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## A new species of *Malus* (*Rosaceae, Maloideae*) from Sicily

### Abstract

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*Malus crescimannoii*, from the Nebrodi Mountains, N.W. Sicily, is described. This new species, belonging to *Malus* sect. *Malus* (*Rosaceae, Maloideae*), differs from *M. sylvestris* and *M. domestica*, both occurring in Sicily, by its smaller flowers, stamens shorter than styles, pome ovoid, usually longer than wide. *Malus crescimannoii* is frequent in the sub-montane belt of the Nebrodi mountains, mainly in the Flascio river basin near Floresta.

*Key words:* *Malus crescimannoii*, Nebrodi Mountains, Sicily, Flora.

### Introduction

*Malus* Mill. includes 35 woody species and some varieties (Schant 1981). In Europe 6 species occur, belonging to *Malus* sect. *Malus* and either sect. *Eriolobus* (Ser.) C. K. Schneider (Terpó 1968) or sect. *Florentinae* (Rehder) G. Z. Qian (Qian & al. 2008). In Italy, in addition to the cultivated forms of *M. domestica* (Borkh.) Borkh., *M. sylvestris* (L.) Mill. and *M. florentina* (Zuccagni) C. K. Schneider are found. The latter belonging to *M. sect. Eriolobus* or sect. *Florentinae*, is sometimes considered as a hybrid between *M. domestica* (*Pyrus malus* L.) and *Sorbus torminalis* Focke (Pignatti 1982), but has recently been demonstrated to be a non-hybrid species (Qian & al. 2008). From Sicily it is absent: only *M. sylvestris* or *M. domestica* are present on the island (Giardina & al. 2007).

Surveys of wild populations of woody *Rosaceae* related to the cultivated taxa led to the discovery of a population of *Malus* clearly different from all the known species of the European flora (cfr. Terpó 1968). This population is almost uniform in its characters. It consists of a fair number of individuals of different age. The taxonomic analysis, carried out taking into account the peculiarity and comparing the morphological characters, discriminated this studied population as a new species here described and named *Malus crescimannoii*.

***Malus crescimannoii* Raimondo, sp. nov.** (Fig. 1).

Arbor mediocris, ramis ascendentibus, spinosis. Folia ovato-lanceolata vel elliptica, longe petiolata. Inflorescentia corymbosa. Petala brevia, concava, praesertim extus roseo-purpurea. Stamina plus quam 15; filamenta stylis breviora; antherae luteolae. Styli 5. Pomum ovoideum, plerumque longe pedicellatum.

Floret Aprili-Majo; poma octobri-novembri maturant.

*Type:* Flascio river basin, SE of Floresta, 10.5.2007, *Raimondo* (holotype: PAL; isotypes: PAL, FI, G and B).

*Etymology:* dedicated to professor Francesco Giulio Crescimanno, eminent arboriculture scholar at the University of Palermo, generous and upright teacher.

Tree 5-10 m high; trunk covered with cracked bark. First-order branches spreading, sparsely thorny; the young ones thin, extended, with small conical buds of 4-5 × 2.5-3 mm; bud scales glabrous, ciliate at the margin. Leaf blade (40)45-55(60) × 15-35(40) mm, ovate-lanceolate to elliptical, sometimes ovate, acuminate, with cuneate base and margin serrate for most of its length, sometimes crenulate, hairy when young, more or less glabrous on both faces when mature; petiole (15)20-40(45) mm long, hairy. Flowers (2)3-6(7) in corymbs; pedicel 12-16 mm long, hairy. Sepals triangular, hairy, 2.3-3 × 6-8 mm, persistent. Corolla stellate; petals 11-14 × 7-10 mm, concave, more or less intensely pink to purple; claw pronounced, 1.5-2 mm long. Stamens filaments 5-7 mm long, glabrous; anthers light yellow. Styles 5, 7-9 mm long, hairy in the basal 1/2. Pomo 25-41 × 25-40 mm, globose to ovoid, never depressed, crowned with the prominent calyx and slightly umbilicate at the base, usually light yellow, sometimes partially pink when ripe; seed sub-triangular, 7-9 × 4-5 mm, brown or dark brown, 1-2 per loculus.

*Pollen:* lenticular, tricolporate (Fig. 3).

