Western Ghats, is described. Notes on distribution, ethnobotanical uses along with photographs and illustrations are also provided. The present collection of this species, from Idukki District and Tiruppur District, confirming its occurrence in Kerala and Tamil Nadu respectively. The plant grows in thickets along the riverbank and exposed areas of the riverbed. The plant forms a preferred leafy vegetable for the local inhabitants, especially the Malappulaya Tribe of Marayur apart from being a herbal remedy for peptic ulcer.

**Keywords:** Araceae; *Cryptocoryne*; Endemic, Kerala; Malappulaya Tribe; Tamil Nadu

### Introduction

The genus *Cryptocoryne* of family Araceae is represented by about 50 species in the tropics embracing Asia and Malaysian Archipelago (Mayo *et al.*, 1997) [1], including six species reported from the Indian subcontinent (Sunil and Sivadasan, 2009) [2]. *Cryptocoryne consobrina* was originally recognised and named by Schott in 1857 based on a collection from 'Nilgherries' (Nilgiris), India in Hooker and Thomson's herbarium (K). Branes collected the species from Parambikulam and adjacent Karappara river basin of Kerala in 1934, after which no collection was known from Kerala. Though a specimen of *Cryptocoryne* collected from Malappuram District in Kerala was misidentified as *C. consobrina* (Sivadasan, 1985; Jacobsen *et al.*, 1989a, 1989b) [3,4,5], it turned out to be a new species *C. sivadasanii*

on detailed investigation by Bogner (2004) [6]. Sabastian collected the species from Aliyar submergible area of Coimbatore District, Tamil Nadu in 1962, after which no collection was known from Tamil Nadu. The species, which was considered extinct until recently has been rediscovered by Sunil and Sivadasan (2009) [2] from Coorg District in Karnataka State. The present collection of *Cryptocoryne consobrina* Schott, from Marayur in Idukki District and Kodanthoorkkudi in Tiruppur District, while confirming its occurrence in Kerala and Tamil Nadu respectively forms distributional record from new localities of the two southern States of India.

The location of the collection in Kerala (10° 15' 12.5" N latitude and 77° 10' 21.6" E longitude) at an altitude of ~865 m above MSL is within Pambar River basin, one of the three east-flowing rivers of

the Kerala, which is a tributary of Amravathi River in Tamil Nadu that eventually joins River Kaveri near Karur. The site of collection in Tamil Nadu (10° 15' 12.5" N latitude and 77° 10' 21.6" E longitude) at an altitude of 423 m above MSL is within Amaravathi River basin, downstream of the former. The plant grows in thickets along the riverbank and exposed areas of the riverbed, which is characterised by rocky (polygonal) boulders with several potholes at places. A thin layer of soil along with debris trapped between boulders make an excellent habitat for its profuse growth. Incidentally, the plant forms a preferred leafy vegetable for the local inhabitants, especially the Malappulaya Tribe of Marayur apart from being a herbal remedy for peptic ulcer.

The following forms a brief taxonomic description of the specimen collected, along with illustrations and photographs covering its habitat, habit, characteristic features and ethnic uses.

***Cryptocoryne consobrina*** Schott, in Bonplandia 5: 222. 1857, Prodr. Syst. Aroid. 16. 1860; Engler in DC., Monogr. Phan. 2: 626. 1879; Hook.f., Brit. India 6: 493. 1893; Engler, Pflanzenr. IV. 23F (73): 247. 1920; Fischer in Gamble, Fl. Pres. Madras 1575.1931, in Hooker's Icon. Pl. 34: t. 3305, 1939; de Wit, Misc. Pap. Landbouwhoghe school 6: 265. 1970, Aquarienpfl. 142. 1971; Rataj, Stud, CSAV 3: 42. 1975; Jacobsen, Cryptocoryner 54. 1979; Cook, Aqua. Wet. Pl. India 55. 1996; Sunil & Sivadasan, Aroideana 32: 142- 146. 2009.

