

Table 1 Comparison of data on spike length (cm), weight (g) and dry grain weight (g) of right- and left-handed plants in Triticale and its parents.

Cultivar	Left-handed			Right-handed		
	Spike length	Spike weight	Grain (500) weight	Spike length	Spike weight	Grain (500) weight
<i>Triticale</i>						
DTS-42-3	7.0 ±0.33	0.78 ±0.04	15.0 ±0.48	5.5 ±0.42	0.47 ±0.04	12.5 ±0.48
DTS-280-7	6.0 ±0.44	0.61 ±0.032	15.0 ±0.43	5.0 ±0.40	0.47 ±0.04	13.0 ±0.35
<i>Triticum</i>						
NI-5439	6.4 ±0.38	0.50 ±0.02	12.5 ±0.32	6.0 ±0.54	0.47 ±0.04	11.0 ±0.40
SONALIKA	6.6 ±0.40	0.57 ±0.03	15.0 ±0.5	5.7 ±0.52	0.52 ±0.05	13.5 ±0.32
KALYANASONA	7.2 ±0.43	0.64 ±0.05	12.5 ±0.34	5.8 ±0.42	0.50 ±0.05	12.5 ±0.52
<i>Secale cereale</i> (Neutrals only)	5.1 ±0.40	0.43 ±0.03	12.5 ±0.83	—	—	—

N.B: Mean of 25 measurements.

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CYTOLOGY OF *FIMBRISTYLIS NARAYANII* FISCHER

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DURING the course of our cytotaxonomic investigations of South Indian Cyperaceae in general, and of Karnataka in particular, we have come across *Fimbristylis narayanii* Fischer which has not so far been cytologically studied. It is endemic to west coast of peninsular India and belongs to the section *Abildgaardia* of disputed taxonomic position¹⁻⁶. The present paper deals with the karyotype and meiosis in this species.

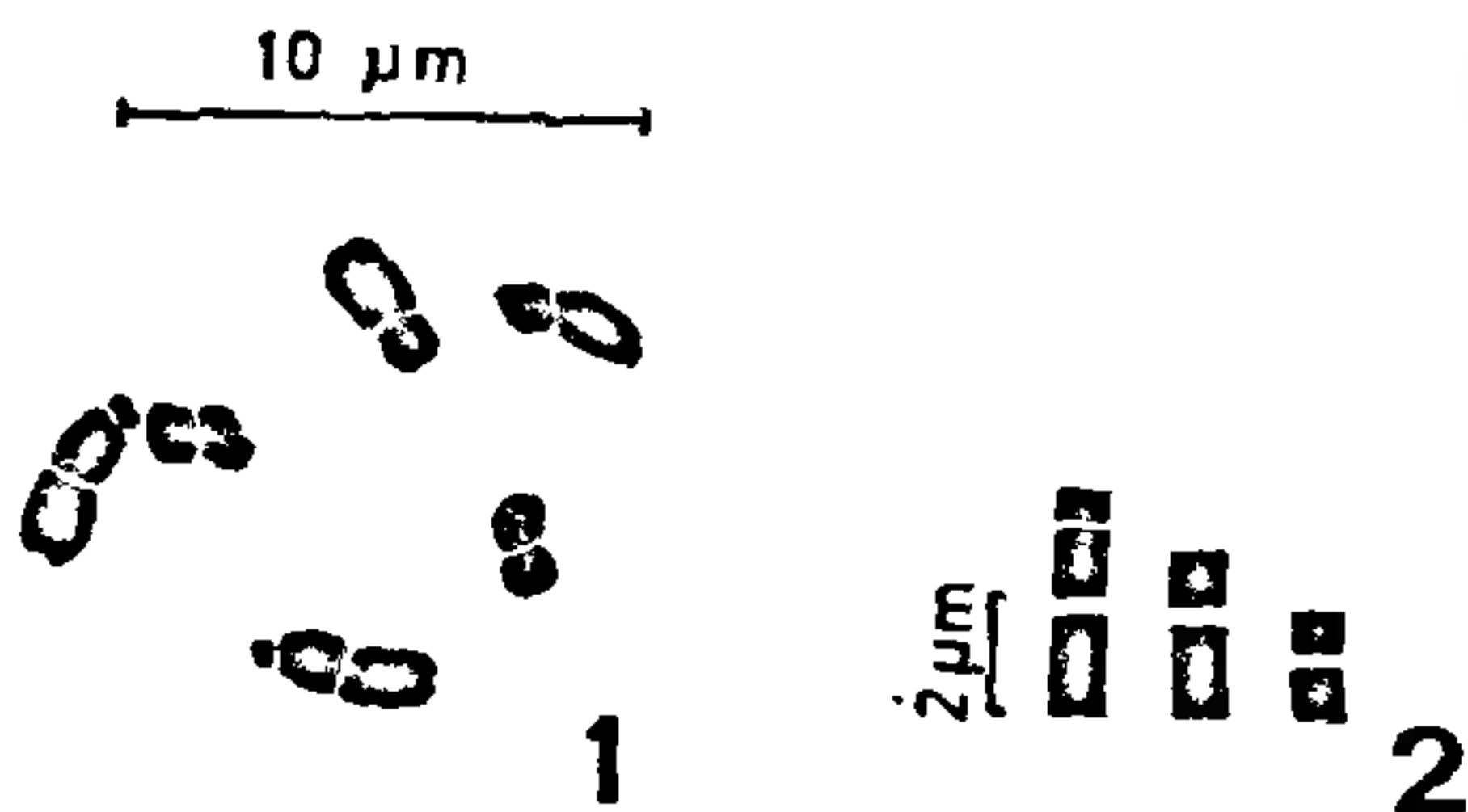
The material for the present study was collected

