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Need for the conservation of *Combretum razianum* K.G.Bhat (Combretaceae), an Endemic Threatened Species of Western Ghats

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ABSTRACT

This is the first report on extended distribution of *C. razianum* K.G.Bhat in the Western Ghats region of Karnataka. The floristic composition the area (Charmady Ghat region) in which *Combretum razianum* is growing was carried out. The regeneration of this species was found to be very poor.

Keywords: *Combretum razianum,* Western Ghats, Charmady, Regeneration, Endemic, Threatened, Conservation.

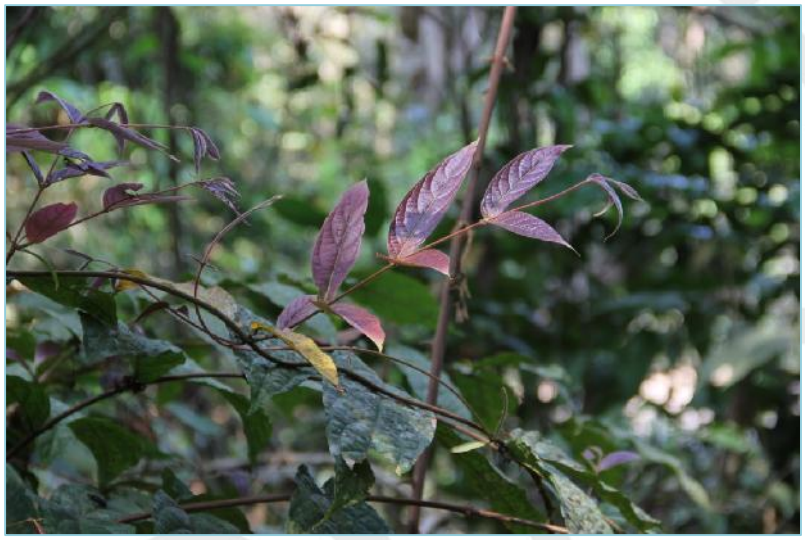
1. INTRODUCTION

The Combretaceae is a large family of herbs, shrubs and trees, comprising about 20 genera and 600 species with tropical distribution around the globe and centers of diversity in Africa and Asia (Lima et al 2012). The genus *Combretum* Loefl. of this family comprising of about 370 species of trees and shrubs, roughly 300 of which are native to tropical and southern Africa, about 5 to Madagascar, some 25 to tropical Asia and approximately 40 to tropical America. The genus is not reported from Australia. *Combretum razinaum* K.G. Bhat seems to be a very significant endemic species, Endemic to Dakshina Kannada District of Karnataka (Bhat, 2005). So far no work has been done with regard to regeneration and distribution. The present work deals with vegetation composition of the area in which significant population of *C. razianum* exists.

2. DESCRIPTION

A large, scandent shrub with stout spines at the bases of the branchlets and on the old stem; branchlets brownish, terete, rusty tomentuloose; hairs up to 1 mm long, finally glabrous. Leaves opposite, sometimes subopposite or

A climbing branch of *C.razianum*



C. razianum - young foliage (Copper colur)

Representative plants of *C. razianum* are growing at the entrance of the green house in Pilikula Arboretum

alternate; lamina 8-25 X 3-9 cm, elliptically to oblong- or ovate-lanceolate, sometimes elliptic-obovate, chartaceous, caudate-acuminate at apex, rounded to subacute or narrowly cordate at base, margin fringed with hairs, lateral nerves 6-10 pairs, prominent beneath, sparsed, pubescent above, pubescent on major nerve beneath; petioles 3-6 mm long, rusty tomentulose. Inflorescence axillary and terminal panicle; raceme up to 11 cm long, arising in the axils of the fallen leaves and terminal; peduncle rusty tomentulose, bracts pinkish, up to 7 X 3 mm, elliptic to lanceolate, pubescent.

