A NOTE ON THE CYTOLOGY OF SOME WEST-HIMALAYAN SPECIES OF THE GENUS **NEPETA**

L. S. Gill

Department of Biology,

University of Waterloo,

Waterloo, Ontario, Canada.

SUMMARY

Chromosome counts of 13 species of **Nepeta** from the West-Himalayas are determined for the first time. The species reported are: **N. linearis** (n = 9), **N. elliptica** (n = 9), **N. eriostachya** (n = 9), **N. spicata** (n = 9), **N. raphanorhiza** (n = 9), **N. govaniana** (n = 9), **N. erecta** (n = 18), **N. mollis** (n = 18), **N. leucophylla** (n = 18), **N. hindostana** (18), **N. graciflora** (n = 9), **N. gracilis** (n = 18), and **N. rudelaris** (n = 18).

A NOTE ON THE CYTOLOGY OF SOME WEST-HIMALAYAN SPECIES OF THE GENUS **NEPETA**

L. S. Gill

Department of Biology,

University of Waterloo,

Waterloo, Ontario, Canada

INTRODUCTION

The present contribution is essentially a part of the project entitled "Cytotaxonomic Studies on the West-Himalayan Labiatae" undertaken by the author in 1963. The genus **Nepeta** is comprised of 160 species (Cove, 1955), of annual or perennial herbs or undershrubs, chiefly distributed in temperate Europe, North Africa and Asia. Mukerjee (1940) has reported 41 species from the Indian sub-continent, of which 28 species are distributed in the Western-Himalayas. The present paper deals with 14 species.

MATERIAL AND METHODS

The materials for study were collected by the author during many botanical excursions in the Western Himalayas from the specific localities mentioned in Table I. Chromosome counts were made from the meiotic studies in the pollen mother cells, using Carnoy's fluid. Voucher specimens are deposited in the Herbarium of the Panjab University, Chandigarh, India.

TABLE I

TAXA EXAMINED POR CHROMOSOME NUMBER

Taxon	Voucher	Origin	n Number
Nepeta linearis Royle ex Bth.	Gill 7501	Tangmarg, 2100 m.	9
N. elliptica Royle ex Bth.	Gill 7427	Subash Peak, Naintal, 2400 m.	9
N. eriostachya Bth.	Gill 7487	Gulmarg, 2500 m.	9
N. spicata Bth.	Gill 7486	Gulmarg, 2500	9
N. raphanorhiza Bth.	Gill 7503	Tangmarg, 2100 m.	9
N. govaniana Bth.	Gill 7374	Khilanmarg, 2850 m.	9
N. erecta Bth.	Gill 7479	Gulmarg, 2600 m.	18
N. mollis Bth.	Gill 7420	Nainital, 1900 m.	18
N. distans Royle ex Bth.	Gill 7432	Nainital, 2000 m.	18
N. leucophylla Bth.	Gill 3177	Mussoorie, 2100 m.	18
	Gill 7389	Nainital, 1800 m.	18
N. hindostana Hains	Gill 7403	Nainital,2000 m.	18
N. graciflora Bth.	Gill 7443	Jeolikot, 1300 m.	9
N. gracilis Bth.	Gill 7416	Nainital Hills, 1380 m.	18
N. rudelaris Buch-Ham.	Gill 7407	Nainital, 1900 m.	18

DISCUSSION

Chromosome numbers with the exception of **Nepeta distans** (n = 18) are new counts. Zhukova (1967b) reported 2n=26 for **N. distans,** which is not in line with the base numbers of 9 and 17 (Darlington & Wylie, 1955). All the presently worked out taxa are based on x=9. More counts are needed to clarify the position of base number in **N. distans.** Larsen (1960a) determined 2n=16 in **N. teydea,** which is indicative of a new base number of 8. The high base number of 17 appears to be secondary in origin and might have arisen by amphiploidy. The well-known case of secondary origin is of Pomoideae (x=17) from Spiraeoideae (x=9) and Prunoideae (x=8) (Stebbins, 1950). Thus the base number in this genus are 8, 9, 13 and 17. Intraspecific races have been reported in **N. cataria** with 2n=34 (Mulligan, 1959) and 2n=36 (Sugiura, 1940).

ACKNOWLEDGEMENT

The author is grateful to Professor P. N. Mehra, D. Sc. for providing the laboratory facilities.

REFERENCES

Core, E. L. (1955). Plant Taxonomy. New York. 459 pp.

Darlington, C. D. & Wylie, A. P. (1955). Chromosome Atlas of Flowering Plants. London. XIX + 519 pp.

Larsen, K. (1960a). Cytological and experimental studies on the flowering plants of the Canary Islands. Biol. Skrift. K. Dansk. Vidensk. Selsk, 11.3:1-60.

Mukerjee, S. K, (1940). A revision of the Labiatae of the Indian Empire. Rec. Bot. Sur. India. Vol. XIV No. 1. pp. 228.

Mulligan, G. A. (1959). Chromosome numbers of Canadian weeds. II. Canad. Jour. Bot. 37:81-92.

