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Cinnamomum sulphuratum Nees (Lauraceae) – an addition to the Flora of Meghalaya state in Northeast India

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Abstract

Cinnamomum sulphuratum Nees (Lauraceae) has been collected from the forest near to Elephant falls, Shillong of Meghalaya and has been reported here as an addition to the flora of Meghalaya state in Northeast India.

Key words: *Cinnamomum sulphuratum*, New record, Meghalaya, Northeast India

INTRODUCTION

The Northeast India is well known for its extremely rich biodiversity (Rao 1990). The genus *Cinnamomum* Schaeffer of Lauraceae has center of diversity in the Eastern Himalaya, the subtropical forests of Meghalaya and the adjoining regions of Northeast India (Haridasan & Rao 1987; Baruah 2014). The richness of the flora of Northeast India is complemented by the occurrence of several primitive taxa of land-plants including the laurels (Barua *et al.* 1988). Almost all the primitive land-plants have very restricted present day distribution in the world. In Northeast India, the genus *Cinnamomum* is represented by 14 species (Kanjilal *et al*. 1940; Deb 1981; Nath & Barua 1994; Baruah & Nath 2001, 2005, 2007, 2009), while Kostermanns (1983) described 13 species from South India. Recently, Choudhury *et al.* (2013) reported six species of *Cinnamomum* from Terai and Duars region of West Bengal, located at the foot of 'Himalaya Hotspot'.

C. sulphuratum Nees is one of the 14 species of *Cinnamomum* so far reported from Assam in Northeast India (Barua & Nath 1994). It is a medium to large aromatic evergreen tree, distributed mainly in South (Kostermanns 1983) and Northeastern parts (Nath & Barua 1994) of India, and in Myanmar (Kurz 1877). The plant is locally known as 'Jungli dalchini', 'Boro-dalcnini' or 'Chasing-Jola' by the people in Karbi-Anglong and Dima-Hasau districts of Assam and its stem bark is traditionally used there as a substitute of cinnamon spice (Baruah & Nath 2006).

On the basis of morphological and odoriferous characters of leaves and stem bark, epidermal and venation characters of leaves, and essential oil characters of leaves and stem bark, following four variants or chemotypes of *C. sulphuratum* from its populations growing in Karbi-Anglong and Dima Hasao (former North Cachar Hills) districts of Assam has been recognized (Baruah 2000; Baruah & Nath 2011; Baruah *et al.* 1999a,b, 2001, 2002; Nath *et al.* 1994):

1. *C. sulphuratum* Variant I or Linalool (leaf) - Cinnamaldehyde (stem bark) type.
2. *C. sulphuratum* Variant II or Citral (leaf) - Cinnamaldehyde (stem bark) type.
3. *C. sulphuratum* Variant III or Cinnamaldehyde (leaf) - Cinnamaldehyde (stem bark) type.
4. *C. sulphuratum* Variant IV or Methyl cinnamate (leaf) - Methyl cinnamate (stem bark) type.

However, Rameshkumar & George (2006) reported one more chemotype of the species, where Benzyl-benzoate was reported as the predominant constituent in the leaf as well as in the stem bark oils of *C. sulphuratum* growing in southern-western Ghats of India.

Fig. 1: Herbarium specimen of *Cinnamomum sulphuratum* Nees collected from near the Elephant Falls, Shillong

Literature survey (Balakrishnan 1983; Haridasan & Rao 1987) reveals that the occurrence of *C. sulphuratum* in the flora of Meghalaya is unknown till date. But the present author during his recent visit (25th -28th October' 2013) to different parts of Meghalaya has come across this taxon near the Elephant Falls located in the periphery of Shillong, the capital city

of Meghalaya state. The odoriferous character of the leaves of this individual is alike to that of the 'Variant IV' of the species, i.e. methyl cinnamate type sweet basil.

The voucher specimens (*A. Baruah 290*) of this taxon of *C. sulphuratum* **(Fig. 1)** have been deposited in the Herbarium of the Department of Botany, Darrang College (DCH), Tezpur, Assam, India, for future reference. However, a herbarium specimen for the same will be lodged at ASSAM for better accessibility to other researchers.

The present discovery of this taxon from Meghalaya in wild state is thus form a new report for the flora of Meghalaya state in Northeast India. In Southern part of India, *C. sulphuratum* has a very restricted distribution particularly in Western Ghats, Nilgiris, Hassan district of Karnataka and Anamalai Hills (Kostermans 1983). The disjunct distribution of *C. sulphuratum* in South India as well as in Northeast India has further strengthened the floristic affinity of these two regions of India.

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LITERATURE CITED

Balakrishnan, N.P. 1983. *Flora of Jowai*, Vol. II. Botanical Survey of India, Howrah.

Barua, I.C.; Chowdhury, B. & Neog, K. 1988. Primitive land plants (Angiosperms) and their distribution pattern in Assam. *J. Econ. Tax. Bot.* 12(1): 81 – 92.