**Type:** Maysor and Carnatic, 'Nilgherries', Herb. Ind. Or. *Hook. f. & Thomson*, Madras Coll. No. 34 (K000950319!).

Submerged to emergent rhizomatous creeping perennials. Rhizome 0.5-1.5 cm thick knotty, white inside. Leaves dimorphic, petiolate: submerged leaf blades 2-6 x 0.5-1 cm, linear-lanceolate, base cuneate, margins closely undulate, apex acuminate, dark green coloured, petiole 2-6 cm long; emergent leaf blades, 5-45 x 1-6 cm, flat, linear-lanceolate to lanceolate, base cuneate running in to the 3-20 cm long petiole, margins entire, apex acuminate, light green coloured. Spathes 6-20 cm long. peduncle 1.5-6 cm long; spathe with basal swollen cylindrical tube (kettle), light purple without and deep purple within; transverse septum roofing the cylindrical portion creamy in colour with many purple spots; upper tube up to 11 cm long, light purple, slightly twisted, with a collar around the mouth and purplish spots at the throat within and down below; apical limb portion expanded, 2.7-6 x 0.7-1.4 cm, ovate-lanceolate, long acuminate, sometimes reflexed and twisted; greenish brown outside, creamy to yellowish within with deep purple or reddish spots, verrucose, margins with warty teeth-like projections. Spadix enclosed in the cylindrical swollen base of spathe, 1-2 cm long with conical pistillate portion at the base followed by a sterile naked portion; staminate portion ellipsoid with a terminal sterile top-shaped appendix. Female flowers 5-6 at base, connate in a whorl, 1-locular; stigma sessile, circular with central depression; ovules many; a few neuter flowers present at the top of the pistillate portion, Male flowers many, each with a single bithecal sessile stamen. Inflorescence 9-15 mm across, ovoid to conical; seeds numerous, ellipsoid.

**Flowering & Fruiting:** December- February

**Habitat:** Riverine

**Distribution:** Endemic to the southern Western Ghats (Karnataka, Kerala and Tamil Nadu)

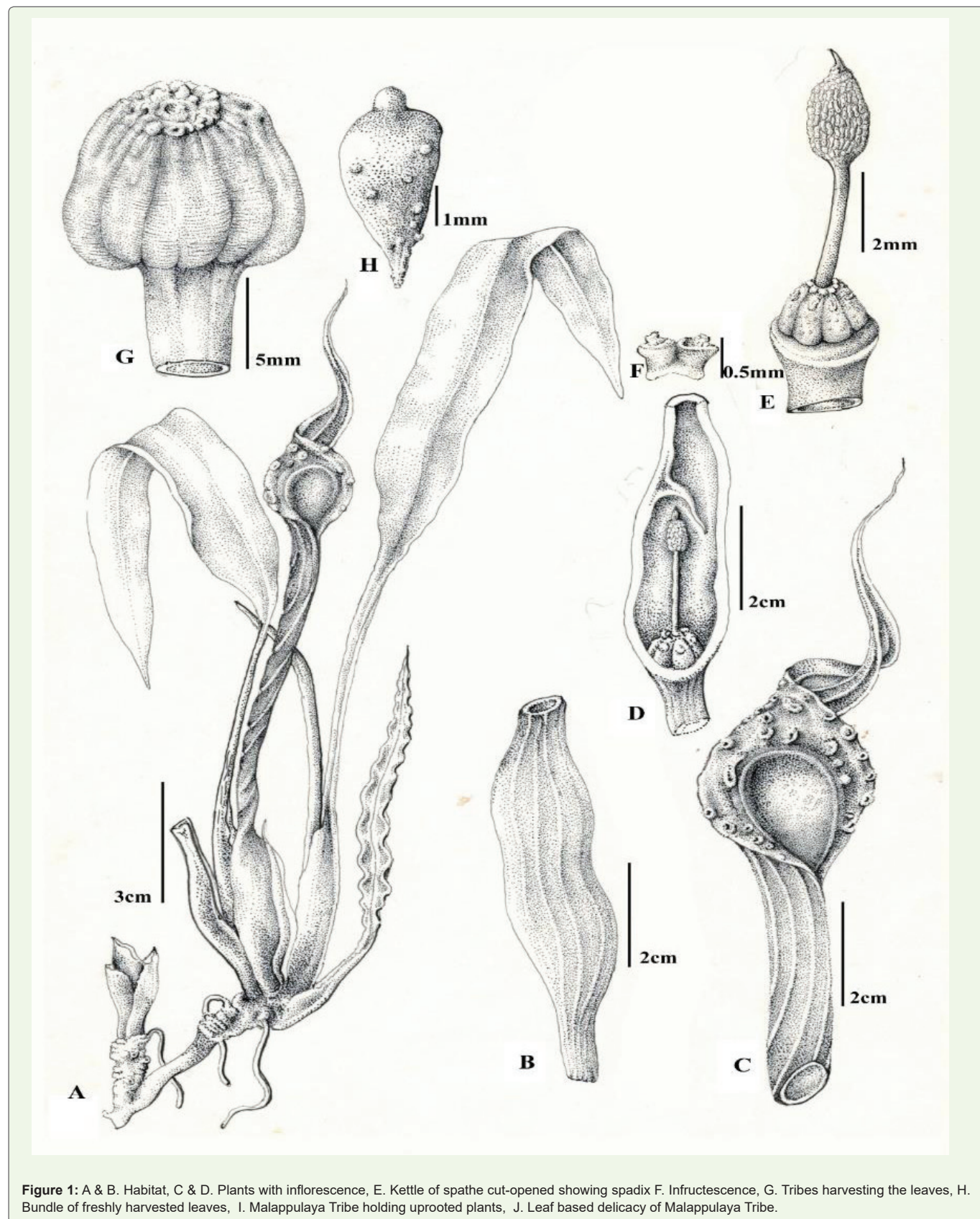
**Specimen examined:** Karnataka State, Coorg District, Cauvery Nissargadana, ca. 1000 m MSL., 27-01-2006, C.N. Sunil 4101 (CALI); *Ibid.*, 03-0302007, C.N. Sunil 4237 (CALI); Kerala State, Idukki District, Pambar, ca 865 m, 7-11-2010, T. Shaju & P.K. Shaji, 7561 (ERRC); Tamil Nadu, Tiruppur District, Kodanthoorkkudi, 423 m, 28-12-2011, P.K.Shaji & T. Shaju, 74200 (TBGT); Kerala State, Idukki District, Pambar, near Thoovanam falls, 865 m., 09-06-2022, J. S. Ajinsha, 99515 (TBGT).