from Belthangady (South Kanara district). Somatic chromosomes were studied in root tips which were stained in Feulgen. Several metaphase plates were examined and the plate with well-spread chromosomes was selected for karyotype analysis. For meiosis and pollen mitosis, pollen mother cells and microspore tetrads were studied in iron acetocarmine smears.

The somatic chromosome number is six. All chromosomes of the complement have median centromeres. The longest pair is satellited having satellites on the short arm (figures 1-3). The chromosomes are relatively long with their length ranging from 1.4-3.2 μm . The total length of the diploid complement is 14 μm . The karyotype data of somatic chromosomes are given in table 1.

Meiosis is regular (figures 4, 5). At diakinesis, three bivalents are observed in each pollen mother cell, one of which being invariably associated with the nucleolus (figure 4). Each bivalent has one or two chiasmata and the average number of chiasmata per pollen mother cell is 5.5.

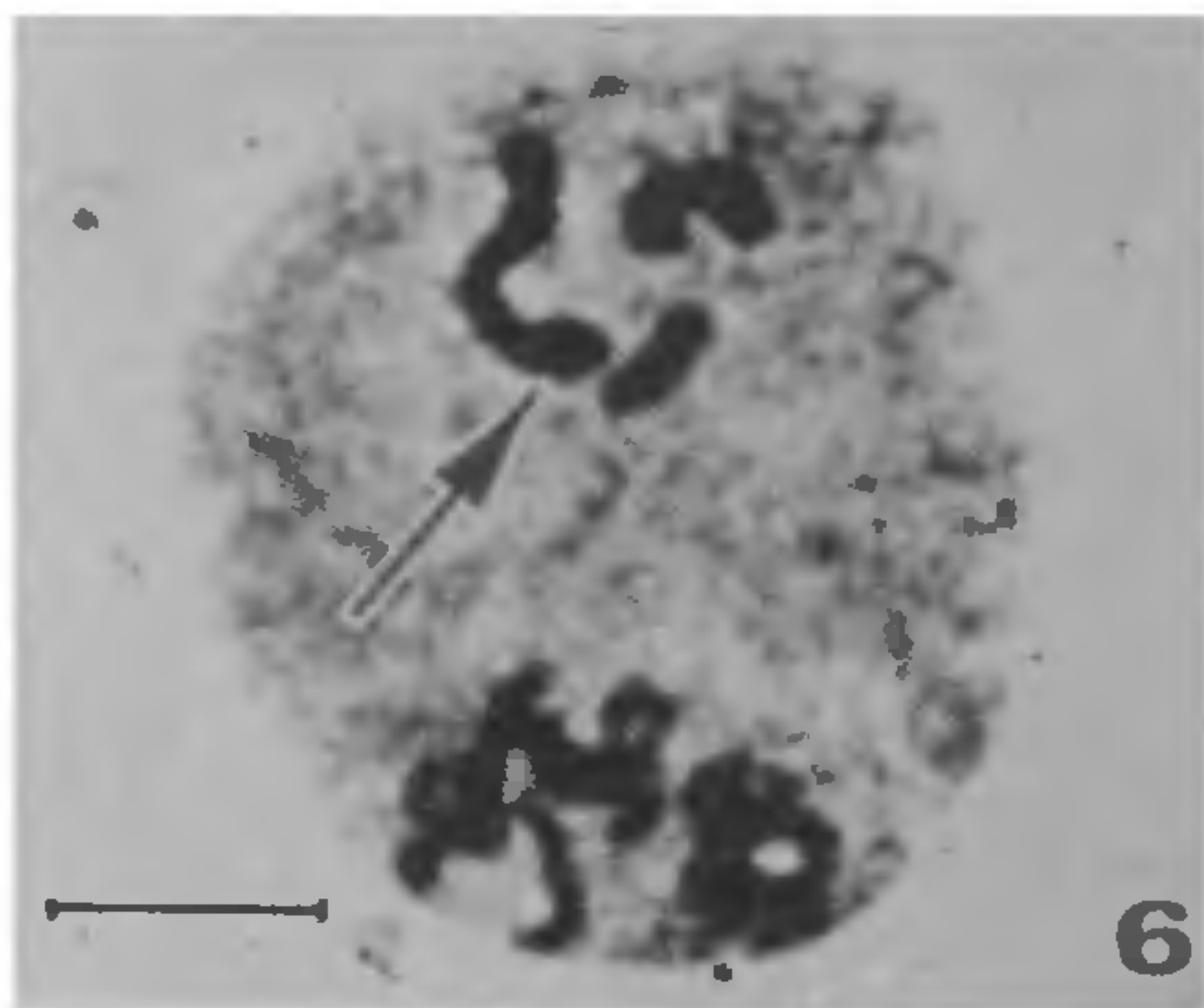
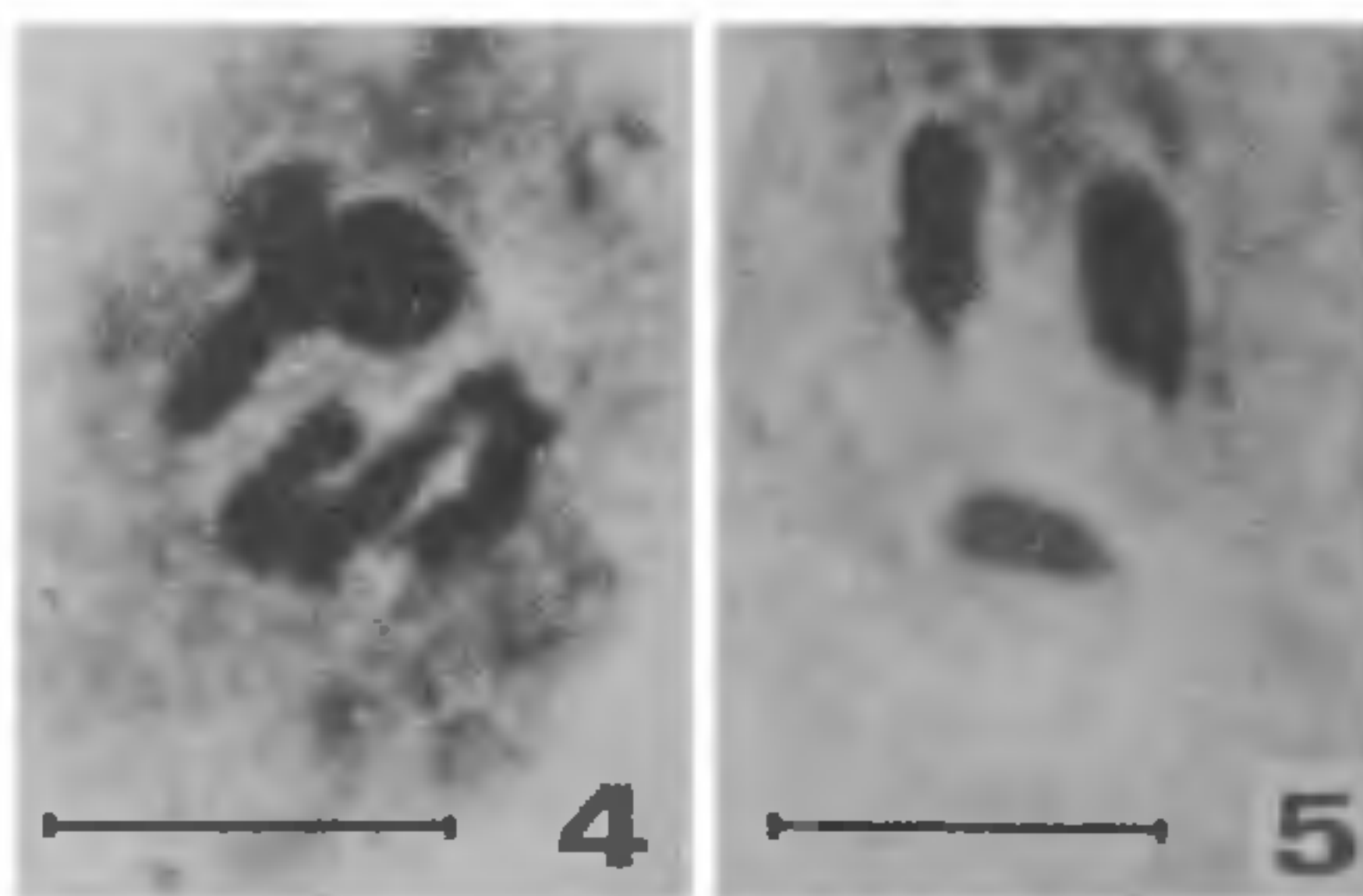
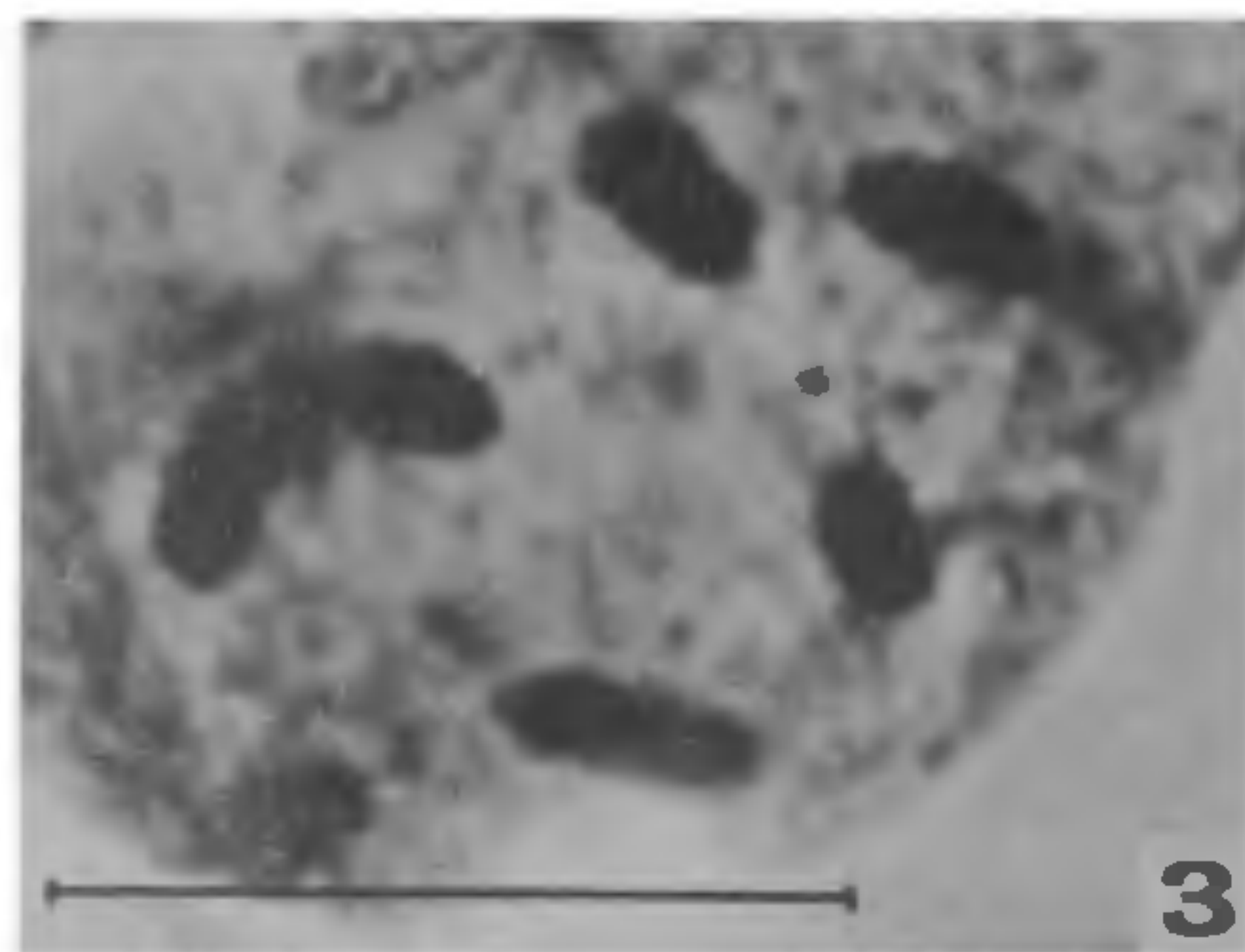
During pollen mitosis, the longest chromosome of the haploid complement is seen attached to the nucleolus indicating its involvement in the formation of the latter (figure 6).



