PLATE 17

*Scleria pergracilis.*

(2n = 10)

Aa - Somatic metaphase chromosomes.

Ab - Idiogram of the above.

B - Photomicrograph of somatic chromosomes.

C - Photomicrograph of a pollen mother cell at diakinesis.

D - Photomicrograph of a microspore tetrad showing first pollen mitosis; note the divisions in abortive microspores.
Meiosis is normal. At diakinesis, each pollen mother cell shows five bivalents of which one is associated with the nucleolus (Pl. 17C). In each microspore tetrad, the first mitotic division begins simultaneously both in the functional and the abortive microspores. However, the completion of division occurs only in the functional microspore as the abortive microspores show incomplete mitosis wherein the divisions are stopped after the attainment of the metaphase stage (Pl. 17D).

*S. foliosa* (Pl. 18)

It is a robust, tufted, annual measuring 45-90 cm, common during rainy season on wet soil in edges of swamps or cultivated lands. Inflorescence is paniculate consisting of 1-3 well spread lateral and one terminal panicle. Flowers are unisexual. Each male flower has three stamens. Female flower consists of a tricarpellary ovary with a short style and a trifid stigma. Fruit is ovoid, obtusely trigonous, white or greyish, coarsely and irregularly pitted. Hypogynium consists of a narrow ring or disc and three stiff, rounded, whitish to pale yellowish brown lobes.

The diploid complement consists of twenty chromosomes (Pl. 19A, B). The chromosomes are relatively smaller ranging from 0.9 μm to 1.4 μm in length. The total length of the somatic complement is 21.7 μm. The karyotype is highly symmetrical having all chromosomes with median centromeres.
PLATE 18

Scleria foliosa.

Photograph of the entire plan.
PLATE 19

Scleria foliosa.

(2n = 20)

Aa - Chromosomes at somatic metaphase.

Ab - Idiogram of the above.

B - Photomicrograph of a metaphase plate.

C - Photomicrograph of a pollen mother cell showing diakinesis.

D - Photomicrograph of a pollen mother cell at metaphase I.
The longest pair of the complement bears satellites on the short arms. The measurements of chromosomes are given in Table 4.

**Table 4:** Measurements of somatic chromosomes in *Scleria foliosa*

<table>
<thead>
<tr>
<th>Chrom. Pair</th>
<th>Long arm in µm</th>
<th>Short arm in µm</th>
<th>Total length in µm</th>
<th>Relative length</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.60</td>
<td>0.50 + 0.30</td>
<td>1.40</td>
<td>12.90</td>
<td>0.83+1</td>
</tr>
<tr>
<td>2</td>
<td>0.70</td>
<td>0.50</td>
<td>1.20</td>
<td>11.05</td>
<td>0.71</td>
</tr>
<tr>
<td>3</td>
<td>0.65</td>
<td>0.50</td>
<td>1.15</td>
<td>10.60</td>
<td>0.76</td>
</tr>
<tr>
<td>4</td>
<td>0.60</td>
<td>0.50</td>
<td>1.10</td>
<td>10.20</td>
<td>0.83</td>
</tr>
<tr>
<td>5</td>
<td>0.60</td>
<td>0.50</td>
<td>1.10</td>
<td>10.20</td>
<td>0.83</td>
</tr>
<tr>
<td>6</td>
<td>0.60</td>
<td>0.45</td>
<td>1.05</td>
<td>9.60</td>
<td>0.75</td>
</tr>
<tr>
<td>7</td>
<td>0.60</td>
<td>0.40</td>
<td>1.00</td>
<td>9.20</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>0.60</td>
<td>0.40</td>
<td>1.00</td>
<td>9.20</td>
<td>0.66</td>
</tr>
<tr>
<td>9</td>
<td>0.50</td>
<td>0.45</td>
<td>0.95</td>
<td>8.75</td>
<td>0.90</td>
</tr>
<tr>
<td>10</td>
<td>0.50</td>
<td>0.40</td>
<td>0.90</td>
<td>8.30</td>
<td>0.80</td>
</tr>
</tbody>
</table>

Meiosis is normal. There are ten bivalents in each pollen mother cell at diakinesis and metaphase I (Pl. 19C,D). One of the bivalents is seen attached to the nucleolus at diakinesis. Pollen mitosis is also normal.

*S. lithosperma* (Pl. 20)

It is a robust perennial with a woody, shortly creeping rhizome and slender, erect and triquetrous stems. Inflorescence
PLATE 20

Scleria lithosperma.

Photograph of the entire plant
PLATE 21

Scleria lithosperma
(n = 50)

A - Photomicrograph of a pollen mother cell at diakinesis
B - Photomicrograph of a pollen mother cell at metaphase.
is paniculate, with a terminal panicle and 2 or 3 distant axillary ones each with a few spikelets. Spikelets are bisexual, solitary or in clusters of 2 or 3 each with one female flower and a few to several male flowers. Male flower has usually one but occasionally two stamens. Female flower consists of a tricarpellary ovary with a short style and a trifid stigma. Fruit is ovoid or oblong ovoid, obtusely trigonous, smooth and glossy ferrugineous. Hypogynium is reduced to a narrow, brown and minutely glandular band.

Only meiosis has been studied in this species. During first meiotic division, each pollen mother cell shows fifty bivalents (Pl. 27A, B). Subsequent events of meiosis and pollen mitosis are also normal.

**CAREX**

Six species of this genus have been included in the present investigation. Five of them have been subjected to karyotype analysis; however, meiosis has been studied in all the six species. The taxa studied reveal three different chromosome numbers. For descriptive purpose the species are arranged in the order of increase in the number of chromosomes. As in the other species of *Carex* the chromosomes are relatively small ranging in length from 0.77 μm to 2.9 μm and are devoid of localized centromeres.

*C. filicina* (Pl. 22)

It is an erect, loosely tufted, perennial with a woody, knotty rhizome which is clothed with purple brown