

Chromosome numbers of some shrubs and trees from the Bulgarian flora

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Abstract. The chromosome numbers of nine species of shrubs and trees from the Bulgarian flora are reported: *Acer negundo*, *Corothamnus procumbens*, *Cotoneaster nebrodensis*, *Fraxinus excelsior*, *F. oxycarpa*, *Lembotropis nigricans*, *Pyrus pyraster*, *Ulmus laevis*, and *Viburnum lantana*. For seven species, the chromosome numbers are reported for the first time from Bulgarian populations. For the species *F. oxycarpa*, this is the first record of the chromosome number; for *L. nigricans* and *V. lantana*, the chromosome numbers reported here confirm the earlier reports of Bulgarian origin.

Key words: Bulgarian flora, chromosome numbers, shrubs, trees

Introduction

Karyological studies of tree and shrub species from the Bulgarian flora have made an important contribution to the list of karyologically studied higher plants in Bulgaria.

During the past few years, karyological investigations have been intensified, which considerably increased the number of studied tree and shrub taxa from the Bulgarian flora. For most of these taxa, the chromosome numbers have been established for the first time from Bulgarian populations.

Material and methods

The plant material (live specimens) was collected from natural accessions in Bulgaria and has been cultivated at the experimental house of the Institute of Botany. The karyological investigation was carried out at the Cytotaxonomical Laboratory of the Institute. Voucher specimens have been deposited in SOM.

Root tips were pretreated with 0.01 % Colchicine for 1.5–2 h and fixed in ethanol/glacial acetic acid (3:1) for 24 h in a refrigerator. Hydrolyzation was conducted in 1N HCl, at 60 °C, for 20 min. The root tips were transferred into HCl/ethyl ether (1:1) for 15 min and stained with Haematoxylin after Gomori (Melander & Wingstrand 1953) for 90 min at 60 °C. Then the root tips were squashed in 45 % acetic acid and mounted in Euparal. The microphotographs were made with high-performance CCD camera and Olympus-UC-MAA3 microscope, Japan.

Results and discussion

Acer negundo L. (Aceraceae)

$2n = 26$ (Fig. 1)

Northeast Bulgaria: in the valley of river Rousenski Lom, near Besarbovo village, 05.05.2006, coll. S. Stoyanov (SOM 163993).

This is the first record from Bulgaria. The chromosome number confirms the earlier counts from Eu-

rope (see Fedorov 1969: 10; Goldblatt 1981: 28, 1985: 18; Goldblatt & Johnson 1990: 15, 1991: 26, 2000: 12 for references). The chromosome number $2n = 42$ is also known from literature (Sha & al. 1995, after Goldblatt & Johnson 1998: 12).

***Corothismus procumbens* (Waldst. & Kit.) C. Presl (Fabaceae)**

$2n = 22$ (Fig. 2)

Znepole Region: in open grassy and stony places, northwest of Berende village, Godech district, 24.04.2006, coll. V. Goranova (SOM 163991).

This is the first record from Bulgaria. The diploid chromosome number confirms the earlier reports (see Fedorov 1969: 292 for references). The chromosome number $2n = 48$ was published by Dvořák & Dadáková from Czechoslovakia (see reference in Goldblatt 1981).

***Cotoneaster nebrodensis* (Guss.) C. Koch (Rosaceae)**

$2n = 68$ (Fig. 3)

Rhodopi Mts (Central): Trigrad gorge, 22.06.2004, coll. S. Stoyanov (SOM 163998).

This is the first record from Bulgaria. The result confirms the data published by Murín & Májovský from Slovakia (see the reference in Goldblatt & Johnson 1996).

***Fraxinus excelsior* L. (Oleaceae)**

$2n = 46$ (Fig. 4)

Rhodopi Mts (Eastern): near Madzharovo village, 16.05.2004, coll. V. Goranova (SOM 163992).

This is the first record from Bulgaria. The result agrees with the other authors (see Fedorov 1969: 445; Goldblatt 1981: 337, 1984: 253, 1988: 147; Goldblatt & Johnson 1994: 141, 1996: 155, 1998: 113 for references).

***Fraxinus oxycarpa* M. Bieb. ex Willd. (Oleaceae)**

$2n = 46$ (Fig. 5)

Northeast Bulgaria: in the valley of river Rousenski Lom, near Ivanovo village, 06.05.2006, coll. S. Stoyanov (SOM 163996).

This is the first record for a chromosome number of this species. No earlier records of the chromosome numbers of this taxon have been known in literature.

The same chromosome number ($2n = 46$) was reported for *F. ornus* from the Bulgarian flora by Ivanova & al. (2005, 2006).

***Lembotropis nigricans* (L.) Griseb. (Fabaceae)**

$2n = 48$ (Fig. 6)

Balkan Range (Western): in the valley of river Archar, near Rayanovtsi village, 24.03.2004, coll. P. Stanimirova (SOM 163994).

The chromosome number $2n = 48$ confirms the earlier reports from Bulgarian populations (Kozuharov & al. 1972; Kuzmanov 1978) and elsewhere (see Fedorov 1969: 303; Goldblatt 1981: 243; Goldblatt & Johnson 1991: 104 for references).

***Pyrus pyraaster* Burgsd. (Rosaceae)**

$2n = 34$ (Fig. 7)

Znepole Region: in shrubby places around Berende Izvor village, Godech district, 24.04.2006, coll. V. Goranova (SOM 163990).

