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Short Communication

PERPETUAL COTTONS OF ANDHRA PRADESH

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Uncultivated cottons from Kathiawar, Konkan and Bengal and their specimens are preserved in the British Museum and Edenburg herbarium. It is believed that a red flowered cotton, a century ago, was abundant and more important than it is today. Hutchinson *et. al.* (1947) and Hutchinson (1954) have described the perennial forms of cotton, closer to the ancestral type. A brief review of the genetic wealth in *Gossypium* with special reference to wild species has been published by Narayanan, (1985). Samba Murthy *et. al.* (1994) reported three groups of perennial cottons of Andhra Pradesh. The wild and cultivated cotton plants of the world has been well compiled and documented by Watt (1907). The present note gives a brief account of preliminary morphological aspects of perennial cottons.

Exploration and Range of Distribution

Exploration for the collection of cotton germplasm in parts of Andhra Pradesh was organised jointly by the Central Institute for Cotton Research, Nagpur and National Bureau of Plant Genetic Resources, New Delhi in December 1993. Nearly 84 accessions involving 32 *G. hirsutum*, 30 *G. arboreum*, 4 *G. herbaceum* and 18 accessions of uncultivated perennial cottons were collected. The areas covered included Guntur, Mahboobnagar, Kurnool, Prakasam and Nalgonda districts in Andhra Pradesh (table 1). The perennial cotton plants generally exist in house backyards, temple compounds and in vacant places in traditional cotton growing districts of Andhra Pradesh. The perennial cottons are known by various vernacular names eg. Pagadapathi, Pamidipathi and Jadapathi and exhibit morphological variations.

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Table 1. Vernacular names and source of collection of perennial cottons from Andhra Pradesh

Sl. No.	Accession No.	Vernacular/Local name	Species	Source (Village and District)
1.	SP 3907*	JADAPATHI	*G. arboreum*	KONIDEDU, KURNOOL
2.	SP 3908*	PAGADAPATHI	*G. arboreum*	GONAVARAM, KURNOOL
3.	SP3909	PYDIPATHI	*G arboreum*	NANDAVARAM, KURNOOL
4.	SP 3910	PAGADAPATHI	*G. aboreum*	MITTAPALLI, KURNOOL
5.	SP 3912*	PAGADAPATHI	*G. arboreum*	KOILKUNTLA, KURNOOL
6.	SP 3914*	PAGIDIPATHI	*G. arboreum*	OWK, KURNOOL
7.	SP 3918	PYDIPATHI	*G. arboreum*	KALUGOTLA, KURNOOL
8.	SP 3926*	PAGADAPTHI	*G. arboreum*	VEERAREDDIPALLE, KURNOOL
9.	SP 3927	PAMIDIPATHI	*G. arboreum*	VEERAREDDIPALLE, KURNOOL
10.	SP 3928	PAGADAPATHI	*G. arboreum*	VEERAREDDIPALLE, KURNOOL
11.	SP 3951	PAGADAPATHI	*G. arboreum*	HOLAGONDI, KURNOOL
12.	Sp 3977*	PAGADAPATHI	*G. arboreum*	DURGI, GUNTUR
13.	SP 3981	PAGADAPATHI	*G. arboreum*	DACHEPALLI, GUNTUR
14.	SP 3982*	PAGADAPATHI	*G. arboreum*	VEERAPURAM, GUNTUR
15.	SP 3984*		*G. arboreum*	PRATHIPADU, GUNTUR
16.	SP 3985		*G. arboreum*	PRATHIPADU, GUNTUR
17.	SP 3986		*G. arboreum*	PRATHIPADU, GUNTUR
18.	SP 3987		*G. barbadense*	CHOUTUPPAL, NALGONDA

* Established in the wild Species Garden at CICR, Nagpur.

Morphological Description

Eighteen accessions of uncultivated perennial land races of *G. arboreum* were collected from the areas of Andhra Pradesh and sown in July, 1994 at CICR research farm for the establishment in the existing wild species garden. Preliminary morphological evaluation was done in relation to phyllotaxy and floral taxonomy. Morphologically, the established perpectual cottons could be classified in to groups A and B.

Group A consisted of SP 3914, SP 3984 and SP 3982. The plants are perennial and tall in habit and some time attaining height upto 10 feet with long trailing thin branches. Leaves are thick and leathery, consistent and deeply serrated, 5 lobed occasionally with an extra tooth on one or both sides of the central lobe. Lobes are curvilinear, midrib distinct, the central one very frequently purple coloured. Flowers are large, corolla three times of length of

