Mediterranean chromosome number reports — 1

edited by G. Kamari, F. Felber & F. Garbari

Abstract

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This is the first instalment of a series of reports of chromosome numbers from Mediterranean areas, peri-Alpine communities and the Atlantic Islands, in French or English language. It comprises contributions on 45 different taxa: *Crepis* from Greece, by G. Kamari (Nos. 1-6); *Gramineae* from Switzerland, by M. M. Duckert-Henriod (Nos. 7-25); *Anthoxanthum*, by F. Felber (Nos. 26-27); *Luzula* from Spain, by M. C. García Herrán (Nos. 28-29); varies plants from Anatolia, by Y. K. Iyer (Nos. 30-37); *Euphorbia* from Turkey, by J. Vicens & al. (Nos. 38-44); and *Silene ciliata* from the Pyrénées, by F. Vuillemin (Nos. 45).

Editorial

This series of reports will be published in each issue of *Flora Mediterranea*. The geographical coverage extends to all countries included in *Med-Checklist*, plus Austria, Switzerland, the Canary Islands, Madeira and the Azores. New chromosome numbers and first chromosome counts for any individual territory may be accepted for inclusion. Nomenclature should follow the published volumes of *Med-Checklist*, otherwise *Flora Europaea*. If deviation from this standard is necessary the reasons must either be stated, or their published source must be cited. Full indications of the locality, its coordinates (by minutes of degrees) and reference to voucher specimens, (including herbarium of deposit) are indispensable. A title, a short comment including figures, drawings, photographs and a bibliography may be added. Follow the layout of the present reports, bearing in mind that any numbering you may use for your illustrations is previsional and subject to change without consultation to keep a single numerical sequence throughout the independent reports. Authors are invited to submit their manuscripts in English or French to one of the editors. All papers conforming to the above guidelines, and received before the end of the calendar year will, space permitting, be published in the next following issue of *Flora Mediterranea*.

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Reports (1-6) by Georgia Kamari & Anastasios Anagnostopoulos

1. ***Crepis commutata*** (Sprengel) Greuter — $2n = 10$ (Fig. 1, 1a)

Gr: Peloponnisos, island of Poros, 37°31'N, 23°27'E, abandoned fields, 50-100 m, 24.05.1990, *Anagnostopoulos & Athanasiou* 1901 (UPA).
Cr: Prov. Irakliou, above Moni Gorgolaini, 35°12'N, 24°59'E, 450 m, 20.8.1987, *Anagnostopoulos* 1899 (UPA).
— Prov. Irakliou, near the village Gazi, 35°19'N, 25°06'E, c. 70 m, 20.8.1987, *Anagnostopoulos* 1900 (UPA).

Distributed in the SE part of Balkan Peninsula (**Bu, Tu, Gr, AE, Cr**), W Asia Minor (**An**) and E Mediterranean region (**Cy, LS, IJ?**).

The chromosome number $2n = 10$ is the same as that given by Baden (1983: 335) from AE (island of Samos). The karyotype of all examined plants (three localities) showed $2n = 2x = 4m + 4sm + 2st\text{-}SAT = 10$ chromosomes, with sizes ranging from 4.3 to 2.2 µm. The two metacentric chromosome pairs are the shortest within the karyotype while the two submetacentric pairs are the longest ones. The karyotype of *C. commutata* is similar to that given by Babcock (1947b: 698), based on plants of unknown origin. Bartolo & al. (1978: 79) and Brullo & al. (1979: 169) presented a similar karyotype for the closely related *C. foetida* L. from Italy.

The adopted name, from Greuter (1975), deviates from that accepted in *Flora Europaea* [*Crepis foetida* subsp. *commutata* (L.) Babcock].

2. ***Crepis sancta*** (L.) Babcock — $2n = 10$ (Fig. 2, 2a)

Gr: Ipiros, close to the village Monodendri, 39°50'N, 20°43'E, in macchia, c. 750 m, 28.5.1990, *Phitos & al.* 20792 (UPA).
— Ipiros, Vikos gorge, place called "Balkoni Vikou", 39°53'N, 20°44'E, c. 1150 m, 28.5.1989, *Phitos & al.* 20793 (UPA).
— Sterea Ellas, Mt. Iti, above Katavothra, 38°45'N, 22°17'E, 1450 m, 3.6.1985, *Tiniakou* 1550 (UPA).

