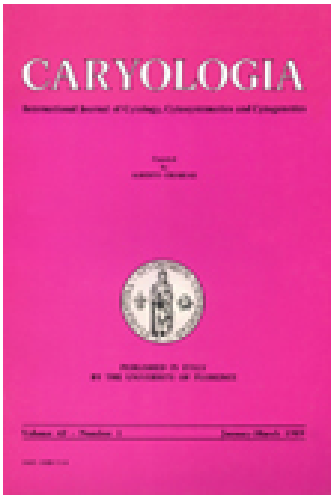

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KARYOLOGICAL STUDIES OF SOME TAXA OF THE GENUS *OPHRYS* (ORCHIDACEAE) FROM APULIA (ITALY)

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SUMMARY — Karyological studies of some taxa of the genus *Ophrys* (Orchidaceae) from Apulia are reported. Diploid chromosome number $2n = 36$ was observed in all taxa studied. Correlations between each taxon's karyotype are discussed. The karyotypes of these taxa are characterized by similar chromosome types.

INTRODUCTION

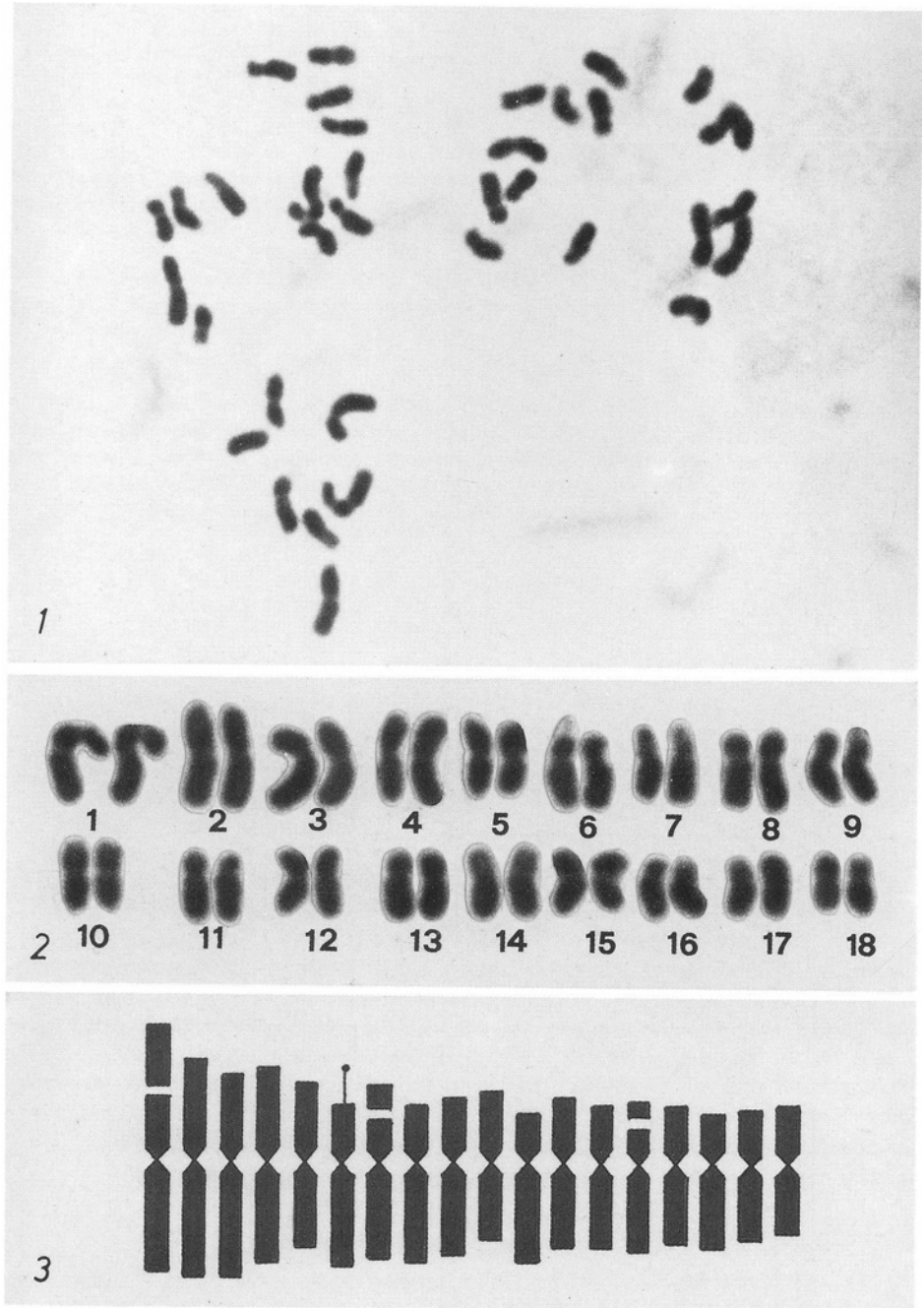
The genus *Ophrys* L. (Orchidaceae) is represented in Apulia with 25 taxa. Undoubtedly, Apulia is one of the principal areas of *Ophrys*. The object of the present study is a karyological examination of *Ophrys sphegodes* Miller subsp. *sphegodes*, *O. bertolonii* Moretti, *O. oxyrrhynchos* Tod. subsp. *celiensis* (O. Danesch et E. Danesch) Del Prete and *O. fusca* Link.