*Other specimens seen:* Nebrodi Mountains: left side of the Flascio river, 20.5.2008, *Raimondo* (PAL); Flascio river basin, SE of Floresta, 12.07.2008, *Raimondo* (PAL); Clearings in the beechwood of Sollazzo Verde, 14.07.2008, *Raimondo* (PAL); Portella Miraglia, near the shelter, 20.10.2008, *Raimondo* (fruits, PAL).

*Distribution, ecology and phenology:* So far, *Malus crescimannoii* is known only from Sicily. The population is confined to the sub-montane belt of the basin of the river Flascio, a tributary of the Alcantara river, in the municipalities of Floresta and Randazzo, on the northern slopes of Monte Soro (Fig. 4). In that area, numerous, often old individuals occur between 1000 and 1600 m a.s.l., in deciduous *Quercus* and *Fagus* woods. In the same context, other woody Rosaceae such as *Pyrus spinosa* L., *P. pyraster* (L.) Du Roi, *Sorbus terminalis* Crantz, *Crataegus monogyna* Jacq. and *Prunus spinosa* L. are common. In some localities, *Malus sylvestris* is found, too.

*Malus crescimannoii* flowers in April-May, fruits ripe in October-November.

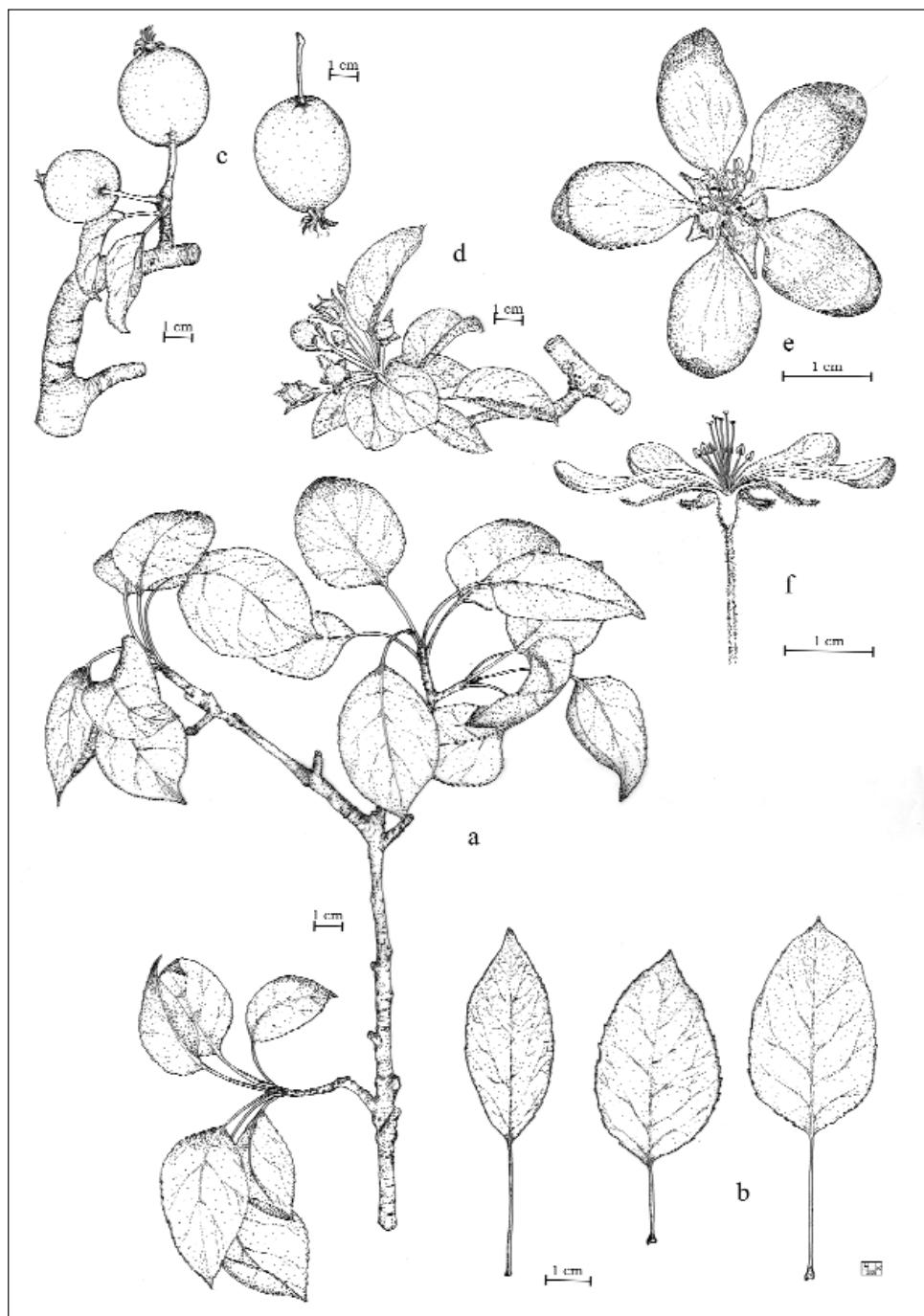


Fig. 1. *Malus crescimannoii*: **a**, branch; **b**, leaves; **c**, fruiting branchlet and fruit; **d**, flowering branchlet; **e**, flower (front view) **f**, flower (section).

