



Research Paper

THE DIVERSITY AND DISTRIBUTION OF NEW SPECIES OF FAMILY FABACEAE IN CHANDRAPUR DISTRICT OF BALLARPUR TALUKA

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Abstract

Chandrapur District is blessed with nature having abundant forest cover and great biodiversity of the plants, which accounted for 35.75% of the total geographical area of the district. Moghe (1993) studied "Dicot flora of Chandrapur forest division of vidarbha region of Maharashtra State" and some others added some species to existing data. Within the survey of Chandrapur district for the preparation of digital herbarium of some dicotyledonous plants, some new species of family Fabaceae have been reported viz. *Crotalaria verrucosa* L., *Medicago polymorpha* L., *Desmodium scorpiurus* (SW.) Desv., *Alysicarpus longifolius* (Rottl. ex Spr.) Wight & Arn., in Ballarpur Taluka of Chandrapur district of Maharashtra State. Electric herbarium is a novel technique in the preparation digital database of plants by using software DELTA (Descriptive language for Taxonomy) a flexible and powerful method for recording taxonomic description. Present work deals with the study and preparation of digital database of family Fabaceae species occurs in Chandrapur district of Ballarpur taluka.

Key words: Fabaceae, Digital database, New plant records, Chandrapur district.

INTRODUCTION

Chandrapur District is very rich in biodiversity and known as 'district of forest' having dense forest of 1342 sq.km, moderately dense forest of 1592 sq.km and open forest of 1140 sq.km. It lies between 18° 41' and 20° 50' north latitudes and 78° 48' and 80° 55' east longitudes and has an area of 11417 sq km. The district is bounded on the North by Bhandara, Nagpur and Wardha district, on the East by Gadchiroli district, on the South by Adilabad and Karimnagar district of Telangana and West by Yeotmal district, respectively. The average rainfall is 1276.50 mm. The air is generally dry over the district except during the south-west monsoon season when the humidity exceeds 70 per cent. The summer months are the driest when the relative humidity in the afternoons is between 20 and 25 per cent

(<http://cultural.maharashtra.gov.in/english/gazetteer/CHANDRAPUR>). The climate follows a typical seasonal weather pattern. The peak temperatures are usually reached in May-June and can be as high as 50°C. The onset of monsoon is usually from July and extends up to September, with monsoon peak during July to August. After monsoon the average temperature varies between 27°C and approx 6-7°C through December and January. The city of Chandrapur is the district headquarters. Chandrapur district is divided into 15 talukas: Chandrapur, Ballarpur, Badravati, Warora, Brahamapuri, Chimur, Nagbhid, Pombhurna, Sindewahi, Mul, Saoli, Gondpipri, Rajura, Korpana and Jivati. The flora of Chandrapur district was studied by Tiwari (1990) and Patil (1991). Later on some attempts have been made to upgrade the flora of Chandrapur by Moghe (1993). But the flora of Chandrapur district has not been studied especially after recent industrialization and urbanization. Hence, it was thought worthwhile to undertake current study to update and revise existing biodiversity of Chandrapur district by using new technology i.e. electronic devices, computer software and digital images in the preparation of Electronic herbarium and digital database of the flora (Srinivasu, 2005), with the help of software package DELTA (Descriptive Language for Taxonomy). The digital database of plants includes indigenously developed set of more than two hundred morphological (Phenological) characters with a number of variable states were incorporated in the software DELTA package (Dallwitz *et al.*, 2000). The digital images are then attached to the respective plant descriptions in the database. During the preparation of digital database of existing flora four plant species found to be new to this region.

MATERIAL AND METHODS:

During exploration for the study, field visits to different areas of Chandrapur district throughout the year and collected the digital photos of dicots in their natural habitat and plant specimens for the confirmation of the identification and data preparation in the laboratory. The plant specimen properly identified by the Flora of Maharashtra, Vol. I - IV (Almeida, 1996-2003), the forest flora of Chandrapur and Gadchiroli district (Moghe, 1993), Flora of Maharashtra State vol. I (Singh and Kartikeyan, 2000), Flora of Maharashtra State vol. II (Singh *et al.*, 2001), Flora of Taroba National Park (Malhotra and Moorthy, 1992), Flora of Nagpur District (Ugemuge, 1986), Flora of Marathwada (Naik, 1998), flora of Presidency of Bombay (Cooke, 1958) and confirmed with authenticated herbarium specimen of Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur. The digital photographs processed in computer and sorted out into their respective families.

RESULT AND DISCUSSION:

During exploration for the preparation of digital database of plants four new plant species belonging to family Fabaceae have been reported which has some uses in the form of medicinally and economically important.

The four plant species belonging to family Fabaceae have been considered as new record for this research topic area are described below.