MATERIAL AND METHODS

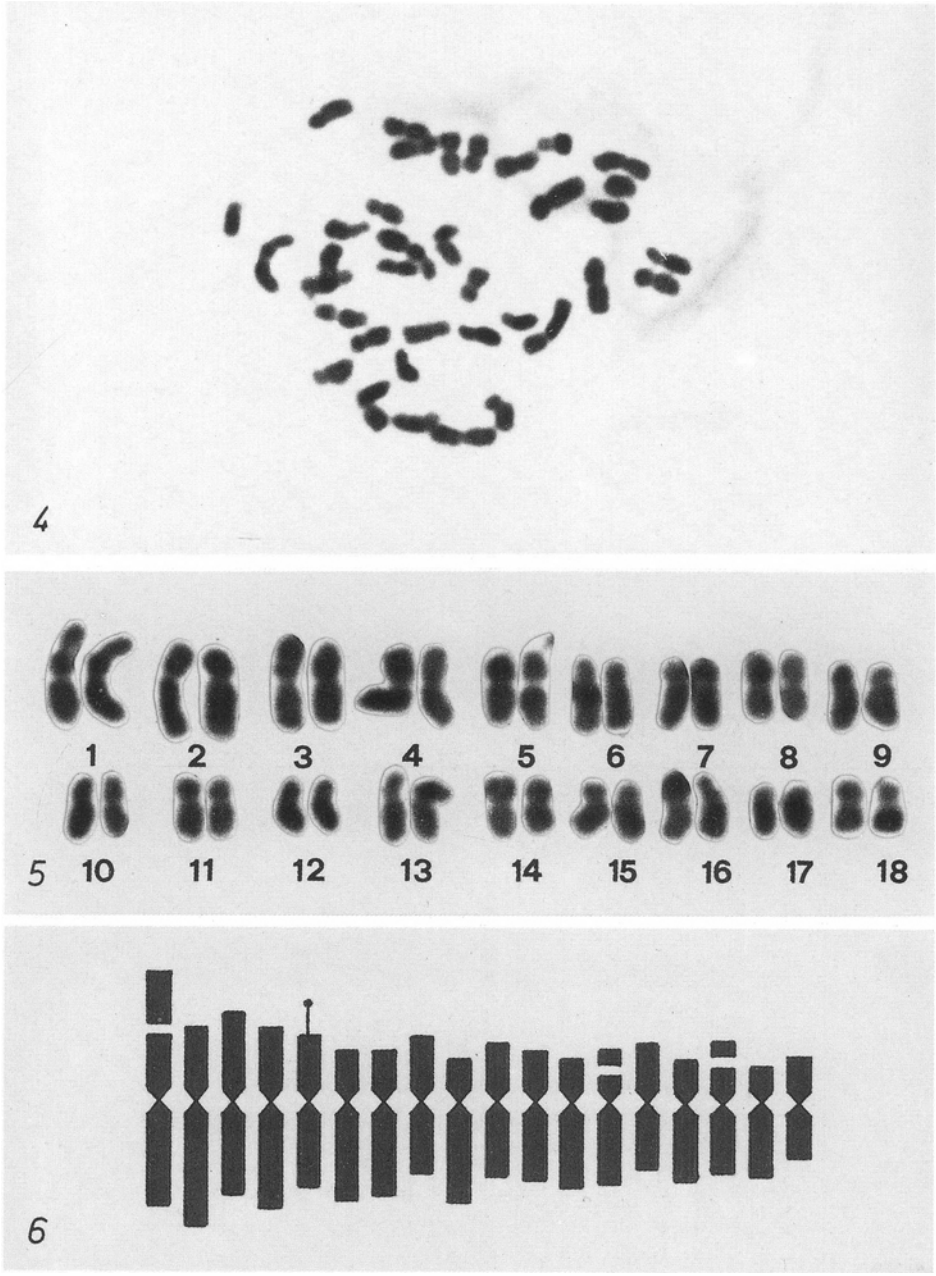
The taxa were collected from Martina Franca (Taranto) for *O. sphegodes* and *O. celiensis*; from Lecce for *O. bertolonii* and *O. fusca*. Immature ovaries were pretreated with colchicine 0.4% for 2-3 hours, then fixed for five minutes in «5,1,1,1» (BATTAGLIA 1957). Hydrolysis was made in concentrated HCl diluted 1:1 with distilled water, at cold for 20 minutes (BATTAGLIA 1957), followed by staining with Feulgen. The karyotype for each of these taxa was constructed by examining better metaphase plates. Nomenclature adopted by LEVAN *et al.* (1964) was followed for recognising chromosomes types.

