

CHROMOSOMES OF NINE SPECIES OF THE GENUS *SAUSSUREA* (COMPOSITAE) FROM QINGHAI*

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Abstract

In this paper, chromosome numbers are reported for 9 species of *Saussurea* from Qinghai for the first time. Among them, *Saussurea brunneopilosa* Hand. -Mazz. has a chromosome number of $2n = 30 + 3B$; *Saussurea arenaria* Maxim. has 2 populations which were collected from Huangyuan county and Xinghai county, both populations have a chromosome number of $2n = 30$; *Saussurea apus* Maxim. has a chromosome number of $2n = 30$; *Saussurea tibetica* C. Winkl. has a chromosome number of $2n = 36$; *Saussurea nigrescens* Maxim. has a chromosome number of $2n = 32$; *Saussurea davurica* Adams has a chromosome number of $2n = 28$; *Saussurea ceterach* Hand. -Mazz. has a chromosome number of $2n = 30$; *Saussurea eopygmaea* Hand. -Mazz. has a chromosome number of $2n = 30$; *Saussurea sylvatica* Maxim. has a chromosome number of $2n = 30$.

Key words: *Saussurea*; chromosome number

Introduction

The genus *Saussurea* is one of the largest genera in Compositae. Many species are used as medicinal plants. There are more than 400 species in the world. In China, approximately 264 species are known (Chen Yilin & Shi Zhu, 1999). Only a few cytological studies on genus *Saussurea* have been made in the most standard references (Volkova et al., 1994; Kondoet et al., 1992; Lavrenko et al., 1991; Rudyka, 1988; Rostovtseva, 1984). In the present paper, the chromosome numbers of 9 species collected in Qinghai are reported.

Materials and Methods

The voucher specimen are preserved in the Herbarium of Northwest Plateau Institute of Biology, Chinese

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Somatic chromosomes were observed in meristematic cells of root tips. Growing root tips were cut into small pieces and immersed in 1:1 mixture of 0.002 mol/L 8-hydroxyquinoline and the saturated p-dichlorobenzene solution at about 4°C for 2~3 hours, and then were fixed with Carnoy (glacial acetic acid: ethanol = 1:3) for at least four hours. After washing out the fixer completely with water, the root tips were macerated in 1 mol/L hydrochloric acid at 60°C for 10 minutes and then were stained and squashed in a dilute solution of Carbol's fuchsin.

The chromosome numbers were counted from examined 50~100 cells for each species.

Results

1. *Saussurea brunneopilosa* Hand. -Mazz.

The chromosome number of this species was $2n = 30 + 3B$ at mitotic metaphase, which was reported here for the first time.

The materials used in this study were the growing root tips. They were collected from Xinghai county (35°16'40"N, 99°00'17"E), Alt. 4250m.

2. *Saussurea arenaria* Maxim.

Two populations of this species were studied. Chromosome numbers of both populations were $2n = 30$ at mitotic metaphase, which were collected from Riyue Mountain in Huangyuan county (36°39'07"N, 101°19'38"E), Alt. 3250m and Xinghai county (35°16'40"N, 99°00'17"E), Alt. 4250m. Chromosome number of this species was reported here for the first time.

The materials used in this study were the growing root tips.

3. *Saussurea apus* Maxim.

The chromosome number of this species was $2n = 30$ at mitotic metaphase, which was reported here for the first time.

The materials used in this study were the growing root tips. They were collected from Chenduo county (34°01'39"N, 97°32'42"E), Alt. 4550m.

4. *Saussurea tibetica* C. Winkl.

The chromosome number of this species was $2n = 36$ at mitotic metaphase, which was reported here for the first time.

The materials used in this study were the growing root tips. They were collected from Chenduo county (34°01'39"N, 97°32'42"E), Alt. 4550m.

5. *Saussurea nigrescens* Maxim.

The chromosome number of this species was $2n = 32$ at mitotic metaphase, which was reported here for the first time.

The materials used in this study were the growing root tips. They were collected from Gonghe county (36°22'27"N, 100°53'28"E), Alt. 3480m.

6. *Saussurea davurica* Adams

The chromosome number of this species was $2n = 28$ at mitotic metaphase, which was reported here for the first time.

The materials used in this study were the growing root tips. They were collected from Gonghe county ($36^{\circ}22'27''\text{N}$, $100^{\circ}53'28''\text{E}$), Alt. 3480m.

7. *Saussurea ceterach* Hand. -Mazz.

The chromosome number of this species was $2n = 30$ at mitotic metaphase, which was reported here for the first time.

The materials used in this study were the growing root tips. They were collected from Nangqie county ($35^{\circ}52'41''\text{N}$, $96^{\circ}34'15''\text{E}$), Alt. 3940m.

8. *Saussurea eopygmaea* Hand. -Mazz.

The chromosome number of this species was $2n = 30$ at mitotic metaphase, which was reported here for the first time.

The materials used in this study were the growing root tips. They were collected from Yushu county ($32^{\circ}48'13''\text{N}$, $97^{\circ}15'47''\text{E}$), Alt. 4060m.

