Gomphostemma eriocarpum Benth. (Lamiaceae) - a new record for the Eastern Ghats, India

C. Sudhakar Reddy [1] & Chiranjibi Pattanaik [2]

[1] Forestry and Ecology Division, National Remote Sensing Centre, ISRO, Hyderabad, Andhra Pradesh 500625, India
[2] Salim Ali Centre for Ornithology & Natural History, Deccan Regional Station, Hyderabad, Andhra Pradesh 500017, India
Email: [1] drsudhakarreddy@gmail.com, [2] chiranjibipattanaik@gmail.com (corresponding author)

As part of a project entitled "Biodiversity characterization at landscape level in Eastern Ghats" using remote sensing and Geographical Information System, the authors visited Malkangiri District of Orissa for botanical exploration. The Sileru West Reserve Forest, located in Kondakamberu Hill range of Malkangiri District in Orissa is situated between 18^{0}06'N and 82^{0}07'E at an altitude of more than 1000m. It is a part of the Eastern Ghats, possessing undulating topography with rocky boulders at some places. Sandy and clay type soil predominate the entire district. The mean minimum and maximum temperatures are 11.2 and 44 ^{0}C in the months of December and May, respectively. Humidity is generally high especially in the monsoon and post monsoon months. It receives about 1500mm rainfall annually. Major portion of the annual rainfall is received during southwest monsoon between June to September. This hill range is floristically rich and the vegetation is mostly moist deciduous mixed with few dry deciduous elements. According to Champion and Seth's classification (1968), the forest type is categorized as southern tropical moist deciduous forest. Several plant species were collected during the study and the species were identified by referring the regional floras.

Previous botanical explorations: The pioneering floristic work along peninsular India began with Plants of the Coromandel Coast by William Roxburgh (1795–1820). Some account of the vegetation of Orissa is mentioned in J.D. Hooker and T. Thomson's Flora Indica (1855). The Flora of British India by J.D. Hooker (1872–1897) recorded stray collections from Orissa. Haines' Botany of Bihar and Orissa (1921–1925) and its Supplement by H.F. Mooney (1950) and J.S. Gamble's Flora of the Presidency of Madras (1915–1936) are the important floristic works pertaining to the flora of Orissa. Haines described 2529 plant species, out of which only 30% are reported from Orissa region. Mooney added 150 species to botany besides notes on a number of species described by Haines. Gamble's flora is mostly restricted to southern parts of Orissa. Few sporadic floristic works were carried out by C.E.C. Fischer (1904) followed by D.B. Mukherjee (1935), M.B. Raizada (1948), K.S. Srinivasan & G.V.S. Rao (1961), G. Panigrahi (1963), S.L. Kapoor (1964), and S. Panda & A.P. Das (2004). H.O. Saxena & M. Brahmam (1994–1996) published the Flora of Orissa in four volumes and reported 2727 species belonging to 1062 genera represented by 228 families. *Gomphostemma eriocarpum* Benth. has not been reported from Orissa in any of the earlier publications. Therefore, it is reported here with details such as distribution, brief description, habitat, phenological data, material examined in other Herbarium and biotic association. The voucher specimens are deposited at Herbarium of Regional Research Laboratory (RRL-B), Bhubaneswar.

Gomphostemma eriocarpum **Benth.** in Wall. Pl. Asiat. Rar. 2: 12. 1830–1831; Hook.f. Fl. Brit. India

Date of publication (online): 26 October 2011
Date of publication (print): 26 October 2011
ISSN 0974-7907 (online) | 0974-7893 (print)

Editor: N.P. Balakrishnan

Manuscript details:
Ms # o1709
Received 16 January 2007
Final received 29 September 2011
Finally accepted 10 October 2011

Citation: Reddy, C.S. & C. Pattanaik (2011). *Gomphostemma eriocarpum* Benth. (Lamiaceae) - a new record for the Eastern Ghats, India. *Journal of Threatened Taxa* 3(10): 2147–2150.

Acknowledgements: The authors are thankful to the Department of Space and Department of Biotechnology, Government of India, for the financial support; greatly indebted to Dr. M.S.R. Murthy and Late Dr. M. Brahmam, for their constant encouragement and support. We express our gratitude to the authorities of Orissa Forest Department officials for granting permission and assisting during the field visit. Thanks to Mr. Benjamin Franklin, research scholar for critical examination of the species at BSI Herbarium, Southern Circle, Coimbatore.

4: 698. 1885; Gamble, Fl. Pres. Madras 2: 809. 1957 (repr.ed). *G. oblongum* wight., Ic. t. 1457. 1849. (Lamiaceae).

Description: Slender, erect, perennial herbs up to 75cm tall. Leaves elliptic-oblong or oblanceolate, base acute, margin sharply dentate, apex acuminate, up to 15cm long and 5cm broad, scabrid above (Image 1); petioles up to 2.5cm long. Cymes of the whorls sessile. Flowers light yellow. Bracts lanceolate, shorter than calyx. Calyx-teeth ribbed, linear-lanceolate, ca 1.25cm long. Corolla ca 3.7cm long, pubescent; corolla-tube exserted, up to 4mm long, very slender. Fruits nutlets.

Habitat: Rare in moist deciduous forests.

Specimen examined: 02.i.2004, near Sileru West Reserve Forest Malkangiri District, Orissa, ±1000 m altitude, coll. C.S. Reddy & C. Pattanaik (3218). A good population of mature individuals was observed in the study area.