RESULTS

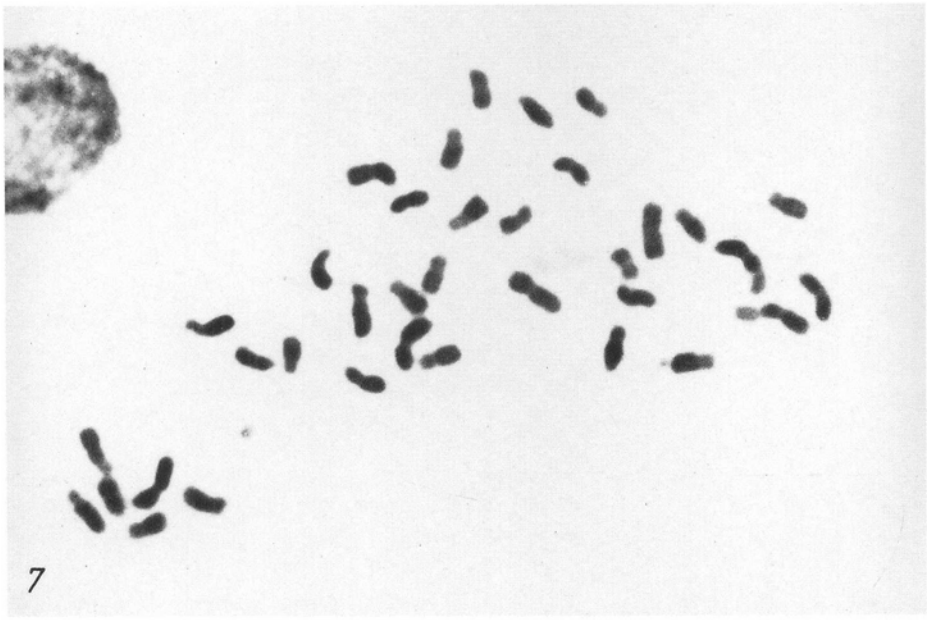
1) *«Ophrys sphegodes» Miller subsp. «sphegodes».* — Somatic analysis from immature ovary mitosis revealed $2n = 36$ chromosomes at metaphase (Fig. 1). The size of the chromosomes varies from 4.22 to 2.00 μm. The karyotype of

