

Miscellaneous notes

VARIOUS AUTHORS

CHROMOSOME STUDIES ON AFRICAN PLANTS. 1.

The use of cytogenetics in plant taxonomy is important for the determination of phylogenetic relationships. The aim of this series is to publish miscellaneous information regarding chromosome studies on African plants. Chromosome numbers determined by meiotic studies are given as the haploid number (n), in contrast to numbers determined by mitotic studies which are given as the somatic chromosome number ($2n$). The herbarium voucher specimen number and locality of the collected material (according to the Degree Reference System — Edwards & Leistner 1971; Leistner & Morris 1976), is included.

POACEAE

The grass genera mentioned in this paper, appear in the same order as that described by Gibbs Russell *et al.* (1984). The subdivision of the plants into tribes is according to Dyer (1976). All voucher specimens are housed in the National Herbarium (PRE).

Andropogoneae

Arthraxon lanceolatus (Roxb.) Hochst. var. *lanceolatus*: $n = 18$.

TRANSVAAL. — 2430 (Pilgrim's Rest): Blyderivierspoort Nature Reserve (-DB), *Spies 1423*.

Andropogon eucomus Nees: $n = 20$.

TRANSVAAL. — 2530 (Lydenburg): 13 km from Boshhoek to Buffelsvlei (-AC), *Spies 1525*.

Andropogon lacunosus J. G. Anders.: $n = 9$.

TRANSVAAL. — 2530 (Lydenburg): 18 km from Dullstroom to Goede Hoop (-AC), *Spies 1468, 1475*.

Trachypogon spicatus (L. f.) Kuntze: $n = 10$.

TRANSVAAL. — 2530 (Lydenburg): 18 km from Dullstroom to Goede Hoop (-AC), *Spies 1437*.

Heteropogon contortus (L.) Roem. & Schult.: $n = 20$, $n = 23$.

TRANSVAAL. — 2529 (Witbank): 67 km from Lydenburg to Roossenekal (-BB), *Spies 1626* ($n = 20$). 2530 (Lydenburg): Goede Hoop (-AC), *Spies 1578* ($n = 23$).

Panicaceae

Alloteropsis semialata (R. Br.) Hitchc. subsp. *eckloniana* (Nees) Gibbs Russell: $n = 9$.

TRANSVAAL. — 2430 (Pilgrim's Rest): Blyderivierspoort Nature Reserve (-DB), *Spies 1420*.

Brachiaria nigropedata (Fical. & Hiern) Stapf: $n = 9$.

TRANSVAAL. — 2430 (Pilgrim's Rest): 23 km from Boshhoek to Diepgezet (-CD), *Spies 1546*.

Setaria nigrirostris (Nees) Dur. & Schinz: $n = 18$.

TRANSVAAL. — 2430 (Pilgrim's Rest): Blyderivierspoort Nature Reserve (-DB), *Spies 1422*.

Setaria pallide-fusca (Schumach.) Stapf & C.E. Hubb.: $n = 18$.

TRANSVAAL. — 2530 (Lydenburg): 31 km from Lydenburg to Roossenekal (-AB), *Spies 1609*.

Rhynchelytrum nerviglume (Franch.) Chiov.: $n = 18$.

TRANSVAAL. — 2530 (Lydenburg): 15 km from Dullstroom to Goede Hoop (-AC), *Spies 1454*.

Tricholaena monachne (Trin.) Stapf & C.E. Hubb. var. *monachne*: $n = 18$.

TRANSVAAL. — 2530 (Lydenburg): 15 km from Boshhoek to Diepgezet (-AC), *Spies 1541*.

Antheophora pubescens Nees: $n = 18$.

CAPE PROVINCE. — 2624 (Vryburg): Armoedsvlakte Experimental Farm (-DC), *Spies 742, 743, 744 & 745*.

Arundinelleae

Arundinella nepalensis Trin.: $n = 20$.

TRANSVAAL. — 2530 (Lydenburg): Goede Hoop (-AC), *Spies 1583*.

Aristideae

Aristida canescens Henr. subsp. *canescens*: $n = 22$, $n = 55/2$.

TRANSVAAL. — 2530 (Lydenburg): 6 km from Goede Hoop to Roossenekal (-AA), *Spies 1497* ($n = 22$); 24 km from Dullstroom to Goede Hoop (-AC), *Spies 1484* ($n = 22$); Frischgewaagd (-AC), *Spies 1569* ($n = 55/2$).

Chlorideae

Microchloa caffra Nees: $n = \sim 50$.

TRANSVAAL. — 2530 (Lydenburg): 36 km from Lydenburg to Roossenekal (-AA), *Spies 1603*.

Harpochloa falx (L. f.) Kuntze: $n = 20$.

TRANSVAAL. — 2530 (Lydenburg): 18 km from Dullstroom to Goede Hoop (-AC), *Spies 1440*.

Ctenium concinnum Nees: $n = \sim 50$.

TRANSVAAL. — 2530 (Lydenburg): 6 km from Goede Hoop to Lydenburg (-AA), *Spies 1495*.