Distribution: Indomalayan region. In India: Karnataka, Kerala and Tamil Nadu. The present exploration of the species from Orissa-Andhra Pradesh border is an extended of distribution from the southern states. From earlier collection, it was observed that the species confined to the Western Ghats region but the present study found the species in the Eastern Ghats region also (Image 2). It has not been reported earlier from the Eastern Ghats region.

Phenology: Flowering and fruiting between August and January.

Specimens Consulted: The collected species is matched with the authentic herbarium specimens stored at MH, Coimbatore. D.B. Deb 30422, Pamba, Kottayam District, Kerala, 27.vi.1968; M. Chandrabose 49190, Ranni, Quilon District, Kerala, 21.xi.1976; M. Mohanan 59324, Way to Agasthyakudam, Trivandrum District, Kerala, 20.ii.1979; M. Mohanan 69253, Ponmudi, Trivandrum District, Kerala, 16.viii.1980; B.V. Shetty 28007, slope of Mahendragiri, Kanyakumari District, Tamil Nadu, 27.vii.1966; R. Gopalan 886719, Kannikatty R.F., Tirunelveli District, Tamil Nadu, 18.ix.1988.

Biotic association: It is found to grow near moist and shady localities in moist deciduous forests. The associated species are *Barleria strigosa* Willd., *Hemigraphis latebrosa* (Heyne ex Roth) Nees, *Desmodium gangeticum* (L.) DC., *Globba marantina*

Image 1. *Gomphostemma eriocarpum* Benth.

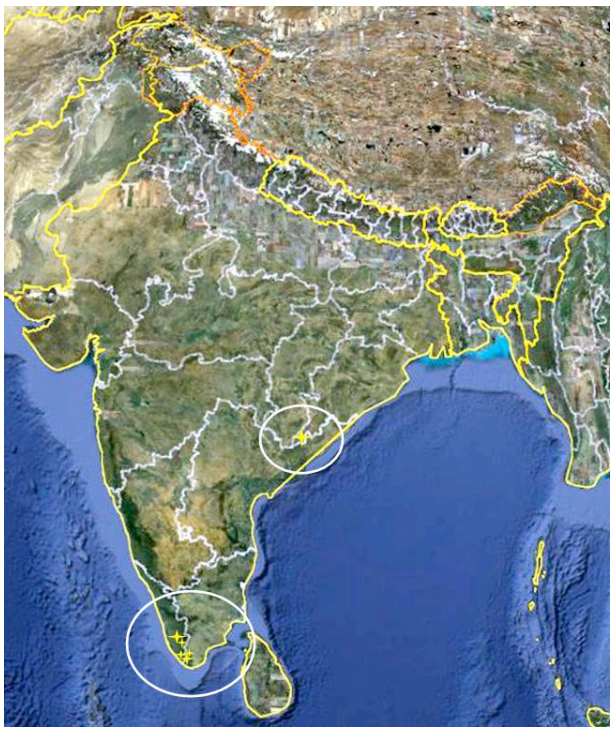

Image 2. Distribution of the species in India

L., *Leea asiatica* (L.) Ridsdale and *Thespesia lampas* (Cav.) Dalz. & Gibs.

Remarks: The species has so far been reported only from the Western Ghats of southern India (Sasidharan 2004) and the present collection from the Eastern Ghats is of phytogeographical significance.

REFERENCES

Champion, H.G. & S.K. Seth (1968). *A Revised Survey of the Forest Types of India.* Manager of Publications, Delhi, 404pp.

Fischer, C.E.C. (1904). Notes on the flora of northern Ganjam. *Journal of the Bombay Natural History Society* 15: 537–556.

Gamble, J.S. & C.E.C. Fischer (1915–1936). *Flora of the Presidency of Madras.* London. (Reprinted ed. 1957), Calcutta, 1685pp.

Haines, H.H. (1921-1925). *The Botany of Bihar and Orissa*. Adlard & Son Ltd., London, 233pp.

Hooker, J.D. (ed.) 1872-1897). *The Flora of British India* (7 volumes). Reeve & Co. Ltd., NR, Ashford, Kent, London, 1172pp.

Hooker, J.D. & T. Thomson (1855). *Flora Indica*. London, 785pp.

Kapoor, S.L. (1964). Contribution to our knowledge of the flora of Mahendragiri Hills of Orissa. *Journal of the Bombay Natural History Society* 61: 354–369.

Mooney, H.F. (1950). *Supplement to the Botany of Bihar and Orissa*. Catholic Press, Ranchi, 525pp.

Mukherjee, D.B. (1935). Notes on a collection of plants from Mahendragiri. *Journal of Indian Botanical Society* 14: 305–311.

Panda, S. & A.P. Das (2004). *Flora of Sambalpur District*. Bishen Singh Mahendra Pal Singh, Dehra Dun, 480pp.

Panigrahi, G. (1963). Gandhamardan Parbat, Orissa - A potential source of important indigenous drugs. *Bulletin of Regional Research Laboratory* (Jammu) 1: 111–116.

Raizada, M.B. (1948). Some interesting plants from Orissa. *Journal of the Bombay Natural History Society* 48: 667–680.

Roxburgh, W. (1795-1819). *Plants of the Coast of Coromandel.* W. Bulmer and co., London, 370pp.

Sasidharan, N. (2004). Biodiversity documentation for Kerala, Part-6: Flowering Plants, Kerala Forest Research Institute, Peechi.

Saxena, H.O & M. Brahmam (1994–1996). *Flora of Orissa.* Vol 1-4, Orissa Forest Development Corporation Ltd., Bhubaneswar, 1700pp.

Srinivasan, K.S. & G.V.S. Rao (1961). The flora of Parlakimedi and its immediate neighbourhood. *Journal of the Bombay Natural History Society* 58: 155–170.