Family: Fabaceae

***Alysicarpus longifolius* (Rottle.ex Spreng.) Wight & Arn.**

References & Synonyms: Prodr. 233, 1834; Baker in *Hook. f., Fl. Brit. Ind.* 2: 159, 1876; Cooke, *Fl. Pres. Bombay* 1: 347, 1902; Ugemuge, *Fl. Nagpur* 129, 1986; Almeida, *Fl. Maharashtra* 2: 12, 1998; Singh & Karthikeyan, *Fl. Maharashtra State* (Dicot) 1: 602, 2000.

Annual, ascending herb, stem 90-150 cm high, terete, glabrous. Leaves 1- foliate, petiolate, stipules lanceolate, scarious, leaflets oblong-obtuse, base sub cordate, 2-3 cm long, 1-1.5 cm broad, Flowers in dense spiket racemes, bracts ovate acuminate, sepals 5, bilabiate, lobes ovate-acuminate, pubescent, as long as or longer than the 2- lower joints of pod; petals 5, purplish pink, exerted, stamens 9+1, carpel 1; fruit pod, segmented, irregularly veined.

Common name: Jungli gaulya.

Place of collection: Rajura road.

Status of plant: Weed.

Flowering and Fruiting: September-February.

***Crotalaria verrucosa* L.**

References & Synonyms: *Sp. Pl.* 715, 1753; Baker. in Hook. f., *Fl. Brit. Ind.* 2: 77, 1876; Cooke, *Fl. Pres Bombay* 1: 299, 1902 ; Almeida, *Fl. Maharashtra* 2: 46, 1998; Singh & Karthikeyan, *Fl. Maharashtra State (Dicot)* 1: 649, 2000.

Erect branched shrub, 60-90 cm. high, acutely angled, silky pubescent, Leaves; ovate, rhomboid, obtuse, 3.5 cm long, 2.8 cm. broad, silky pubescent below, stipules 2 terminal or axillary, racemes, bracteate, bractiolate, teeth triangular acuminate; petals 5, white, stamens sub-orbicular, wings oblong, keel boat shape, 1.8 cm. long, 1.4 cm. broad; stamens 9+1, carpel 1; ovary silky pubescent; ovules 6-12, style long curved; fruit pod, densely villous when young, 2-4 cm. long, 1 cm. broad, oblong cylindrical, seeds, 6-12, reniform.

Common name: Tirat

Place of Collection: Masram lay out, Teachers colony, opposite G.N. College Ballarpur

Status: Weed, Common

Flowering and Fruiting: October-November:

***Desmodium scorpiurus* (Sw.) Desv.**

References & Synonyms: in *Journ. Bot. Lond* 1: 122, 1813; *Hedysarum scorpiurus* Swartz.. *Prodr* 107, 1788 ; Almeida, *Fl. Maharashtra* 2: 66, 1998; Singh & Karthikeyan, *Fl. Maharashtra State (Dicot)* 1: 649, 2000.

Annual herb. stem wire type, diffuse and twinning, 100 cm. high, leaves stipulate petiolate, palmately trifoliate, obovate, 1 pair+1, leaf-let 1.5-2.2 cm. long, 0.9-1 cm. apex obtuse, base obtuse, inflorescence racemose, flower papilionaceous white, 0.5 cm. long; sepals 5, persistent; corolla white, petals 5, vexillate; androecium 10, unequal (5+5) anther yellow, ovary superior, carpel 1, ovules 5-6 , fruit 6-8 lomentum, green, glutinous, with hooked hairs, 4 cm. seeds oblong,

Flowering and Fruiting: February-May.

Place of Collection: Montfort girls Hostel

Status: Weed.

Common Name: Chikta

***Medicago polymorpha* L.**

References & Synonyms: ., *Sp. Pl.* 781, 1753; Baker in Hook. f., *Fl. Brit. Ind.* 2:90, 1876; Cooke, *Fl. Pres. Bombay* 1;326. 1901; Almeida, *Fl. Maharashtra* 2: 108, 1998; Singh & Karthikeyan, *Fl. Maharashtra State (Dicot)* 1: 720, 2000

Annual, diffuse herb. Stem; quadrangular, 10-25 cm high. Leaves; 3 foliate, alternate, petiolate, stipules lanciniated, leaflets; obovate, middle larger than lateral, apex notched, and denticulate, base cuneate. Flower; axillary, 1-3 flowered, cluster, 0.5 cm long, 0.3 cm

broad, sepals 5, linear, petals 5, standard suborbicular, yellow, wings oblanceolate, stamens 10, carpel, ovary curved, style short. Fruit; pod small, 0.5 cm long, 0.9 cm broad, spiral with long hooked projection, seeds 3-4 reniform.

Common name:

Place of Collection: Borgaon, Dhanapur, Pellur

Status: Cultivated

Flowering and Fruiting: March-April

CONCLUSION:

These investigations shows that Chandrapur district of Maharashtra State is very much diversified in plants and also helpful not only to know the rare, medicinal, endemic and other useful plants of the selected area but also to conserve the biodiversity of Chandrapur District in future in the digital format.

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