Eragrostideae

Eragrostis barbinodis Hack.: $n = 10$.

TRANSVAAL. — 2430 (Pilgrim's Rest): 23 km from Boshhoek to Diepgezet (-CD), *Spies 1549*.

Eragrostis capensis (Thunb.) Trin.: $n = 20$.

TRANSVAAL. — 2530 (Lydenburg): 15 km from Dullstroom to Goede Hoop (-AC), *Spies 1451*.

Eragrostis curvula (Schrud.) Nees: $n = 20$.

TRANSVAAL. — 2530 (Lydenburg): 18 km from Dullstroom to Goede Hoop (-AC), *Spies 1442*.

CAPE PROVINCE. — 3227 (Stutterheim): 5 km from Kei Road to Macleantown (-DA), *Spies 1684*.

Eragrostis gummiflua Nees: **n = 30**.

TRANSVAAL. — 2530 (Lydenburg): 31 km from Lydenburg to Roosenekal (-AB), *Spies 1613*.

Eragrostis micrantha Hack.: **n = 20**.

TRANSVAAL. — 2529 (Witbank): 67 km from Lydenburg to Roosenekal (-BB), *Spies 1627*.

Eragrostis pseudosclerantha Chiov.: **n = 20**.

TRANSVAAL. — 2530 (Lydenburg): 13 km from Lydenburg to Roosenekal (-AB), *Spies 1512*; 13 km from Boshhoek to Buffelshoek (-AC), *Spies 1532*.

Eragrostis sclerantha Nees subsp. *sclerantha*: **n = 20**.

TRANSVAAL. — 2530 (Lydenburg): 36 km from Lydenburg to Roosenekal (-AA), *Spies 1593*.

Eragrostis superba Peyr.: **n = 20**.

TRANSVAAL. — 2530 (Lydenburg): 10 km from Boshhoek to Buffelsvlei (-AC), *Spies 1520*.

Eleusine indica (L.) Gaertn. subsp. *africana* (K.-O'Byrne) S. M. Phillips: **n = 18**.

TRANSVAAL. — 2430 (Pilgrim's Rest): 38 km from Lydenburg to Pilgrim's Rest (-DC), *Spies 1560*.

Stiburus alopecuroides (Hack.) Stapf: **n = 10**.

TRANSVAAL. — 2530 (Lydenburg): Goede Hoop (-AC), *Spies 1580*.

Poeae

Festuca caprina Nees var. *caprina*: **n = 28**.

TRANSVAAL. — 2530 (Lydenburg): 18 km from Dullstroom to Goede Hoop (-AC), *Spies 1441*.

Festuca scabra Vahl: **n = 35, n = 63/2**.

TRANSVAAL. — 2530 (Lydenburg): 15 km from Dullstroom to Goede Hoop (-AC), *Spies 1460* (n = 35); Long Tom Pass (-CA), *Spies 1436* (n = 63/2).

Lolium multiflorum Lam.: **n = 7**.

TRANSVAAL. — 2530 (Lydenburg): 31 km from Lydenburg to Roosenekal (-AB), *Spies 1617*.

Bromus unioloides H.B.K.: **n = 14, n = 28**.

TRANSVAAL. — 2430 (Pilgrim's Rest): Blyderivierspoort Nature Reserve (-DB), *Spies 1425* (n = 14). 2530 (Lydenburg): 31 km from Lydenburg to Roosenekal (-AB), *Spies 1616* (n = 28).

Agrostideae

Agrostis barbuligera Stapf var. *barbuligera*: **n = 21**.

TRANSVAAL. — 2530 (Lydenburg): 18 km from Dullstroom to Goede Hoop (-AC), *Spies 1469*.

Agrostis eriantha Hack. var. *eriantha*: **n = 21**.

TRANSVAAL. — 2530 (Lydenburg): Frischgewaagd (-AC), *Spies 1574*.

Aveneae

Holcus lanatus L.: **n = 14**.

TRANSVAAL. — 2530 (Lydenburg): 5 km from Belfast to Dullstroom (-CA), *Spies 1561*.

DISCUSSION

Normal meiosis was observed in all specimens except *Spies 1578*, an aneuploid specimen of *Heteropogon contortus* ($2n = 46$), in which a number of univalents, anaphase I bridges and chromosome laggards during anaphase I were observed.

As a result of this study, and with reference to published chromosome numbers (Darlington & Wylie 1955; Ornduff 1967-1969; Fedorov 1969; Moore, R. J. 1970-1977; Moore, D. M. 1982; Goldblatt 1981 & 1984), it was inferred that in most of the investigated species the following basic chromosome numbers occur: $x = 7$ in the Poeae, Agrostideae and Aveneae, $x = 9$ in the Paniceae, $x = 10$ in the Andropogoneae, Arundinelleae, Chlorideae and Eragrostideae, and $x = 11$ in the Aristideae. Exceptions were *Arthraxon lanceolatus* ($2n = 36$) and *Andropogon lacunosus* ($2n = 18$) in the Andropogoneae and *Eleusine indica* ($2n = 36$) in the Eragrostideae.

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