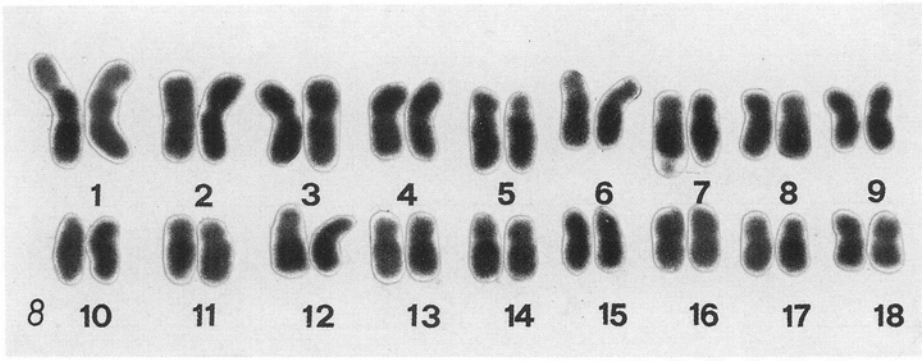


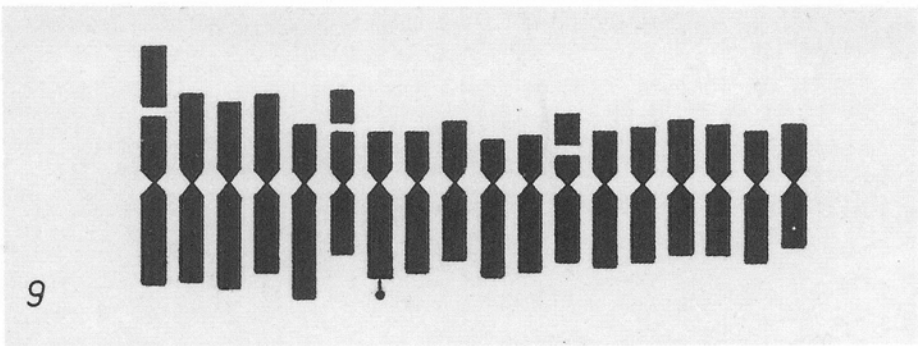
Figs. 1-3. — Mitotic metaphase (×2500); diploid karyotype (×3400) and idiogram of the haploid karyotype of *Ophrys sphegodes* Miller subsp. *sphegodes*.



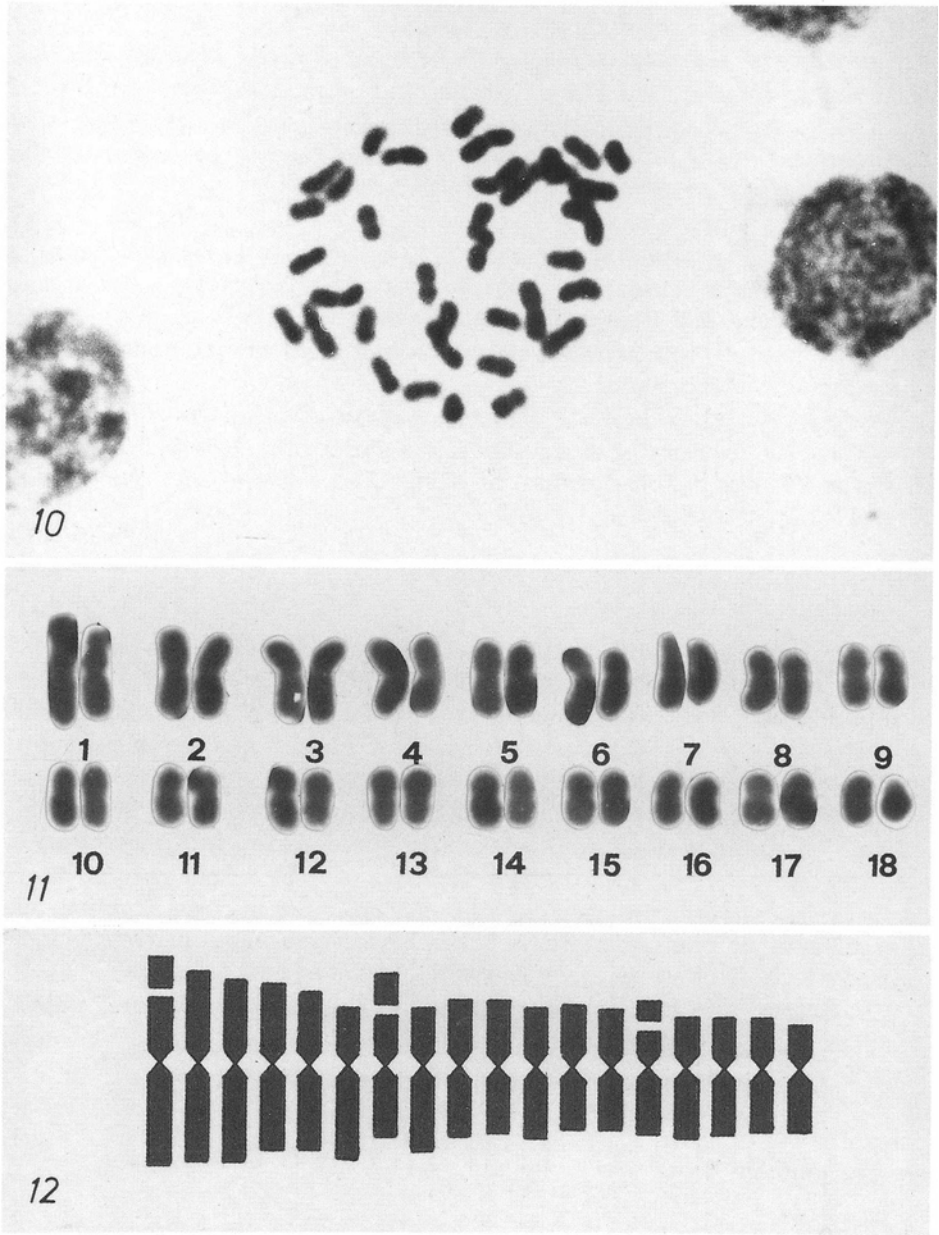
Figs. 4-6. — Mitotic metaphase (×2500); diploid karyotype (×3400) and idiogram of the haploid karyotype of *Ophrys bertolonii* Moretti.







