

CHROMOSOME NUMBER AND MEIOSIS IN *SCLERORHACHIS RECHINGERI* (COMPOSITAE)

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The chromosomic studies on the species of *Sclerorhachis rechingeri* Iranshahr ($2n=18$) which is endemic to the north-eastern part of Iran has been carried out and the results are presented.

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Sclerorhachis rechingeri (Compositae) عدد کروموزومی و میوز در گونه
از: سید محمود غفاری

Sclerorhachis rechingeri Iranshahr مطالعات کروموزومی درباره گونه
که یک گونه انحصاری شمال شرقی ایران است انجام شده و نتایج آن عنوان میگردد.

Introduction

The author in a expedition to the province Khorasan, Iran in late spring 1978 for collecting plant specimens and cytological material came across to a plant species which later identified as *Sclerorhachis rechingeri* Iranshahr. This species in fact described and published by M. Iranshahr (1979) after my collection. The exact location where plant material for the cytogenetic and chromosome study of this species was collected is: Province Khorasan, 10 km S. of Robat-e Sefid (Sarcheshmeh Telecommunication Station), between Mashhad and Torbat-e Heydarieh.

Three other species of this genus have so far been known, these includes: *S. polysphaera* Rech.f. which is endemic to central Afghanistan, *S. caulescens* (Aitch. & Hems.) Rech.f. which is endemic to western Afghanistan and *S. leptoclada* Rech.f. which is the latest species of the genus described from southern Khorasan. *S. rechingeri* is quite distinguishable from the three other species of the genus by its larger capitula i.e. 12–20 mm in diameter versus 5–10 mm in the other species.

Materials and methods

Immature capitula were collected and

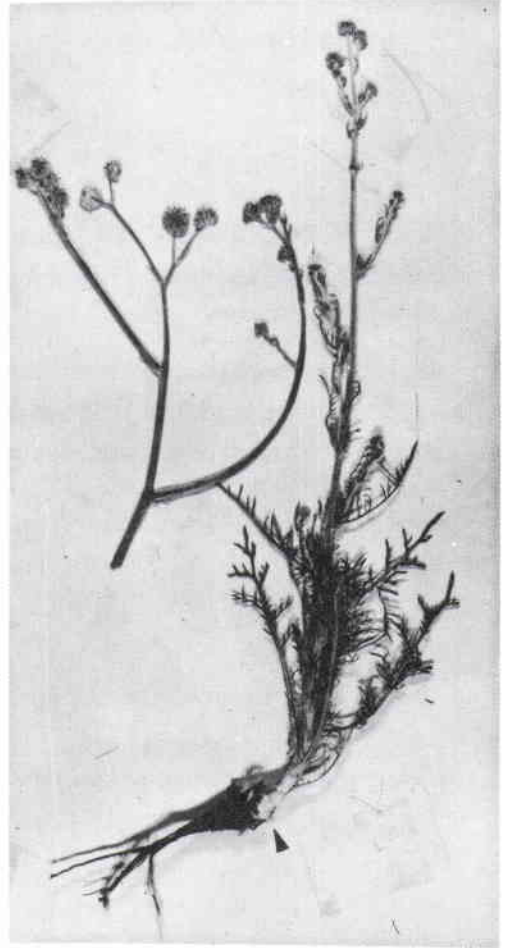


Fig. 1. *Sclerorhachis rechingeri* (woolly collar indicated by arrow), x 0.4

immediately fixed in the field in the pie-nar,s fixing fluid (ethanol 95%: chloroform: propionic acid, 6:3:1 V/V).

Floret buds were squashed and stained with Fe-acetocarmine (Estilai & Ghaffari 1978).

Chromosomes counts were carried out from the meiotic microsporocytes which were prepared as mentioned above. All slides were made permanent by the venetian turpentine (Wilson 1945). Photographs were taken from permanent preparations using a Wild photomicroscope.

Results and discussion

Meiosis in this species was shown to be regular forming nine bivalents at first metaphase. There was usually one chiasma per arm in diakinesis stage and these were terminally located, thus producing rod shaped or ring bivalents. The latter were formed with greater frequency.

During anaphase I, phenomena heterozygous for a paracentric inversion were observed. The inversion produces at anaphase I and pachytene dicentric chromatid bridges, acentric fragments and loops.

References

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Fig. 2. Photomicrographs of meiotic divisions in *Sclerorhachis rechingeri*, n=9. — A, B. Pachytene showing loops. — C, D. Diplotene showing interstitial chiasma. — E. Diakinesis showing nine bivalents (3 rods & 6 rings). — F. Metaphase I. — G. Anaphase I showing a single chromatid bridge (arrow). — H. Remains of bridge indicated by protrusions from each telophase I group of chromosomes (arrows); acentric fragment in near centre area (arrow). — I. Metaphase II. — J. Late anaphase II. — K. Telophase II. — L. Tetrad.