Widespread, from SE Europe to C Asia and NW India.

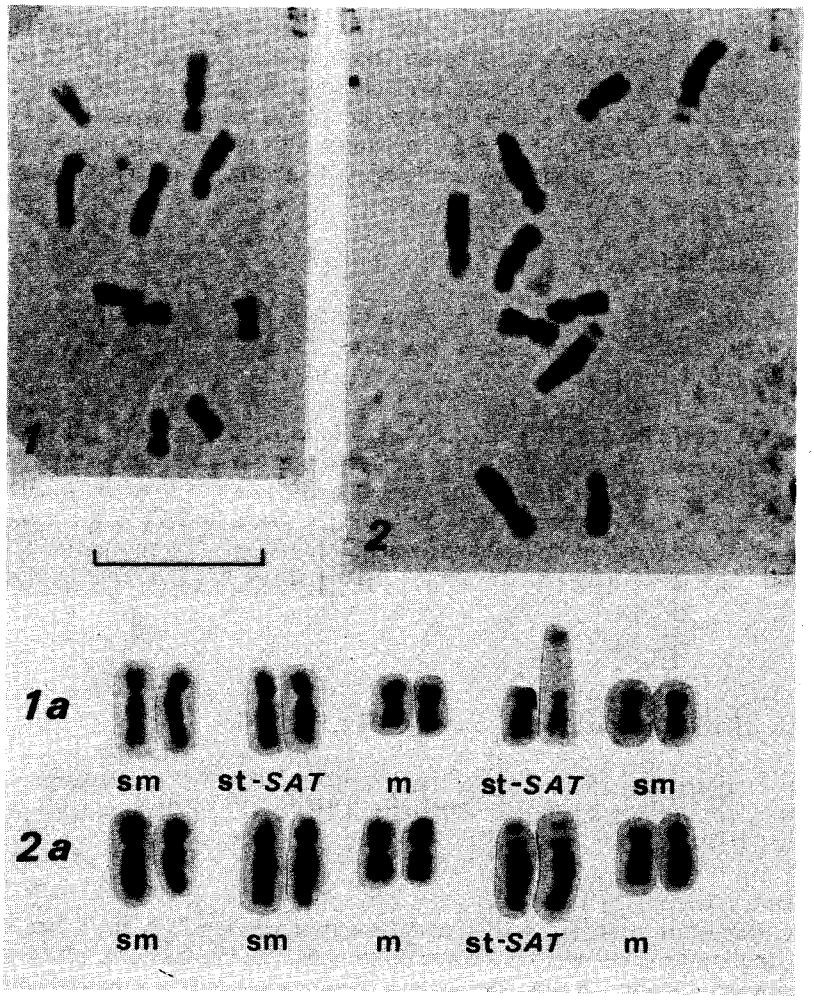
The chromosome number $2n = 10$ confirms the numbers cited in the literature (see Fedorov 1969: 95, Moore 1982: 82, and Loon 1987: 272, for references). Strid & Franzén (1981: 841) found 0-2 B chromosomes in a population from Mt. Olympus. The karyotype includes $2n = 2x = 2m + 4sm + 4st\text{-}SAT = 10$ chromosomes, the size of which was found to range from 4.7 to 3.5 µm. The two submetacentric pairs are, respectively, the longest and the shortest ones within the karyotype. A photograph of the latter, and a karyogram are given here for the first time for this taxon .

3. ***Crepis rubra*** L. — $2n = 10$ (Fig. 3, 3a)

Gr: Island of Kephallinia, between Moni Estavromenou and the village Pessada, 38°06'N, 20°34'E, c. 20-50 m, 12.5.1985, *Phitos & Kamari* 19504 (UPA).

Distributed in SE Europe (**It, Al, Ju, Gr, Cr, AE**) and in W Asia Minor (**An**).

