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BIOSYSTEMATIC NOTES ON VICIA INCISA M. BIEB. (LEGUMINOSAE), A RARE SPECIES FOR ITALY (**)

Riassunto — *Note biosistematiche su Vicia incisa M. Bieb., specie rara per l'Italia.* È stata effettuata, per la prima volta in Italia, un'indagine morfo-cariologica su campioni di questa specie, allo scopo di portare un contributo al suo corretto inquadramento sistematico ed alla sua giusta nomenclatura.

Abstract — Two Italian populations of *Vicia incisa* M. Bieb., a rare species for Italy, were investigated from the morphological and caryological points of view, in order to add more data about its characteristics, and at the same time to contribute to the determination of its correct taxonomic rank and nomenclature.

Key words — *Vicia incisa*, Italian specimens, taxonomy, caryology.

According to recent Flora Authors (Ball, 1968; Plitmann, 1970; Pignatti, 1982) *Vicia incisa* Bieb. is normally found in the South Balkan Peninsula, in South Eastern Russia and is considered dubious for Italy. It was in fact found in the ninetheenth century, but only near Rome. It has been recently observed again, always in the same area, and collected (Anzalone, 1983) in two stations (near Albano and near Castelgandolfo).

Since this species is very rare in Italy, it seemed interesting to study the morphology and caryology of these newly found specimens in detail, also in order to help in solving some taxonomic problems. *Vicia incisa* is, in fact, a controversial entity both from the taxonomical and nomenclatural points of view. Several authors consider it at infraspecific level within the *Vicia sativa* group (Fiori, 1925; Ball, 1968; Plitmann, 1970; Zohary and Plitmann, 1979) while others (Mauri, 1820; Gams, 1924; Hollings and Stace, 1974; Pignatti,

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1982) quote it at specific level. The latter authors, moreover, generally call it *Vicia incisa* M. Bieb., but sometimes also *Vicia pimpinelloides* Seb. et Mauri.

The seeds collected in the above mentioned localities were sown in the Genova Botanical Garden and produced fresh material that was the object of our morphological observations and is illustrated in fig. 1; contemporarily some of the germinating seeds produced root tips that were investigated from the caryological point of view. For the cytological methods, see ROTI MICHELOZZI and CAFFARO (1988).

MORPHOLOGY

The main features by which our fresh material of *Vicia incisa* could be separated from all the members of the *Vicia sativa* group are:

— The nectaries of the stipules are white or pale yellow instead of brown or black (Fig. 1D);

— at least several leaflets have toothed or deeply lobed margins instead of entire ones and often reach 15 mm width instead of at most 12 mm (Fig. 1A, E);

— the legumes taper towards the end for 8-10 mm instead of 4-6 mm, and are gray or straw coloured instead of brownish-black (pale yellow only in *Vicia sativa* subsp. *sativa*) (Fig. 1G).

CARYOLOGY

The chromosome number was 2n=14 and the caryotypes were similar in both populations investigated (Fig. 2), though the caryotypic formulae (LEVAN *et alii*, 1964), whole complement lengths and total indexes of symmetry varied as follows:

Population	Caryotypic formula	Whole complement length	Total index of symmetry
Albano	4sm+6st+4sm	48.16 μm	0.35
Castelgandolfo	12st+2sm	53.70 μm	0.28