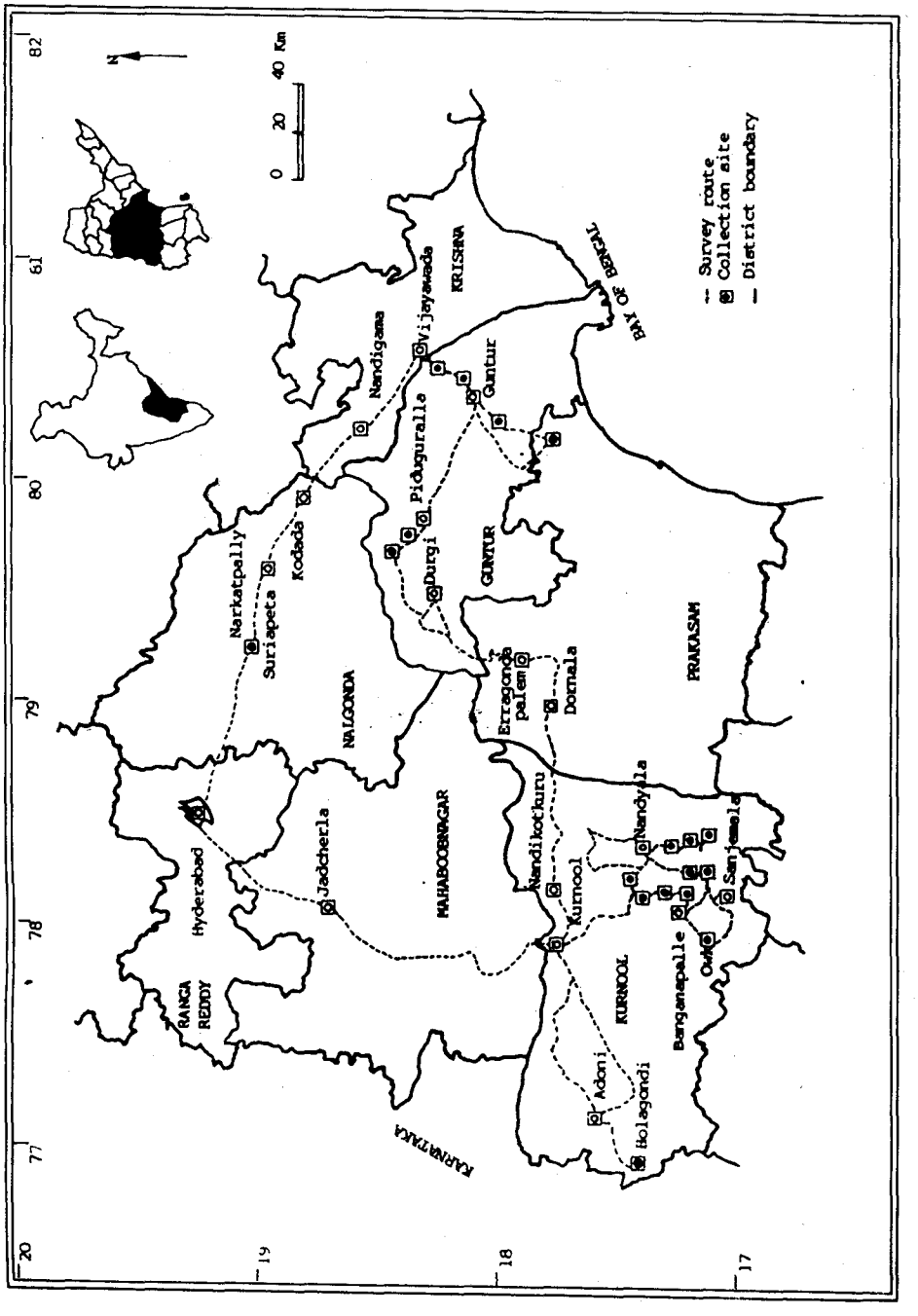

Fig. 1. Survey route followed for the collection of cotton germplasm in Andhra Pradesh

the bracteole, convolute and convolvulate, deep purple red with well marked hairy folds. Bracteoles are small, usually one third the length of the corolla, veins few, circular attachment often cospicuous but not glandular, calyx large, purple, truncate. Capsules are more or less rounded, 3 celled, acuminate with 6-8 seeds in each cell. Seeds are small, irregular and coated with green fuzz.

Group B consisted of SP 3908, SP 3912, SP 3977 SP 3907 and SP 3926. Perennials in this group can be differentiated from the other cultivated *G. arboreum* races. Plants are upto 2.4 m height, densely branched, dark purple in colour, leaves leathery, long sinus, 5 lobed and with an extra rudimentary lobe towards left or right of the central lobe. Inflorescence is much elongated, shoots with many lateral axillary buds which mostly becomes abortive. Peduncle is usually shorter than subtended petiole. Petals are deep purple red with darker patches at the base and well marked hairy folds. Bracteoles are small conspicuous but not glandular. Calyx is purple truncate or slightly 5 angled, gland dots very distinct. Capsules rounded, 3 celled with tapering ends, pitted and predominantly gland dotted. Generally, each locule contains 5-7 seeds. Seeds are small, irregular in form, coarsely coated with greenish velvet fuzz. Plants are highly tolerant/resistant to pests like bollworms and sucking pests in natural and uncultivated conditions. Perennials of group A and B are very close to each other and have remarkable resemblances in morphotaxonomy with *G. arboreum* race *sudanense*. However, in order to identify the races of the above perennials of *G. arboreum*, further critical cytogenetical and numerical taxonomical investigations are needed.

Economic Utility

Perennial cotton plants of *arboreum* species generally exist in house backyards and temple compounds. Since ancient time the lint is used for preparing wicks of lamps for worshipping in temples and sacred threads. Extracts of nascent leaf is used in curing skin disease of infants and sometimes used as are for ear aches in rural areas of Andhra Pradesh. It has been often affirmed that this was the cotton specially used by the Egyptian priests in construction of their robes. However, there seems to be some hesitation in accepting the frequently asserted antiquity of the Egyptian knowledge in *arboreum* perennial cottons (Watt, 1907).

These perennial cottons possess variability in useful traits like fibre and pest resistant characters which can be utilised by appropriate breeding procedure as a donar to improve these traits (Samba Murthy *et. al.* 1994). Similarly the perennials of *arboreum* species can be exploited for bollworm resistance. Further studies are needed on receptivity of stigma, biochemical analysis, photoperiodic and drought parameters.

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