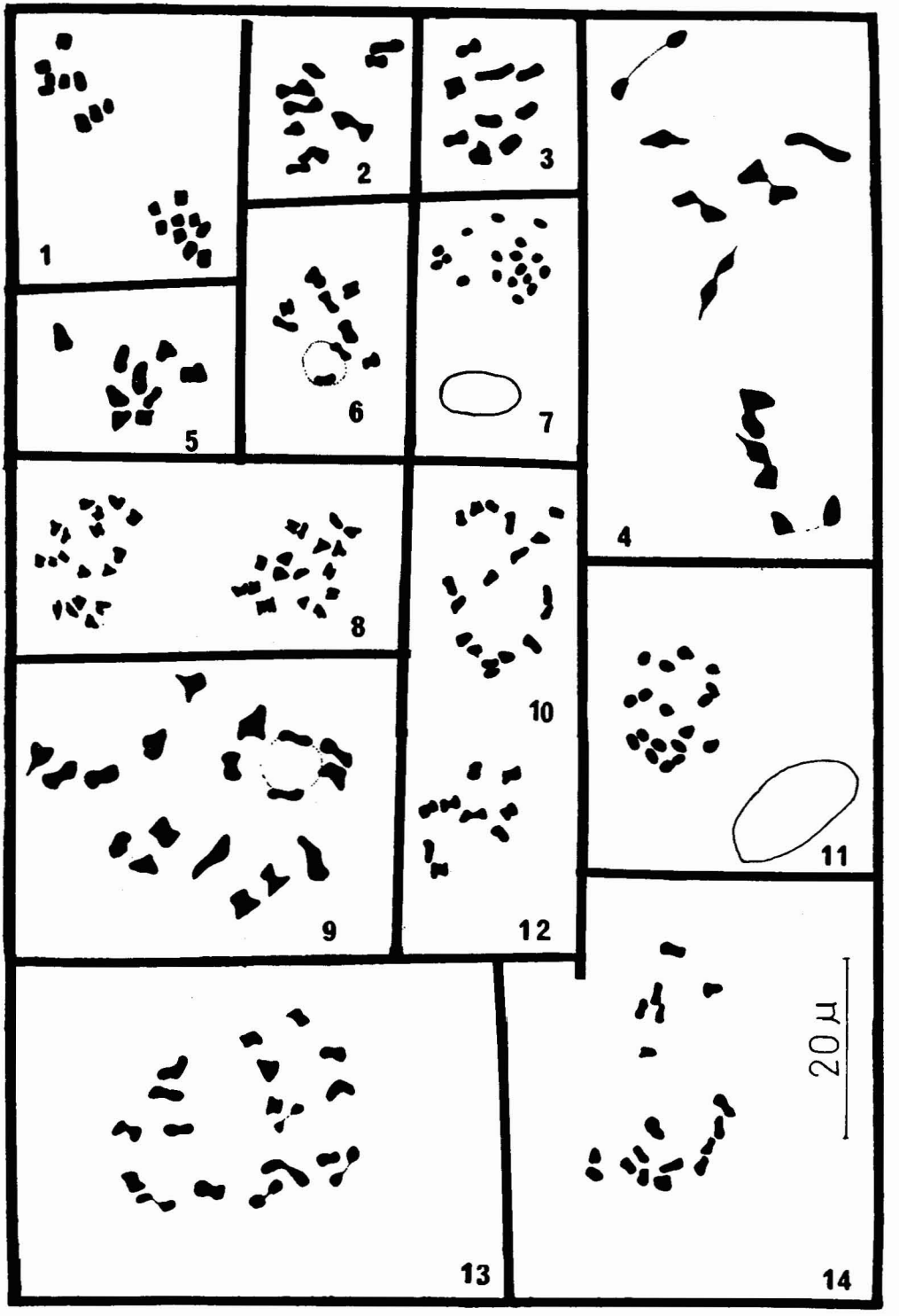
Stebbins, G. L. (1950). Variation and Evolution in Plants. New York. 643 pp.

Suigura, T. (1940). Cytologia, 10, 558.

Zhukova, P. G. (1967b). Karyology of some plants cultivated in the Arctic. Alpine Botanical Gardens (in Russian). In N. A. Avrorin (ed.). Plantarum in Zonam Polarem Transportatio. II. Leningrad, 1967. pp. 139-149.

EXPLANATION TO FIGURES

1.	**Nepeta linearis**	n = 9	First anaphase.
2.	**N. elliptica**	n = 9	first metaphase.
3.	**N. eriostachya**	n = 9	first metaphase.
4.	**N. spicata**	n = 9	first metaphase.
5.	**N. raphnorhiza**	n = 9	first metaphase.
6.	**N. govaniana**	n = 9	Diakinesis.
7.	**N. erecta**	n = 18	first anaphase.
8.	**N. mollis**	n = 18	second metaphase.
9.	**N. distans**	n = 18	Diak
10.	**N. leucophylle**	n = 18	first metaphase.
11.	**N. hindostana**	n = 18	first anaphase.
12.	**N. graciflora**	n = 9	first metaphase.
13.	**N. gracilis**	n = 18	Diak.
14.	**N. rudelaris**	n = 18	first metaphase.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
20 μ