The greater asymmetry of the Castelgandolfo population caryo-

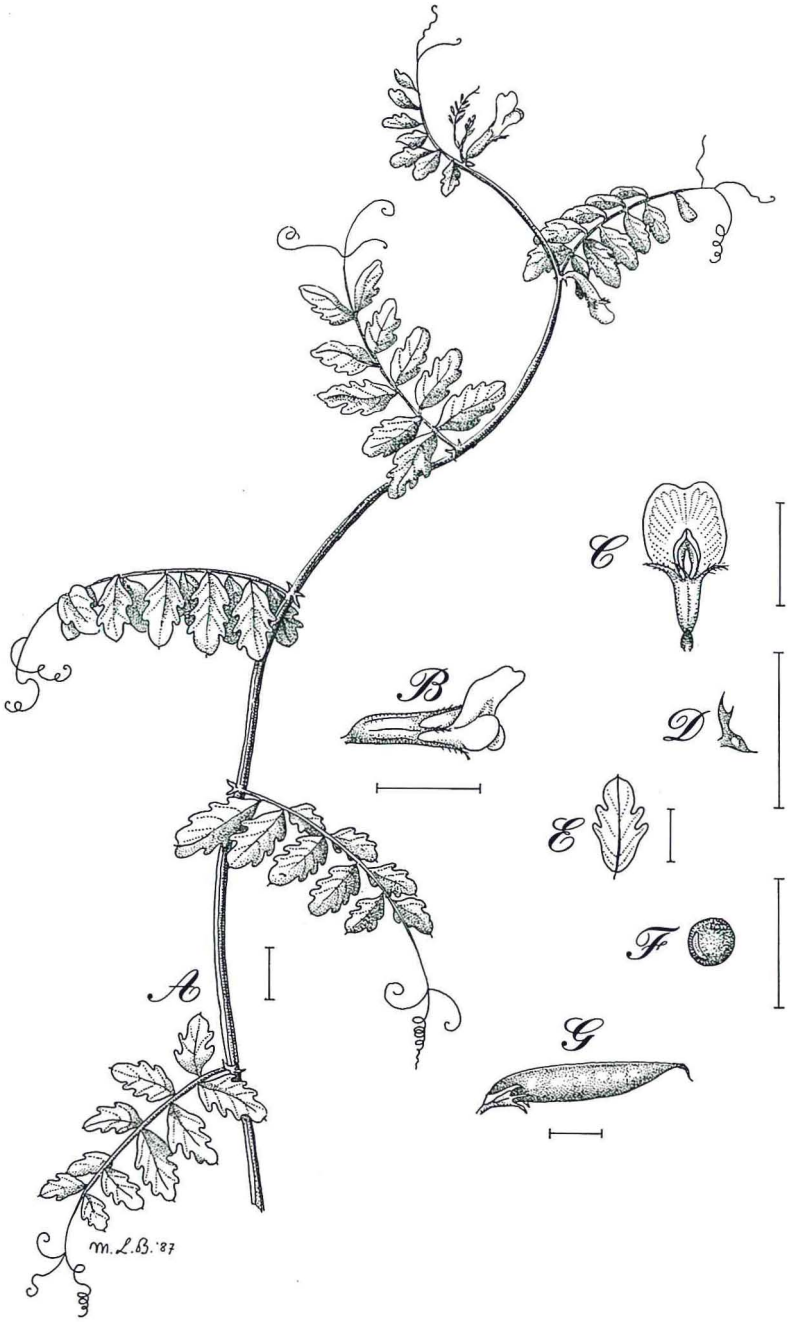

Fig. 1 - *Vicia incisa* M. Bieb. A, branch; B. flower (lateral view); C, flower (under side view); D, stipule; E, leaflet; F, seed; G, legume. Scale = 10 mm.