**Ethnic uses by the Malappulaya Tribe:** *Cryptocoryne consobrina* is used as a leafy vegetable (the preparation is said to be medicinal as well), especially by the Malappulaya Tribe of the Chinnar-Marayur belt. The Tribe, also known as 'Karavazhis', represents one of the primitive agrarian ethnic groups confined to the Anchanad valley in Idukki District. They collect the leaves either by cutting them individually or by uprooting the whole plant and gathering the leaves separately. The freshly harvested leaves are washed and cut into small pieces of 1-2 cm. The chopped leaves are then boiled in salted water for 2-3 minutes in an earthen pot, the water is drained off thereafter, and the process is repeated 3-4 times. The half-cooked leaves are then crushed using a wooden ladle (*thavi*) and made into an aggregate mass by adding grated coconut, chopped onions green chillies, turmeric powder and salt. In a separate earthen vessel (*chatti*) or kadai, oil (coconut oil) is heated and mustard seeds spluttered followed by adding curry leaves and 2-3 red chillies. To this, the above leaf mass is added, sprinkled with little water and covered the vessel using a lid (another flattened earthen vessel, *adappu chatti*). After simmering for about 5 minutes, the lid is removed and the whole content is mixed thoroughly and kept it on low flame till done. The preparation (*thoran*) is served hot as a side dish with boiled rice in plantain leaves (Figure 1 and 2).

The plant is also used as a herbal remedy for peptic ulcer by the same Tribe living across the State border, at Kodanthoorkkudi in Tamil Nadu, in the vicinity of Amaravathi Reservoir. Here, the freshly harvested whole plant is washed and chopped into pieces followed by boiling in water for 2-3 minutes. After the water is drained off, a paste of turmeric (fresh fingers), garlic (cloves) and asafoetida is added to the whole aggregate and is cooked in low flame until a dry mass is obtained which is consumed orally twice a day by the patient for a period of 7-10 days.

## Conclusion

*Cryptocoryne consobrina* Schott, was believed to be an extinct species until it has been rediscovered from Coorg District of Karnataka State in 2009. The present collections confirming its occurrence in Kerala and Tamil Nadu forms distributional record respectively for the two southern States of India. The species sparsely distributed in the localities of collection owing to destruction/alteration of habitat and assessed as 'Near Threatened', as there is a continuing decline in the quality of habitat as well as extent of occurrence. For conserving the species, no management actions known to be taken. It is therefore, imperative to assess the extent of occurrence and pattern of distribution of the species, towards planning conservation



**Figure 1:** A & B. Habitat, C & D. Plants with inflorescence, E. Kettle of spathe cut-opened showing spadix F. Inflorescence, G. Tribes harvesting the leaves, H. Bundle of freshly harvested leaves, I. Malappulaya Tribe holding uprooted plants, J. Leaf based delicacy of Malappulaya Tribe.





**Figure 2:** A. Habit, B & C. Inflorescence (b. Basal portion of spathe with swollen cylindrical tube (kettle), c. apical portion of spathe showing limb) D. kettle of spathe cut-opened showing spadix, E. Spadix with pistillate & staminate portions F. Male flower, G. Infructescence, H. seed

management. *Cryptocoryne consobrina* Schott, is also used as a leafy vegetable and herbal medicine by the agrarian ethnic groups of the locality.

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