MEIOTIC STUDIES IN SOME MEMBERS OF THE TRIBE PANICEAE

CYTOTAXONOMIC studies of grasses have been undertaken here to find out the chromosome numbers in the grasses found in this area. Darlington and Wylie's *Chromosome Atlas*[1] reveals that for many of these grasses the chromosome number has not been worked out so far. The present account deals with the meiotic behaviour of eight species belonging to seven genera of the tribe Paniceæ. Certain new facts regarding their chromosome numbers have been brought to light.

The material was collected from field and fixed either in alcohol acetic acid or alcohol propionic acid (3 : 1), the latter being preferred in many cases. The pollen mother cells were squashed in acetocarmine or propionocarmine respectively in the two cases. Iron acetate was sometimes added to the fixative to get better results. Counts, camera lucida drawings and photographs were made immediately after squashing.

In most of the cases the division was synchronous, but in some cases it was not so. Two or three stages could be available in the same anther, *e.g.*, metaphase I and anaphase I commonly occur together. This might be due to anaphase I taking over the metaphase I quite rapidly. In some cases the reports of chromosome counts are new in this investigation, while in other cases they either confirm the previous report or give a different chromosome count.

Alloteropsis cimicina is reported here to be tetraploid ($n=18$) with the base number $x=9$. This is the first chromosome count in this species. In *Echinochloa colonum*, the present study confirms one of the previous counts, $2n=36$,[2] $2n=48$,[3] $2n=54$[4] and $2n=72$

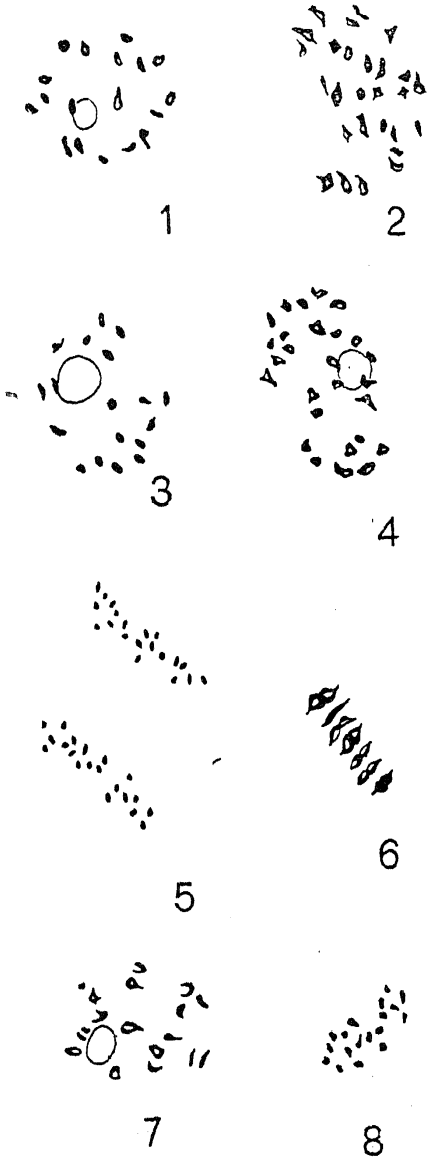
TABLE I

Meiotic behaviour of some grasses of the tribe Paniceæ

Sl. No.	Plants	Collection No.	Gametic No. n	Base No. x	Ploidy
†1	*Alloteropsis cimicum* (Linn.) Stapf. ..	20	18	9	Tetraploid
2	*Echinochloa colonum* (Linn.) Link. ..	3	27	9	Hexaploid
*3	*Panicum psilopodium* Trin. ..	7	18	9	Tetraploid
4	*Paspalidium flavidum* (Retz.) A. Comus. ..	16	27	9	Hexaploid
5	*Paspalum scorbiculatum* Bojer. ..	22	20	10	Tetraploid
6	*Pennisetum typhoides* (Burm) Stapf. ..	30	7	7	Diploid
7	*Setaria glauca* (Linn.) P. Beauv. ..	5	18	9	Tetraploid
†8	*Setaria tomentosa* (Roxb.) Kunth. ..	2	18	9	do.

† Count reported for the first time; * Count differs from the previous report.

(E. K. Janaki Ammal, unpublished). This grass is hexaploid with $n = 27$ and $x = 9$.



FIGS. 1–8. Fig 1. *Alloteropsis cimicina*, Diakinesis 18 bivalents. Fig. 2. *Echinochloa colonum*, Diakinesis 27 bivalents. Fig. 3. *Panicum psilopodium*, Diakinesis 18 bivalents. Fig. 4. *Paspalidium flavidum*, Diakinesis 27 bivalents. Fig. 5. *Paspalum scorbiculatum*, Anaphase I 20 chromosomes on each pole. Fig. 6. *Pennisetum typhoides*, Metaphase I 7 bivalents. Fig. 7. *Setaria glauca*, Diakinesis 18 bivalents. Fig. 8. *Setaria tomentosa*, Metaphase I 18 bivalents.

In *Panicum psilopodium* Ramanathan[5] gave $2n = 54$, which differs from the present count of $n = 18$. This is to be taken as tetraploid with $x = 9$. *Paspalum scorbiculatum* is tetraploid having $n = 20$ and $x = 10$. This confirms the count of $2n = 40$ given by Avdulov.[6] In *Paspalidium flavidum* $n = 27$ conforms the report given by Raman *et al.*,[11] and is therefore hexaploid with $x = 9$. *Setaria tomentosa* is tetraploid with $n = 18$ which is the first chromosome count in this species with $x = 9$.

In *Pennisetum typhoides* different somatic counts of $2n = 14$–17[7] and $2n = 14$[8] are reported. The present count also gives $n = 7$ showing that the grass is diploid with base number of $x = 7$.

In *Setaria glauca*, $2n = 36$[9] and $2n = 72$[10] are known. The present material gives $n = 18$, and is therefore tetraploid with base number $x = 9$.

The results of the investigation are given in Table I.

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