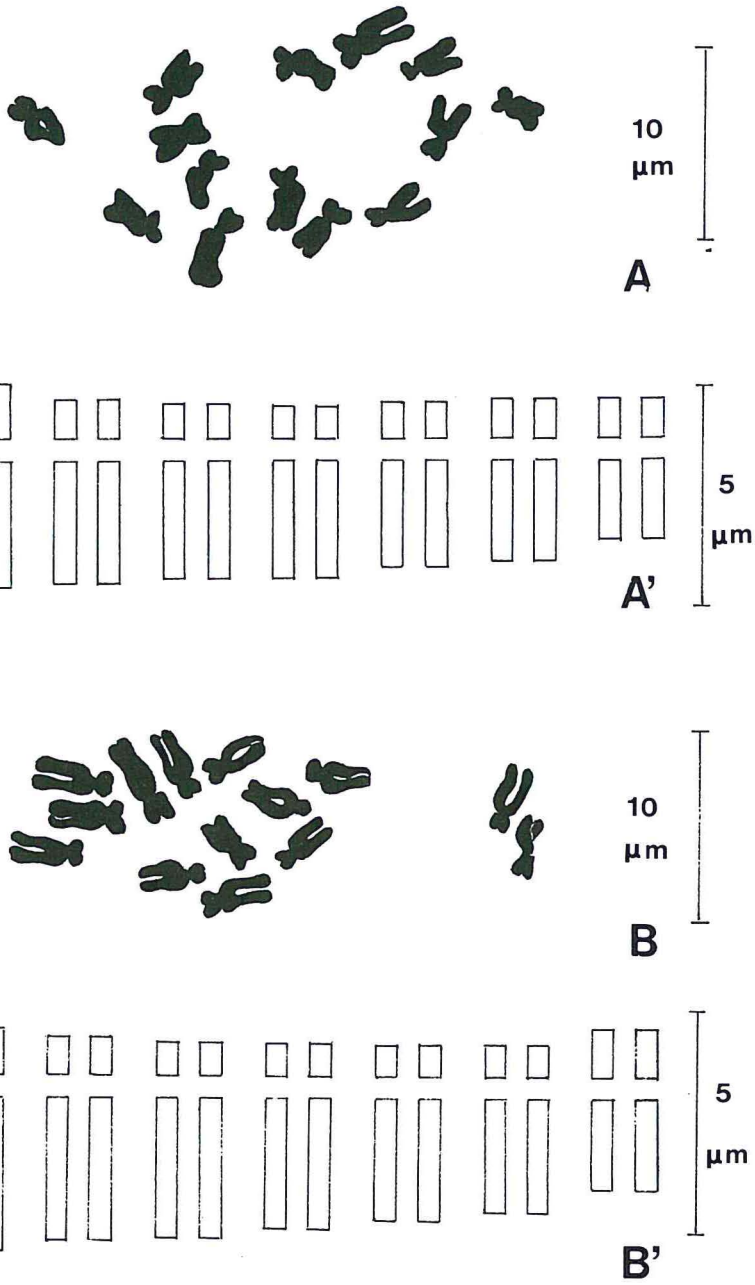

Fig. 2 - *Vicia incisa* M. Bieb. A-A', metaphase plate and idiogram of the Albano population. B-B', metaphase plate and idiogram of the Castelgandolfo population.

type, evidenced by the higher number of «st» chromosomes (LEVAN *et alii*, 1964) and the lower index of symmetry could, as in the Italian populations of *Vicia hirsuta* (ROTI MICHELOZZI and CAFFARO, 1988) or in *Fritillaria erhardii* (BENTZER *et alii*, 1971) be due to a lower contraction of the chromosomes. According to the latter authors, during the contraction of subtelocentric chromosomes, the longer arm shortens more than the short one and therefore, in metaphase plates with very contracted chromosomes, there is a more symmetrical caryotype.

Former studies on *Vicia incisa* caryology are scarce: the chromosome number 2n=14, concurring with our results, was reported by METTIN and HANELT (1964), YAMAMOTO (1973) and ZOHARY and PLITMANN (1979), but only Yamamoto presented an idiogram, while Mettin and Hanelt simply described the characteristics of the chromosomes. According to the first two authors, in the *Vicia incisa* caryotype, a nucleolar constriction, on the short arm of a subtelocentric chromosome, may be noticed. In the Italian material instead it was not possible to see any satellited chromosomes.

DISCUSSION AND CONCLUDING REMARKS

From the morphological point of view, as said above, our studied specimens showed at least three important characters completely different from each of the *Vicia sativa* group members. Therefore, in our opinion, this entity can well be classified at specific level.

The results of our cytological study seem to give other evidence for separating the above mentioned populations at specific rank from the members of the *Vicia sativa* group. In the previous caryological investigations of this last group, in fact, the chromosome number most frequently found was 2n=12 (for instance in: COUTINHO, 1940, 1945; METTIN, 1958; METTIN and HANELT, 1964; HANELT and METTIN, 1966; YAMAMOTO, 1968, 1973, 1974; PLITMANN, 1973; HOLLINGS and STACE, 1974; KUTA, 1980), more rarely it was 2n=10. Moreover, always according to the majority of these authors, the marker chromosomes showed a satellite on the long arm instead of a nucleolar constriction on the short arm of a subtelocentric chromosome, or even completely lacked satellites, as in the case of the two Italian populations of *Vicia incisa*.

From the nomenclatural point of view, the description given by MAURI (1820) for *V. pimpinelloides* (and not by SEBASTIANI and MAURI,

1818, as indicated by PIGNATTI, 1982), though very accurate, was published later than M. BIEBERSTEIN's one (1819), therefore the correct name is *Vicia incisa* M. Bieb.

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