This is the first record from Bulgaria. The result confirms the data published by Druškovič & Lovka. (see the references in Goldblatt & Johnson 1998.)

***Ulmus laevis* Pall. (Ulmaceae)**

$2n = 28$ (Fig. 8)

Northeast Bulgaria: in the valley of river Rousenski Lom, near Ivanovo village, 06.05.2006, coll. S. Stoyanov (SOM 163997)

This is the first record from Bulgaria. The chromosome number confirms the earlier counts by different authors (see Fedorov 1969: 711; Goldblatt 1984: 359; Goldblatt 1985: 192; Goldblatt & Johnson 2000: 147 for references).

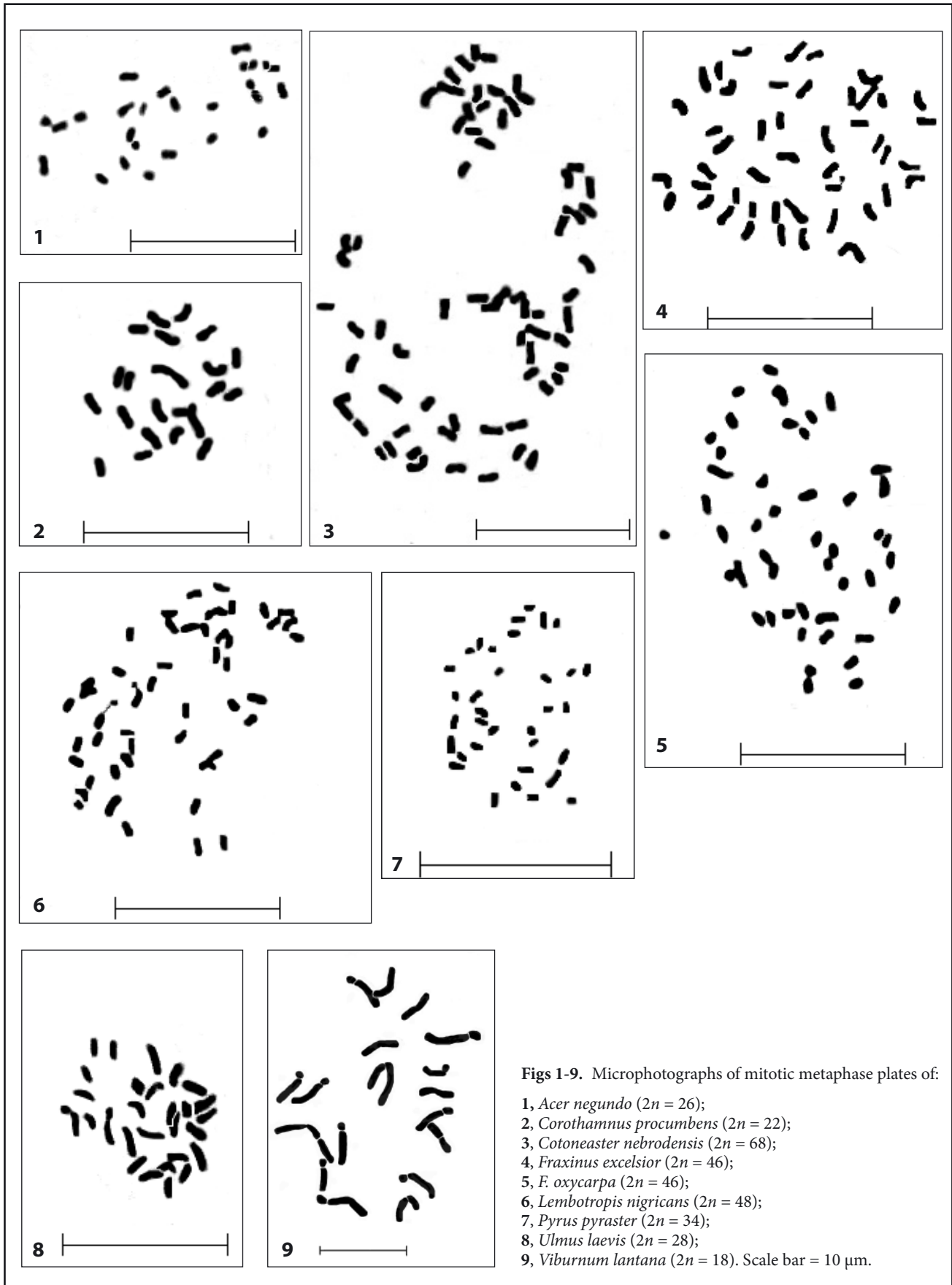
***Viburnum lantana* L. (Caprifoliaceae)**

$2n = 18$ (Fig. 9)

Mt Sredna Gora (Western): Mt Lozenska, on the southern slopes, above the river near Kokalyane village, 02.05.2005, coll. D. Stoykov (SOM 163995).

The result confirms the earlier reports of this taxon from Bulgarian populations (Česhmedžiev 1994; Ivanova & al. 2005) and the earlier counts by Fedorov (1969: 199), Goldblatt (1981: 173, 1988: 81), Goldblatt & Johnson (1991: 81, 1994: 73, 1996: 89, 2000: 51, 2003: 96).

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