9. *Saussurea sylvatica* Maxim.

The chromosome number of this species was $2n = 30$ at mitotic metaphase, which was reported here for the first time.

The materials used in this study were the growing root tips. They were collected from Gonghe county ($36^{\circ}22'27''\text{N}$, $100^{\circ}53'28''\text{E}$), Alt. 3480m.

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青海产九种风毛菊属(菊科)植物的染色体数目

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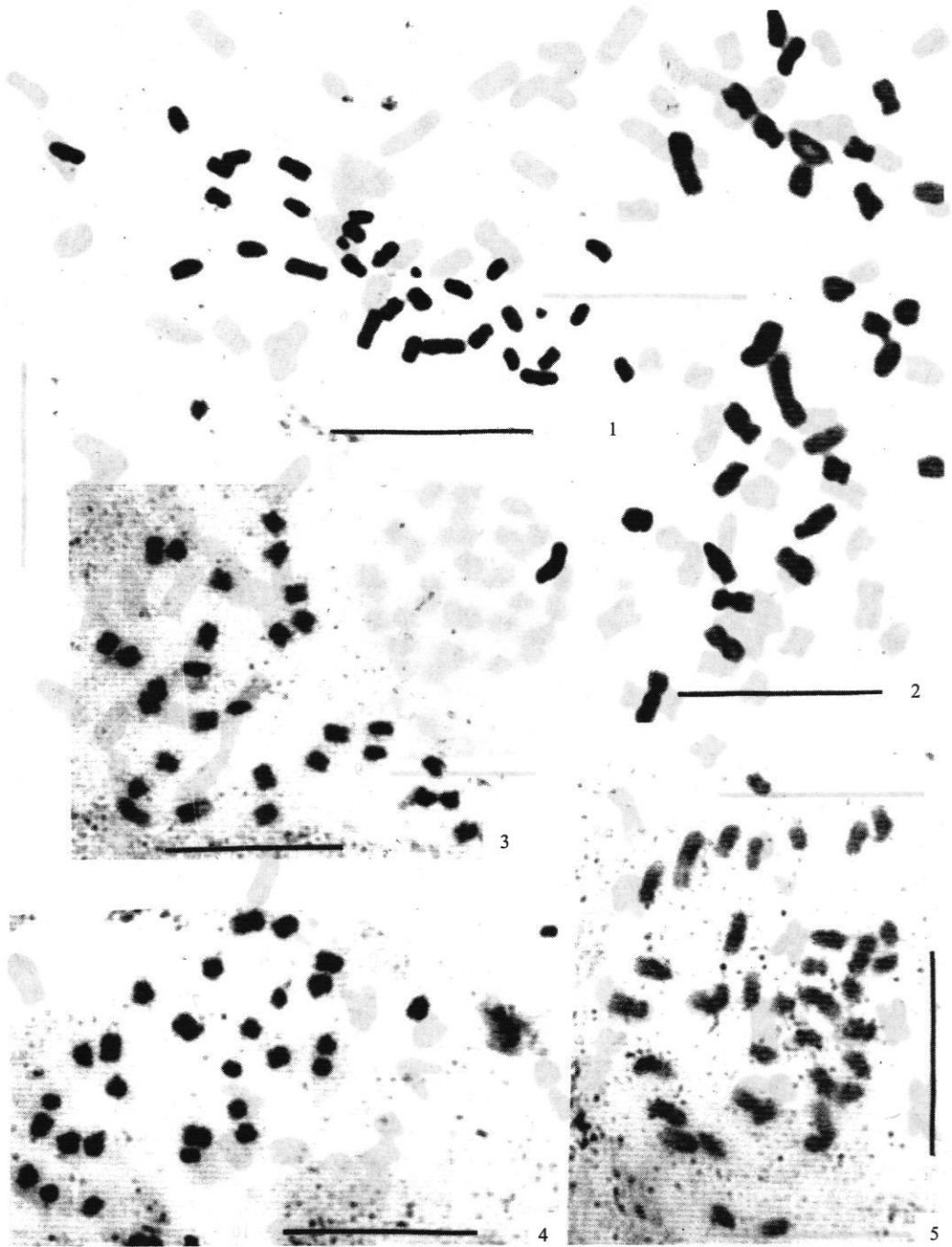
(安徽师范大学生物系, 芜湖, 241000)

