

bryo minute; endosperm white, powdery. (Figs. 1-12).

Frequent, on gentle west facing hill slope, beside stream, near large boulders, amidst *Terminalia*, *Bauhinia*, *Ficus* and *Sterculia* and with other wild *Musa* species. Flowering and Fruiting, June-August. The mature infructescence is heavily infested with black ants. While in the ovary the numerous ovules are in a neat row and embedded in the fleshy pulp, during development into fruit the large seeds become irregular, masking the original p'acentation. The local Khasi (Bhoi) name is 'Kyiet myntan'. Enquiries showed that the vernacular names (*Ram Kal*, *Adumatong*) given by Simmonds

referred only to small seed-bearing true bananas and not to *Ensete*.

Occasionally cultivated for its impressive inflorescence, and the soft rind within the pseudostem which is used as a vegetable. Seedlings introduced into the experimental Gardens at Shil'ong and at Barapani are doing well.

MEGHALAYA: Khasi Hills, Burnihat, Citrus Research Station, cultd. *Hajra* 45685. Nongpoh, A. S. Rao 45686. Umd'har, *Hajra* 45683 cultd.; A. S. Rao 45684. This and 45686 are both naturally occurring plants.

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CONTRIBUTION TO THE FLORA OF MADHYA PRADESH —NEW RECORDS OF SPECIES

The paper deals with 5 species which are reported for the first time from Madhya Pradesh. Notes on their flowering and fruiting time, ecology and distribution are also given.

Being central in position, the flora of Madhya Pradesh presents some very interesting features. The forests of Madhya Pradesh are not extensively explored. Under the project "Flora of Bilaspur, M.P." the author, between 1970 and 1973, took three seasonal collection-cum-exploration tours to Bilaspur district—one during September-October, 1970; second in February, 1972 and the third in the month of July-August, 1973. During these tours about 2000 field numbers of plants were collected, which after critical identification, yielded about 900 species belonging to 525 genera under 120 families. These specimens are preserved in the herbarium of Central Circle, Botanical Survey of India, Allahabad (BSA). Besides these

collections, a large number of plant species collected earlier from Bilaspur and other districts of Madhya Pradesh are also preserved there. A review of the literature shows that a few species, hitherto unreported from Madhya Pradesh, are found to occur in this area. Hence their presence in Madhya Pradesh, an entirely distinct phytogeographical region, is of interest, as it extends considerably their known range of distribution in India. In two earlier communications the author (Murti 1975) reported four new records of species from Madhya Pradesh viz., *Chirita bifolia* D. Don, *Styldium kunthii* Wall. ex Nees, *Althea ludwigii* L. and *Lepidagathis purpuricaulis* Wall. ex Nees. In the present paper a few more new records of species are reported.

Following is the account of new records of species from Madhya Pradesh. The species are arranged alphabetically. The important diagnostic features are appended with the species enumerated. The distributional notes are from *Hook. f. Fl. Brit. Ind.*

1. **Cleistocalyx operculatus** (Roxb.) Merrill and Perry in Jour. Arn. Arb. 18: 337, 1937; *Syzygium operculatum* Gamb. in Fl. Pres. Mad. 1: 481, 1919; *Eugenia operculata* Roxb. Fl. Ind. 2: 486, 1832; Hk. f. Fl. Brit. Ind. 2: 498, 1878.

A medium sized tree, leaves broadly elliptic or obovate and rounded, lateral nerves few, distant and prominent. Flowering in April.

Ecology: Growing near streams inside mixed forests.

Distribution: Sub-Himalayan forests from the Jumna to Assam, ascending to 600 m Oudh and Gorakhpur forests, Cachar, Chittagong, Pegu, Ceylon, upto 900 m.

Sheet examined: Bilaspur: Pali, *Panigrahi* 8702 and 8705.

2. **Desmodium benthamii** Ohasi in Ginkgoana 1: 248, 1973; *D. brachystachyum* Grah. ex Benth. in Miq. Pl. Jungh. 223, 1852; Hk. f. Fl. Brit. Ind. 2: 171, 1876, non Walps (1842).

A woody herb with 1-foliolate leaves, leaflet elliptic oblong; flower purple. Flowering and fruiting in November.

Ecology: In sandy alluvium at the edge of the forests, also on the hill slopes.

Distribution: Upper Gangetic Plain.

Sheets examined: Bilaspur: Pasarkhet, *Panigrahi* 12962; Ambikapur: Woodroof Nagar-Mahapokhar forest, *Sengupta* 15698.