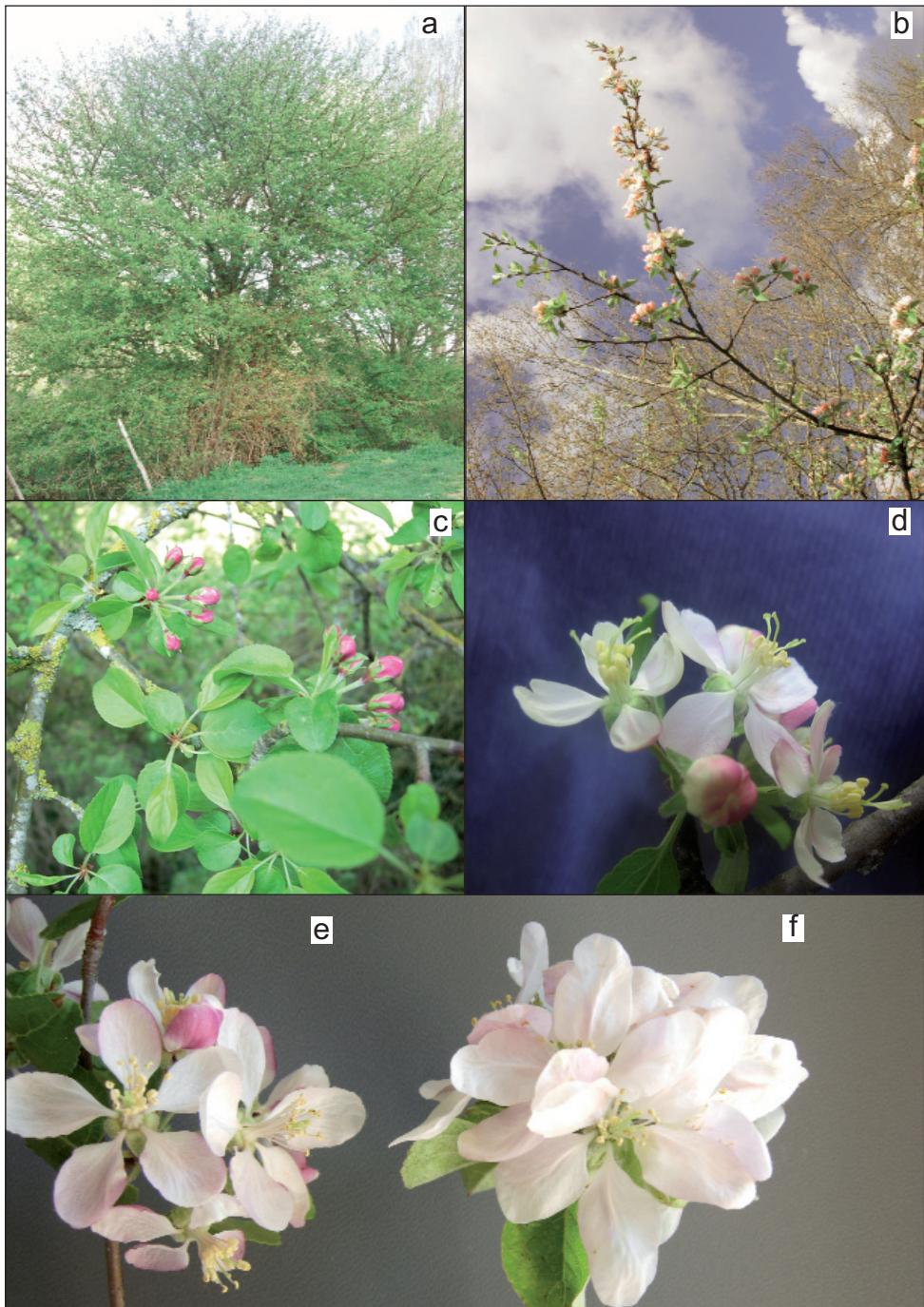


Fig. 2. *Malus crescimannoii*: **a**, whole plant; **b**, flowering branch; **c**, leaves; **d**, corymb; **e**, flowers. **f**, Flowers of *Malus sylvestris*.

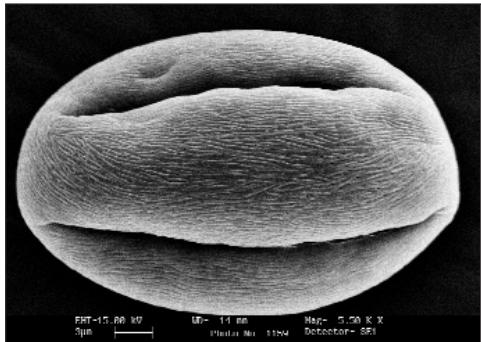


Fig. 3. *Malus crescimannoï*: SEM micrograph of pollen.

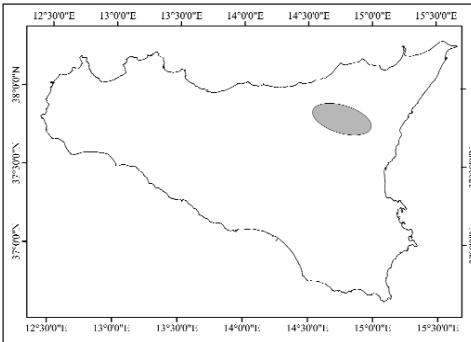


Fig. 4. Distribution of *Malus crescimannoï*.

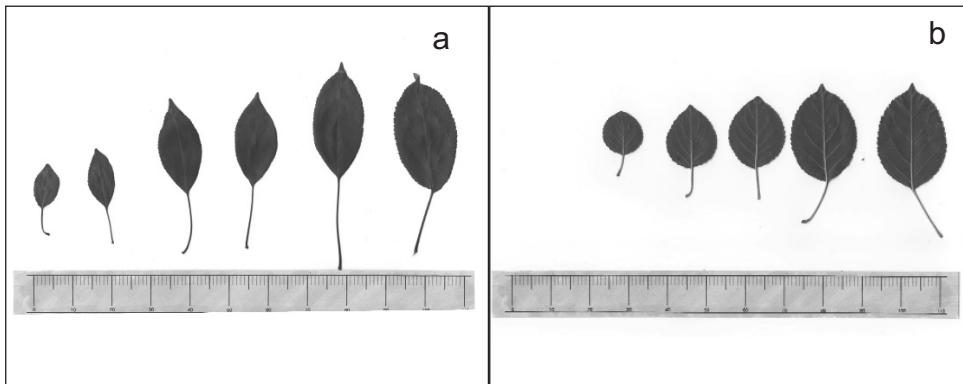


Fig. 5. Comparison between leaves of: **a**, *Malus crescimannoï*; **b**, *Malus sylvestris*.

**Taxonomy:** *Malus crescimannoï* belongs to *M. sect. Malus*, which section includes species with entire leaves, persistent calyx, and fruits without sclereids (Aedo & al. 1998). Distinctive characters are the ascending branches (Fig. 2a), the length and thickness of fertile branchelets (Fig. 2b), leaf shape and serration (Fig. 5), petiole length, size of flowers, particularly of petals – shorter and of different shape and colour (Figs. 2e, 2f) than in *M. sylvestris* and *M. domestica* – length of staminal filaments in relation to the styles (Fig. 2c). Furthermore, the pome is different in shape and size and has a longer stalk than in the two other *Malus* species mentioned.

## Conclusions

After the description of this new species, the genus *Malus* in Sicily, besides *M. domestica* of which several cultivars are known, is represented by two distinct wild taxa, both belonging to *M. sect. Malus*: *M. crescimannoï* and *M. sylvestris*.

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