Baruah, A. 2000. *Cinnamomum species associated with the livelihood of people in North-East India: A systematic census with emphasis to ethnobotany*. Ph.D. Thesis. Gauhati University. Assam.

Baruah, A. 2014. *Cinnamon and Cassia – the Spicy Barks*. LAP Lambert Academic Publishing, Germany.

Baruah, A. & Nath, S.C. 2001. *Cinnamomum assamicum* S.C. Nath & A. Baruah A new species of Lauraceae from Northeastern India. *J. Econ. Tax. Bot*. 25 (1): 27 – 32.

Baruah, A. & Nath, S.C. 2005. A systematic census on the *Cinnamomum* Schaeffer (Lauraceae) members growing in North-East India. *J. Econ. Tax. Bot.* 29 (2): 294 – 327.

Baruah, A. & Nath, S.C. 2006. Ethnobotanical evaluation of *Cinnamomum* Schaeffer species used as spices and condiments in North-East India. *Ethnobotany*. 18(1&2): 7 – 35.

Baruah, A. & Nath, S.C. 2007. *Cinnamomum champokianum* sp. nov. (Lauraceae) from Assam, northeastern India. *Nordic J. Bot*. 25(5&6): 281 - 285.

Baruah, A. & Nath, S.C. 2009. A Note on *Cinnamomum assamicum* Nath & Baruah (Lauraceae). *J. Econ. Tax. Bot*. 33(3): 711.

Baruah, A. & Nath, S.C. 2011. Systematics and Essential oils of *Cinnamomum sulphuratum* Nees from Northeast India. *In* Baruah, A. & Nath, S.C. (eds) *Aromatic and Spice Plants: Utilization and Conservation*. Aavishkar Publishers & Distributors, Jaipur, India. pp. 102 – 110.

Baruah, A.; Nath, S.C. & Hazarika, A.K. 2002. Essential oils of *Cinnamomum sulphuratum* Nees – A new chemotype source of spice value from Northeast India. *Indian Perfumer*. 46(2): 89 – 92.

Baruah, A.; Nath, S.C. & Boissya, C.L. 1999a. Taxonomic discrimination amongst certain chemotypes of *Cinnamomum sulphuratum* Nees with emphasis to foliar micromorphology. *J. Swamy Botanical Club*. 16: 3 – 7.

Baruah, A.; Nath, S.C. & Leclercq, P.A. 1999b. Leaf and stem bark oils of *Cinnamomum sulphuratum* Nees from Northeast India. *J. Essent. Oil Res*. 11: 194 – 196.

Baruah, A.; Nath, S.C. & Hazarika, A.K. 2001. Methyl cinnamate, the major component of the leaf and stem bark oils of *Cinnamomum sulphuratum* Nees. *Indian Perfumer*. 45(1): 39 – 41.

Choudhury, D.; Biswas, R., Mandal, P. & Das, A.P. 2013. Diversity of *Cinnamomum* Schaeffer (Lauraceae) in Terai and Duars region of West Bengal, India. *Pleione.* 7(2): 441 – 448.

Deb, D.B. 1981. *The Flora of Tripura State*, Vol. I. Today and Tomorrow's Printers and Publication, New Delhi.

Haridasan, K. & Rao, R.R. 1987. *Forest Flora of Meghalaya*, Vol. II, Bishen Singh Mahendra Pal Singh Publication, Dehradun.

Kanjilal, U.N.; Kanjilal, P.C.; De, R.N & Das, A. 1940. *Flora of Assam* Vol. IV, Govt. of Assam Publication, Shillong.

Kostermans, A.J.G.H. 1983. The South Indian species of *Cinnamomum* Schaeffer (Lauraceae). *Bull. Bot. Surv*. India 25 (1 - 4): 90 – 133.

Kurz, S. 1877. *Forest Flora of British Burma.* Vol. II. Published by order of the Government of India, Calcutta, Office of the Superintendent of Government Printing.

Nath, S.C. & Barua, I.C. 1994. A rare *Cinnamomum* (*C. sulphuratum* Nees) discovered in Assam. *J. Econ. Tax. Bot*. 18 (1): 211 – 212.

Nath, S.C.; Hazarika, A.K.; Baruah, R.N.; Singh, R.S. & Ghosh, A.C. 1994. Major component of the leaf oil of *Cinnamomum sulphuratum* Nees from Northeast India. *J. Essent. Oil Res*. 6: 77 – 78.

Rameshkumar, K.B. & George, V. 2006. *Cinnamomum sulphuratum* Nees - A benzyl benzoate-rich new chemotype from southern Western Ghats, India. *J. Essent. Oil Res*. 18 (5): 521 – 522.

Rao, R.R. 1994. *Biodiversity in India (Floristic Aspects).* Bishen Shingh Mahendra Pal Singh Publication, Dehradun.