The chromosome number found confirms previous counts (see Fedorov 1969: 95, for references). The karyotype consists of $2n = 2x = 2m + 4sm + 4st\text{-}SAT = 10$ chromosomes, whose sizes vary from 5.4 to 3.1 µm. The two submetacentric chromosome pairs are the longest within the karyotype. Furthermore, we observed a somatic association between a metacentric chromosome and the big satellite of one SAT-chromosome (Fig. 3). Karyotypes of this taxon (from material of unknown origin) have been presented by Babcock (1947b: 685) and by Ferrer & Lacadena (1977: 27). However, in our material, some minor differences in the chromosome morphology and the existence of two SAT-chromosome pairs have been observed (Fig. 3, 3a).



Figs. 1-2. *Crepis*. — Karyotype (1) and karyogram (1a) of *Crepis commutata* (Sprengel) Greuter, $2n = 10$. — Karyotype (2) and karyogram (2a) of *Crepis sancta* (L.) Babcock., $2n = 10$. — Scale bar = 10 µm.

4. *Crepis multiflora* Sm. — $2n = 8$ (Fig. 4, 4a, 4b)

Gr: Island of Gioura, place called Skala, 39°23'N, 24°09'E, among limestone rocks in phrygana, 5-100 m, 3.5.1986, *Phitos & Kamari* 19725 (UPA).
— Island of Kithira, place called Platia Ammos, 36°22'N, 22°57'E, c. 5-50 m, 2.5.1985, *Tzini* 122 (UPA).

Distributed mainly in Greece (**Gr, Cr, AE**) and in the E Mediterranean area (**An, Cy, IJ, LS, Eg**).

So far, the chromosome number $2n = 8$ and the karyotype of *C. multiflora* have been reported only from material of unknown origin by Babcock (1947a, 1947b: 759). The karyotype of the examined material includes $2n = 2x = 2sm + 4st + 2st\text{-}SAT = 8$ chromosomes, ranging from 5.7 to 4.3 μm. It is to be noted that in material from the island of Gioura, a strong secondary constriction is present on the long arm (close to the centromere) of one of the homologous SAT-chromosomes (Fig. 4, 4b). Furthermore, the plants from this locality differ from the typical ones in some morphological characters, mainly in the ribs of achenes (5 stronger, spiculate and 5 weaker) and in the stem (which is branched from the base, with many nearly equal divaricate secondary stems).

5. *Crepis turcica* Degen & Bald. — $2n = 8$ (Fig. 5, 5a)

Gr: S. Pindhos, hills W and SW of Katarrachias, between the villages Sirako and Kalarites, 39°35'N, 21°06'E, on limestone rocks, c. 1200 m, *Phitos & Kamari* 20794 (UPA).

Endemic to NW Greece, from Mt. Peristeri to the Albanian border.

The chromosome number $2n = 8$ and the karyotype of *C. turcica* was reported for the first time by Kamari (1984: 402). In the present study, material from the "locus classicus" is examined and the karyotype $2n = 2x = 2sm + 4st + 2t\text{-}SAT = 8$ chromosomes is established. The chromosome size values range from 6.7 to 4.7 μm; thus the karyotype of this taxon consists of long chromosomes. A karyogram of *C. turcica* is also provided (Fig. 5a).

6. *Crepis guioliana* Babcock — $2n = 10$ (Fig. 6, 6a, 6b)

Gr: N. Pindhos, Mt. Mavrovouni-Flega, 39°52'N, 21°07'E, rocky serpentine slopes close to the main summit, c. 200 m, 1.8.1990, *Anagnostopoulos & Athanasiou* 1855 (UPA).

Endemic to Greece (N. Pindhos).

The chromosome number $2n = 10$, and the karyotype $2n = 2x = 2m + 2sm + 4st + 2st\text{-}SAT = 10$ chromosomes, were unknown up to now. The chromosome size was found to range between 4.8 and 2.8 μm. The longest chromosome pair is submetacentric and the shortest one is acrocentric; these two pairs usually present structural heterozygosity on their short arm (Fig. 6, 6b). Furthermore, the satellites of the SAT-chromosomes are not always visible (Fig. 6a). *C. guioliana* is closely related to *C. athoa* which also has $2n = 10$ chromosomes (Papanicolaou, unpubl.).