摘 要

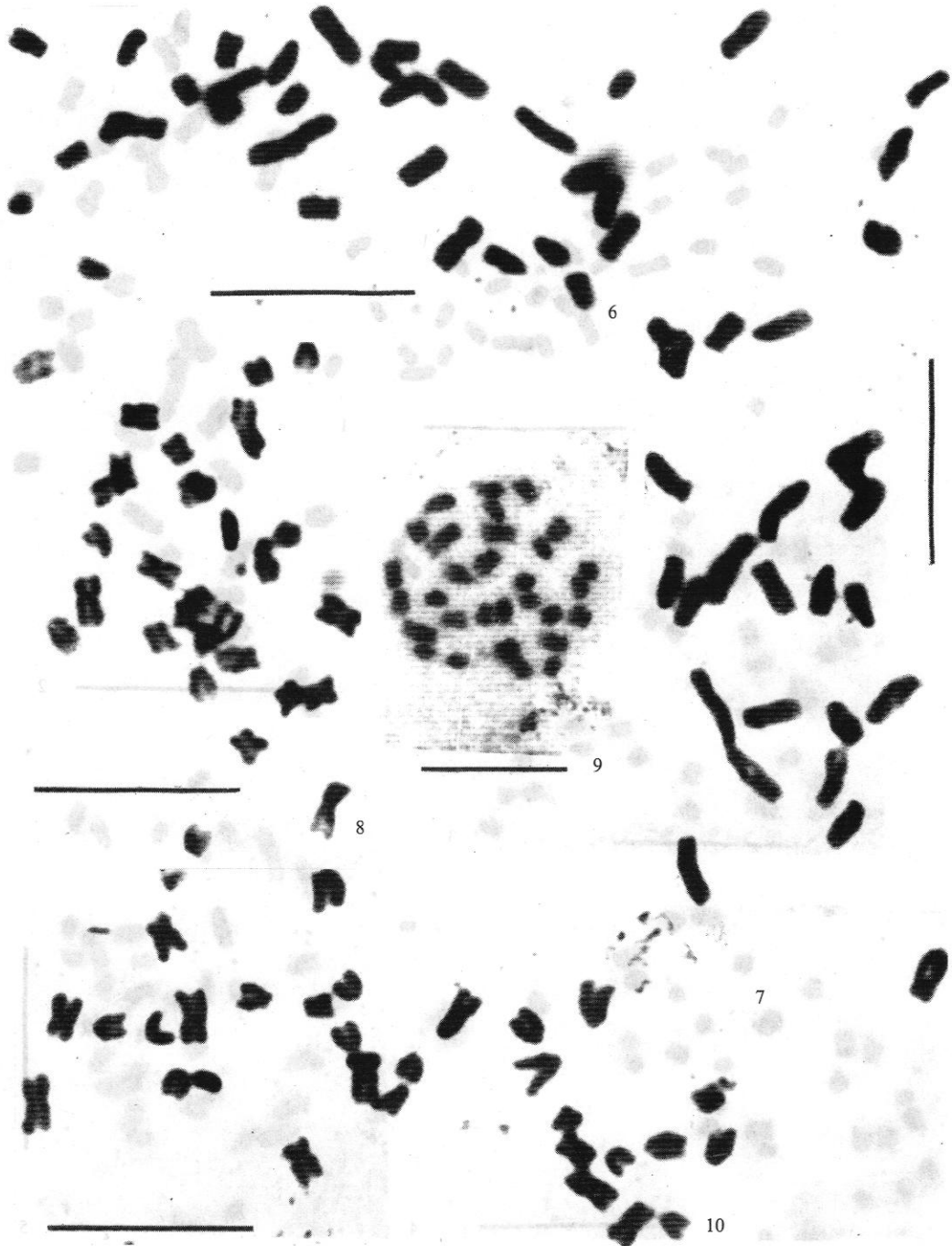
本文首次报道了青海产 9 种风毛菊属植物的染色体数目。其中, 异色风毛菊 (*Saussurea brunneopilosa*) 的染色体数目为 $2n = 30 + 3B$; 沙生风毛菊 (*Saussurea arenaria*) 为 2 个居群, 即湟源居群和兴海居群, 2 个居群的染色体数目均为 $2n = 30$; 无梗风毛菊 (*Saussurea apus*) 的染色体数目为 $2n = 30$; 西藏风毛菊 (*Saussurea tibetica*) 的染色体数目为 $2n = 36$; 钝苞雪莲 (*Saussurea nigrescens*) 的染色体数目为 $2n = 32$; 达乌里风毛菊 (*Saussurea davurica*) 的染色体数目为 $2n = 28$; 康定风毛菊 (*Saussurea ceterach*) 的染色体数目为 $2n = 30$; 矮丛风毛菊 (*Saussurea eopygmaea*) 的染色体数目为 $2n = 30$; 林生风毛菊 (*Saussurea sylvatica*) 的染色体数目为 $2n = 30$ 。

关键词: 风毛菊属; 染色体数目

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1. *Saussurea brunneopilosa* $2n = 30$; 2. *Saussurea arenaria* $2n = 30 + 3B$; 3. *Saussurea arenaria* $2n = 30$;
4. *Saussurea apus* $2n = 30$; 5. *Saussurea tibetica* $2n = 36$. (bars = $10 \mu\text{m}$)



6. *Saussurea nigrescens* $2n = 36$; 7. *Saussurea davurica* $2n = 28$; 8. *Saussurea ceterach* $2n = 30$;
9. *Saussurea eopygmaea* $2n = 30$; 10. *Saussurea sylvatica* $2n = 30$. (bars = $10 \mu\text{m}$)