3. **Eusteralis stellata** (Lour.) Panigrahi in Phytologia 32 (6): 1976; *Dysophylla verticillata* Benth. in Wall. Pl. As. Rar. 1: 30, 1830; Hk. f. Fl. Brit. Ind. 4: 639, 1885; *Mentha stellata* Lour. Pl. Cochinch. 2: 361, 1790, non Buch.-Ham. ex Roxb. 1832. Semierect, hollow stemmed, glabrous herb. Spike cylindrical. Flowering and fruiting in November to February.

Ecology: Growing in swamps, muddy cultivated fields and dry mud of roadside ditch.

Distribution: Bengal, Silhet, Tenasserim and Ceylon.

Sheet examined: Bilaspur: Keonchi to Pendra, *Panigrahi* 15380; Raigarh: Kunkuri, *Arora* 7317.

4. **Ludwigia prostrata** Roxb. Fl. Ind. 1: 420, 1820; Hk. f. Fl. Brit. Ind. 2: 588, 1879.

Prostrate or decumbent perennial herb. Flowers small, yellow. Capsule slender with seeds in one row in each cell. Flowering and fruiting July to February.

Ecology: Growing in moist sandy alluvium of nala and streams.

Distribution: North-West India; Assam. Silhet. Rangoon. Ceylon.

Sheet examined: Bilaspur: Siang, *Panigrahi* 16837, Achanakmar, *Panigrahi* 13212A; Pasarkhet, *Panigrahi* 12946; Lamni, *Murti* 19235; Raigarh: Dharamgaygarh, *Arora* 7125.

5. **Plantago pumila** Willd. Enum. Hort. Berol. 1: 162, 1809; Hk. f. Fl. Brit. Ind. 4: 707, 1885.

A slender herb with filiform leaves. Spikes ovoid or sub-globose, puberulous. Flowering in February.

Ecology: Weed in moist cultivated fields on sandy alluvium.

Distribution: North-West India.

Sheet examined: Bilaspur: Kabirchabutra, *Panigrahi* 15259.

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A NOTE ON THE SOMATIC CHROMOSOMES OF *URGINEA POLYANTHA* BLATTER

Hooker⁵ under the genus *Urginea* Steinh (Liliaceae) reported *Urginea indica* Kunth, *U. wightiana* Hook. f., *U. coromandeliana* Hook. f., *U. congesta* Wt. and *U. polyphylla* Hook. f. from India. Subsequently *U. polyantha* B'atter² and *U. govindappae* Boraiah et Fathima³ were added. Further systematic studies on the genus are in progress at Botanical Survey of India and at Maharashtra Association for the Cultivation of Science, Pune. Cytological work has been done on the genus previously by Battaglia¹, Boraiah et al.³, Datta⁴, Naik^{7,8} and Raghavan⁹. The present study on the somatic chromosomes of *U. polyantha* is the first record of the genome in this species and provides karyotypic data for comparison with the other species of *Urginea* previously worked out.

MATERIAL AND METHODS

U. polyantha Blatt. was collected from its type locality, Panchgani plateau, in Satara district (Maharashtra) which seems to be the only locality known so far. The voucher specimen (Ansari, 105054) is deposited in the Circle herbarium (BSI) at Pune and a few bulbs of the species are also grown at the experimental garden of the Western Circle, Pune. Except for *U. congesta* and *U. polyphylla*, the rest of the species noted above bloom before their leaves appear. Among such species, *U. polyantha* Blatt.

can be easily distinguished from others by its much denser raceme, shorter pedicels and shorter and broader perianth segments which are very stable characters of taxonomic importance and hence it is a good species.

The root tips from the potted plants of *U. polyantha* were pretreated with 0.002 molar 8-hydroxyquinoline solution for 3-3½ hours at 10-15°C, fixed in acetic-alcohol (1:3) for 24 hours and hydrolysed in the mixture of N HCl and 2% aceto-orcin (1:9) for 10 minutes at 60°C and then squashed in 1% aceto-orcin.

For the description of karyotypes the method followed by Levan et al.⁶ has been adopted. For determining the type of chromosome the centromeric index $r = \frac{1}{s}$ (Table 1) was taken into account.

OBSERVATIONS

U. polyantha has twenty somatic metaphase chromosomes and the same along with its idiogram are shown in Figs. 1 & 2 respectively. It has the same number of chromosomes (2n=20) as reported for *U. govindappae*³, *U. indica*⁹ and *U. coromandeliana*⁴. A natural intraploidy has also been reported for *U. coromandeliana* (2n=40)⁷. In *U. polyantha* out of 10 pairs, there are two pairs of long chromosomes, two pairs of medium size and six pairs of short chromosomes. The details of karyotypes are given in Table 1.