Figures 1 & 2. 1. Somatic chromosomes. 2. Idiogram of the haploid complement.

Table 1 Measurements of somatic chromosomes of *Fimbristylis narayanii*

Chrom. pairs	Long arm (μm)	Short arm (μm)	Total length (μm)	Arm ratio (l. arm/s. arm)	Relative length (%)
1	1.7	1.1 +0.4	3.2	1.13	45.71
2	1.5	0.9	2.4	1.66	34.29
3	0.8	0.6	1.4	1.33	20.00



Figures 3-6. (All photomicrographs) 3. Somatic chromosomes. 4. Pollen mother cell at diakinesis. 5. Metaphase I. 6. Microscope tetrad showing first pollen mitosis. Note: The association of longest chromosome of the complement with the nucleolus (arrow). (Scale bar = 10 μm).

The chromosome number of $2n = 6$ reported here for *F. narayanii* is the lowest in the family Cyperaceae. The same chromosome number has previously been recorded in *F. woodrowii*⁷ and *F. umbellaris*⁸. These species have the basic number $x = 3$ and do not fit into any of the existing basic numbers ($x = 5, 6, 8$ and 11) known for the genus *Fimbristylis*. With the addition of this new number, the basic number $x = 6$ suggested earlier by Darlington and Wylie⁹ for this genus appears superfluous and can, therefore, be deleted.

Divergent views have been expressed on the structure of chromosomes in *Fimbristylis*. Barring *F. woodrowii* which has been reported as having chromosomes devoid of localized centromeres, all other species of the genus studied so far including the present one have chromosomes with "well-marked" centromeres^{8,10-13}. However, an isolated instance of *F. woodrowii* needs reinvestigation to make sure of its exceptional status in the whole of the genus in this respect.

The taxonomic position of the section *Abildgaardia* of *Fimbristylis* to which *F. narayanii* belongs has been a topic of much discussion. Whereas some cyperologists⁴⁻⁶ recognized *Abildgaardia* as a separate genus, others treated it as congeneric to *Fimbristylis*¹⁻³. However, there is a greater degree of similarity between the species of the section *Abildgaardia* and the rest of *Fimbristylis* in respect of karyotype, chromosome size and basic number¹⁰⁻¹⁴. Therefore, cytologically, the removal of the section *Abildgaardia* from the genus *Fimbristylis* is not justified.

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KABATIELLA BUBÁK—A NEW REPORT FROM INDIA

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A SURVEY of leaf spot fungi was conducted around Jaipur during the year 1981-82. An interesting fungus was observed on leaves of *Cassia fistula* L., which on isolation and identification was found to be an isolate of *Kabatiella nigricans* (Atk. and Edg.) Karakulin, not previously reported from India.

Aerial mycelium absent, mycelium adhering to the surface of the host is light to dark brown, beaded, tortuous, measuring 6.41-13.2 (9.8) μm diam., beaded cells may produce conidia directly or through the formation of lateral free conidiophores, they are comparatively larger, straight or bent, septate, simple or branched of variable length. Conidiomata eustromatic, formed subepidermally by agglomeration of hyphae, discoid, pustular, separate or aggregate, dark brown to black, spherical, oval to elliptical, measuring 135-427.5 μm in length \times 78.8-202.5 μm in width \times 56.3-104.6 μm in height (Av. 266 \times 128.7 \times 79 μm). In vertical section (figure 1B), upper stromatic portion 3-5 layered, with thick walled, vertically oriented, texture prismatic and substromatic portion 2-4 layered, with thin walled, texture angularis.

Conidiophores broad, straight, spherical, oval to clavate, light to dark brown, apically much thickened. Spores produced on sterigmata/spicule like projections, polyphialidic, conidiophore measuring 10.8-24.4 \times 9.0-21.8 (14.74 \times 11.59) μm . Conidia hyaline, light brown at maturity, ellipsoidal, clavate or allantoid, attenuated at both the ends, bi- or eguttulate, generally aseptate, rarely septate, conidia measuring 6.8-13.6 \times 3.6-6.4 (10.6 \times 5.1) μm .

On leaves of *Cassia fistula* L. (Caesalpinaceae),