

First Record of *Ficus geniculata* Kurz in Manipur, North East India

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Abstract: *Ficus geniculata* and *Ficus geniculata* var. *insignis* are reported first time for Manipur, India. Concise taxonomic descriptions along with photograph were provided for easy identification. The young twigs along with leaves of both varieties are eaten as favourite wild edible foods and also traditional treatment for various gynaecological problems of women folks residing in Manipur. These twigs in bundle are available in the local markets.

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1. Introduction

Ficus L. is a large genus of angiosperm with about 850 species consisting of trees, shrubs, climbers and creepers distributing throughout tropics and subtropical regions (Berg & Corner 2005, Ronsted *et al.* 2008, Frodin 2004). In India, the genus is represented by about 89 species and 26 infraspecific taxa with high species richness in the North East India (Chaudhary, *et al.* 2012). During a recent ethnobotanical documentation survey conducted in Manipur, authors collected two ethnobotanical important *Ficus* taxa, whose taxonomical differentiation caught attention of the authors. Locally known as *Khongnang Taru*, it is known by two types based on the red and greenish white shoots respectively. The young twigs along with leaves of both varieties are eaten as favourite wild edible foods and also traditional treatment for various gynaecological problems of women folks residing in Manipur. These twigs in bundle are available in the local markets.

2. Material and methods

The study state Manipur stretches between 23° 80' - 25° 68' N and 93° 03' E - 94° 78' E and has a geographical area of 22,327 Km². The state is bounded on the east by Myanmar, west by Assam, north by Nagaland and south by Chin hills of Myanmar and Mizoram. The altitude varies from 390 to 3500 m above sea level. Several field surveys were conducted throughout the state during 2012-2015. Plants were collected from Laikotching, Senapati District and Chanung in Imphal East District.

Taxonomical studies and comparison was done by adopting with relevant floras and literatures (Hooker 1890; Singh *et al.*, 2000; Kanjilal *et al.*, 1934; King 1887; Almeida 1996). Concise description, photographs and distributional details for each taxon are provided. The voucher specimens are deposited at Department of Life Sciences, Manipur University, Canchipur, India.

Results: After critical studies it was confirmed that the two specimens are *Ficus geniculata* Kurz and *Ficus geniculata* var. *insignis* (Kurz) C.C.Berg. which were new additions for the flora of Manipur and northeast India respectively.

Ficus geniculata Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 42 (2): 105. 1873 & For. Fl. Brit. Burma 2: 447. 1877; King, Ann. Roy. Bot. Gard. (Calcutta) 1: 64, t. 80, 84x. 2. 1887 & in Hook. f., Fl. Brit. India 5: 516. 1888; Brandis, Indian Trees 602. 1906; Kanjilal *et al.*, Fl. Assam 4: 248. 1940; Corner, Gard. Bull. Singapore 21 (1): 8. 1965. *Ficus geniculata* var. *abnormalis* Kurz, Forest Fl. Burma 2: 447.1877.

Terrestrial, deciduous tree up to 30 m tall. Bark at trunk base is reddish to grey; stipules broadly ovate, ca. 4 mm, adaxially pubescent, caducous. Leafy twigs almost angular, young leaves and shoots slightly reddish. Bracts lanceolate, reddish. Leaves clustered apically, 2-3 rarely 4 on branchlets; petiole 8.7 cm, glabrous; leaf blade elliptic to broadly ovate, 4-9 × 3.5-8 cm, adaxially glabrous and shiny, abaxially white to light yellow, glabrous, apex mucronate, base

broadly rounded to cuneate, margin entire. Figs sparsely distributed at axillary on short older woody branchlets, clusters of 2 - 4, red when mature, depressed globose, 5- 7 mm in diam., with

conspicuous interfloral bristles; apex convex, ostiole 1-2 mm diam., flat to prominent, the upper ostiolar bracts glabrous; internal hairs present, white, chaffy.