Flowers pinkish, 5-merous, on short pubescent pedicels. Calyx-tube ca. 5 mm long expanded portion campanulate, hairy; lobes 5, erect ca. 1 mm long, triangular, hairy. Petals 5, 5-6 X 2-2.5 mm, pinkish, oblanceolate. Stames 10; filaments ca. 1 cm long; anthers suborbicular, ca. 0.5 mm long. Ovary ca. 3.5 mm long, puberulous; style up to 1 cm long; ovules 2-3, pendulous. Fruits up to 3.5 X 2.5 cm, oblong to orbicular, pinkish, 5-winged; wings up to 3.5 X 1.2 cm, with glandular and eglandular hairs.

3. FLORISTIC SURVEY IN CHARMADY

During the routine floristic survey in the Charmady region of Western Ghats of Karnataka (N 13° 02' 103'' & E 075° 23' 418'') the significant population of *Combretum razianum* K.G. Bhat was found. *Cmbretum razianum* was reported as a new species by K. G. Bhat during the year 2005 in the forests of Mundooru, Puttur Taluk, Dakshina Kannada District, Karnataka. This is the first report on extended distribution of *C. razianum* in the Western Ghats region of Karnataka.

The area has an altitude 43 MSL with semi evergreen vegetation. The area experiences good rain fall between June – September with July being the wettest month.

4. RESULTS

The semi evergreen forest of Charmady comprises large number of endemic species. List of species recorded is given in Table 1. Trees species such as *Lophopetalum wightianum* Arn., *Garcinia gummi-gutta* (L.) Robs., *Knema attenuata* (J.Hk. & Th.) Warb., *Schleichera oleosa* (Lour.) Merr., *Hopea ponga* (Dennst.) Mabb., *Dipterocarpus indicus* Bedd., *Diospyros ebenum* Koenig, *Hydnocarpus pentandra* (Buch.-Ham.) Oken, *Syzygium gardneri* Thw., *Pterospermum diversifolium* Blume, *Polyalthia fragrans* (Dalzell) Hook.f. & Thomson, *Beilschmiedia wightii* Benth. & Hook.f., *Archidendron monadelphum* (Roxb.) I.C.Nielsen, *Mimusops elengi* L. and *Artocarpus hirsutus* Lam. are present.

Small trees such as *Ixora brachiata* Roxb., *Mallotus philippensis* (Lam.) Muell.Arg., *Litsea laevigata* (Nees) Gamble, *Aporosa lindleyana* (Wt.) Bail. and *Meiogyne pannosa* (Dalz.) Sinclair; lianas/climbers such as *Calamus thwaitesii* Becc. & Hook. f., *Ancistrocladus heyneanus* Wall. ex J. Graham, *Bauhinia phoenicea* Wight

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Table 1
Floristic composition of Charmady forest area