Figs. 7-9. — Mitotic metaphase (×2500); diploid karyotype (×3400) and idiogram of the haploid karyotype of *Ophrys oxyrrhynchos* Tod. subsp. *celiensis*.



Figs. 10-12. — Mitotic metaphase (×2500); diploid karyotype (×3400) and idiogram of the haploid karyotype of *Ophrys fusca* Link.

this taxon consists of $22m + 6sm + 6sm^s + 2st^s$ chromosomes (Figs. 2-3). Pair six: in it, one of the partners has a characteristic microsatellite on the short arm of a submetacentric chromosome.

2) *«Ophrys bertolonii» Moretti.* — Somatic analysis revealed $2n = 36$ chromosomes (Fig. 4). The size of the chromosomes varies from 3.91 to 1.48 µm. The karyotype of this taxon consists of $12m + 2m^s + 16sm + 4sm^s + 2st^s$ chromosomes (Figs. 5-6). Pair five: in it, one of the partners has a microsatellite on the short arm of a metacentric chromosome.

3) *«Ophrys oxyrrhynchos» Tod. subsp. «celiensis».* — Somatic analysis revealed $2n = 36$ chromosomes (BIANCO *et al.* 1988*a*) (Fig. 7). The size of the chromosomes varies from 3.97 to 1.87 µm. The karyotype of this taxon consists of $16m + 2m^s + 12sm + 4sm^s + 2st^s$ chromosomes (Figs. 8-9). Pair seven: in it, one of the partners has a microsatellite on the long arm of a submetacentric chromosome.

4) *«Ophrys fusca» Link.* — Somatic analysis revealed $2n = 36$ chromosomes (Fig. 10). The size of the chromosomes varies from 3.28 to 1.48 µm. The karyotype of this taxon consists of $26m + 2m^s + 4sm + 4sm^s$ chromosomes (Figs. 11-12).

DISCUSSION AND CONCLUSIONS

The chromosome number in the taxa examined was $2n = 36$, as reported by (GREILHUBER and EHRENDORFER 1975; DEL PRETE 1978; SCRUGLI 1978, 1980; MAZZOLA *et al.* 1982 and BIANCO *et al.* 1988*a*); some cases of aneuploidy were observed. Karyotypes of the taxa studied revealed constantly three pairs of satellited chromosomes and, with exception of *Ophrys fusca*, has revealed one pair microsatellited chromosomes each. We observed in *Ophrys sphegodes* one chromosome of pair 6 has a microsatellite; the same for one chromosome of pair 5 of *O. bertolonii* and pair 7 of *O. celiensis*. The microsatellite has been observed only on one chromosome of the above-mentioned pairs and not on both of them, because of poor fixation.

In all four cases examined the first pair of chromosomes has a big satellite, as in the cases of *Ophrys tarentina* and *O. tenthredinifera* recently examined (BIANCO *et al.* 1988*b*).

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