Photo plate showing, A=*Ficus geniculata* Kurz (1A = Figs, 2A = Bark , 3A= Bract) and B= *Ficus. geniculata* var. *insignis* (Kurz) C.C.Berg ,(1 B= Figs, 2B= Bark, 3 B= Bract)]

Basal bracts 3, ca 4 mm long, shortly puberulent. Fig sessile; male, gall and female flowers within the same fig. Basal bracts 3, ca 4 mm long, shortly puberulent. Male flowers few at apical pore; calyx lobes connate; stamen 1, filament short, anther ovoid. Gall and female flowers: calyx lobes 2 or 3, free, lanceolate; style in female flowers longer than in gall flower. Staminate flowers ostiolar. Tepals reddish. Ovary red-brown.

Flowering & Fruiting: April-June.
Habitat: In deciduous forest margin.

Distribution: Bangladesh, China, India (Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Jharkhand, Meghalaya, Orissa, Sikkim, Tamil Nadu and West Bengal), Myanmar, Nepal and Thailand.

Exsiccatae: Manipur, Imphal East district, Chanung, 740 m, 24°49'43.2" N, 93°58'18.0" E, dated 13.05.2015, *Devi* 000089.

Ficus geniculata* var. *insignis (Kurz) C.C. Berg, - *Ficus insignis* Kurz, J. Asiat. Soc. Bengal 42(2) 105. 1873; Kurz, For. Fl. Burma 2: 447. 1877. Type: Burma, Pegu, Kurz 3151.

Deciduous, terrestrial, tree up to 20 m tall. Bark at trunk base whitish grey; branchlets slightly curved; stipules broadly ovate, ca. 6 mm, adaxially pubescent, caducous. Leafy twigs almost angular; young leaves and shoots are pale green. Bracts lanceolate, white with reddish at the tip. Leaves clustered apically on branchlets, generally 4 at the apex; petiole up to 9.5 cm, glabrous; leaf blade broadly ovate to elliptic, 5 - 22 × 3.5 - 12.5 cm, adaxially glabrous and shiny, abaxially white to light yellow, apex mucronate, base broadly cuneate to rounded, margin entire. Figs densely and uniformly distributed throughout older branchlets, depressed globose, up to 8 mm in diam., densely white interfloral bristles, at maturity turning from white to pink to dark red, tuberculate, apex convex, ostiole 2-3 mm diam., flat, the internal hairs present, white, chaffy; upper ostiolar bracts glabrous to puberulous. Basal bracts 3, ca 5 mm long, minutely puberulous outside. Male, gall and female flowers within same fig, sessile or shortly pedunculate. Male flowers few, near apical pore; calyx lobes connate; stamen 1; filament short; anther broadly ovoid. Gall flower more than female flowers: calyx lobes 2, lanceolate; style in gall flower shorter than in female flowers. Basal bracts 3, ca 5 mm long, minutely puberulous outside. Staminate flowers ostiolar. Tepals reddish. Ovary red-brown.

Flowering & Fruiting: May-August.
Habitat: In deciduous forest margin.

Distribution: India (Maharashtra), Myanmar, Vietnam, Cambodia, Thailand

Exsiccatae: Manipur, Senapati district, Laikoiching, 778 m, 24°47'04.2" N, 93°56'43.2" E, dated 12.04.2015, *Devi* 000035

Discussion:

Earlier distributional reports of *Ficus geniculata* covered India (Andaman & Nicobar Islands, Tamil Nadu, Orissa, West Bengal, Jharkhand, Bihar and other Northeast India states (Arunachal Pradesh, Assam, Meghalaya, Sikkim) and globally Bangladesh, China, Myanmar, Nepal and Thailand (Kanjilal et al 1934; Berg 2007) but in the present study the species was recorded in Manipur for the first time in the states of India bordering with Myanmar.

The distribution of *Ficus geniculata* var. *insignis* was recorded from south East Asian regions like Myanmar, Vietnam, Cambodia, Thailand and Peninsular India state Maharashtra (Almeida 1996; Berg 2007). Interestingly, the species was observed for the first time in the state Manipur, North east India. This observation extends the distribution range of the species from south East Asia to south Asian region. Moreover, the occurrence of these two varieties of *Ficus* revalidated the rich biodiversity of *Ficus* species previously reported. Extension of *Ficus geniculata* var *insignis* distribution can be considered an indication of similarity in flora of south East Asian countries with north East Indian flora where there is inflow and outflow of species. It can be an indication of potential richness of *Ficus* and similar genera in the region.

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