Sl. No.	Name of the species	Family
1.	*Acacia sinuata* Jacq.	Fabaceae
2.	*Actinodaphne malabarica* Balkr.	Lauraceae
3.	*Alangium salvifolium* (L. f.) Wang.	Alangiaceae
4.	*Anamirta cocculus* (L.) Wight & Arn.	Menispermaceae
5.	*Ancistrocladus heyneanus* Wall. ex J. Graham	Ancistrocladaceae
6.	*Aporosa lindleyana* (Wt.) Bail.	Euphorbiaceae
7.	*Archidendron monadelphum* (Roxb.) I.C.Nielsen	Fabaceae
8.	*Artocarpus hirsutus* Lam.	Moraceae
9.	*Bauhinia phoenicea* Wight & Arn.	Fabaceae
10.	*Beilschmiedia wightii* Benth. & Hook.f.	Lauraceae
11.	*Bolbitis* sp.	Elaphoglossaceae
12.	*Calamus thwaitesii* Becc. & Hook. f.	Palmae
13.	*Chassalia curviflora* (Wall.) Thwaites	Rubiaceae
14.	*Combretum razianum* K.B. Bhat	Combretaceae
15.	*Croton* sp.	Euphorbiaceae
16.	*Desmos lawii* (Hook.f. & Thomson) Saff.	Annonaceae
17.	*Dichapetalum gelonioides* (Roxb.) Engl.	Dichapetalaceae
18.	*Diospyros ebenum* Koenig	Ebenaceae
19.	*Dipterocarpus indicus* Bedd.	Dipterocarpaceae
20.	*Garcinia gummi-gutta* (L.) Robs.	Clusiaceae
21.	*Gomphandra polymorpha* Wight	Icacinaceae
22.	*Hopea ponga* (Dennst.) Mabb.	Dipterocarpaceae
23.	*Hydnocarpus pentandra* (Buch.-Ham.) Oken	Flacourtiaceae
24.	Ixora brachiata Roxb.	Rubiaceae
25.	Ixora polyantha Wight	Rubiaceae
26.	*Justicia montana* Wall.	Acanthaceae
27.	*Knema attenuata* (J.Hk. & Th.) Warb.	Myristicaceae
28.	*Leea indica* (Burm. f.) Merr.	Leeaceae
29.	*Litsea laevigata* (Nees) Gamble	Lauraceae
30.	*Lophopetalum wightianum* Arn.	Celastraceae
31.	*Mallotus philippensis* (Lam.) Muell.Arg.	Euphorbiaceae
32.	*Meiogyne pannosa* (Dalz.) Sinclair	Annonaceae
33.	*Memecylon malabaricum* (Cl.) Cogn.	Melastomataceae
34.	*Memecylon talbotianum* Brandis	Melastomataceae
35.	*Mimusops elengi* L.	Sapotaceae
36.	*Nothopegia racemosa* (Dalzell) Ramamoorthy	Anacardiaceae
37.	*Piper nigrum* L.	Piperaceae
38.	*Polyalthia fragrans* (Dalzell) Hook.f. & Thomson	Annonaceae
39.	*Pothos scandens* L.	Araceae
40.	*Psychotria dalzellii* Hook.f.	Rubiaceae
41.	*Psychotria flavida* Talbot	Rubiaceae
42.	*Pterospermum diversifolium* Blume	Sterculiaceae
43.	*Sarcostigma* sp.	Icacinaceae
44.	*Schleichera oleosa* (Lour.) Merr.	Sapindaceae
45.	*Smilax zeylanica* L.	Liliaceae
46.	*Syzygium gardneri* Thw.	Myrtaceae
47.	*Tetrastigma* sp.	Vitaceae
48.	*Ventilago maderaspatana* Gaertn.	Rhamnaceae

& Arn., *Ventilago maderaspatana* Gaertn., *Smilax zeylanica* L., *Alangium salvifolium* (L. f.) Wang., *Anamirta cocculus* (Linn.) Wight & Arn. and *Sarcostigma* sp. are common.

Undergrowth comprises of *Psychotria dalzellii* Hook.f., *P. flavida* Talbot, *Memecylon talbotianum* Brandis, *M. malabaricum* (Cl.) Cogn., *Chassalia curviflora* (Wall.) Thwaites; ferns such as *Bolbitis* sp., *Pteris* sp. etc where also abundant.

Combretum razianum grows on *Knema attenuata, Lophopetalum wightinanum, Garcinia gummigutta* and *Dipterocarpus indicus.*

5. DISCUSSION

5.1. Regeneration

The regeneration of this species was very poor. This is probably due to high climbing nature and dispersal of seeds on the top of the canopy. The other reason could be because of the slope the seeds might have washed away with the onset of rains. Raising the plants from vegetative cuttings/seeds and growing them in other regions of forests helps in the conservation of this rare endemic species.

5.2. Conservation measures taken

Saplings of *C. razianum* are grown in the Garden of Threatened Plants at Dr. Shivarama Karantha Pilikula Nisarga Dhama, Mangalore.

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