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***Cerastium stenopetalum* Fenzl ex Grenier and *C. soleirolii* Ser. ex Duby
(*Caryophyllaceae*): biosystematic and taxonomic investigations**

Abstract

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C. soleirolii Duby s.l. has been studied by means of biosystematic analysis of dried and living specimens, in natural environments and under cultivation. Two species endemic of Corsica have been recognized: *C. stenopetalum* Grenier and *C. soleirolii* Duby. *C. stenopetalum* is widespread over 750 m, on screes and dry grasslands. It presents two ploidy levels, diploid and tetraploid. The latter is the most widespread. A dwarf morphotype occurring in the highest sites of the distribution area, has been distinguished as *C. stenopetalum* var. *nanum* Barberis & al. var. nov. *C. stenopetalum* seems to be related to *C. utriense* Barberis, an endemic species of Ligurian-Piedmontese Apennines. *C. soleirolii* is restricted to the summit area, over 1800 m, of Mount Renoso, Mount d'Oro and Mount Rotondo. It is a diploid relic entity. A detailed description, a new iconography and information on nomenclature, ecology and distribution are provided for both taxa.

Introduction

Perennial *Cerastium* populations from Corsica with rigid hairs are highly polymorphic and their taxonomic treatment is quite controversial. Dwarf, caespitose, compact specimens, strongly glandular-pubescent on stems and leaves, occurring on the top of some of the highest mountains in the central part of the isle, distinctly differ from glabrescent, loosely-matted specimens with longer internodes widespread from 750 m to mountain tops of Corsica.

Briquet (1910) ascribed individuals with generally linear, glabrescent leaves, large flowers, long acuminate sepals, large loose testa seeds, to *C. stenopetalum*; he ascribed dwarf, caespitose, glandular-pubescent individuals, with ovate-oblong to lanceolate leaves, and close testa seeds, to *C. thomasi* Ten.

For Buschmann (1938) the distinguishing characters of *C. soleirolii* are: bracts ciliate up to the apex; erect fruiting pedicels; oblong petals; straight and slender capsules; loose testa seeds with smooth surface. Moreover Buschmann (1938) distinguished two

subspecies: *C. soleirolii* subsp. *eusoleirolii* (small and caespitose plants) and *C. soleirolii* subsp. *stenopetalum* (luxuriant and loosely-matted plants).

Contandriopoulos (1962) considered *C. stenopetalum* as a very polymorphic species, endemic but widespread in Corsica from 1000 m to the mountain tops, loosely-matted, stoloniferous, with loose testa seeds, in which many local variants can be recognized. Contandriopoulos (1962) did not admit the presence of *C. thomasii* in Corsica.

Most recent Floras (Favarger 1973, Möschl 1982, Greuter & al. 1984, Gamisans & Jeanmonod 1993, Jalas 1993, Gamisans & Marzocchi 1996) consider *C. stenopetalum* as synonym of *C. soleirolii*.

A wide biosystematic investigation on numerous Corsican populations, has been carried out to evaluate their morphological, karyological and anatomical variation.

Analysis of populations

The following populations have been examined:

- A - Col de Vizzavona, 1040 m;
- B - Haut-Asco, 1230 m;
- C - " " 1380 m;
- D - " " 1470 m;
- E - " " 1570 m;
- F - " " 1720 m;
- G - Val Restonica, 1250 m;
- H - " " towards Lake Capitello, 1804 m;
- I - " " GR20 above Lake Capitello, 2035 m;
- J - " " Col de Rinoso, 2100 m;
- K - Mount d'Oro, NE slope, 1980 m;
- L - " " S-SE slope, 2190 m;
- M - " " S-SE slope (exp. E), 2200 m;
- N - Mount Renoso, at Lake Bastiani, 2095 m;
- O - " " above Lake Bastiani, 2150 m;
- P - " " above Lake Bastiani, 2200 m;
- Q - " " above Lake Bastiani, 2200 m;
- R - " " plateau above Lake Bastiani, 2220 m;
- S - " " beneath Punta Bacinellu, 2230 m;
- T - Col de Bavella, at the beginning of the path towards refuge Paliri, 1183 m;
- U - " " on the side of the path "piste di Alturaghja", 1200 m;
- V - Track beyond refuge Bucchinera above Quenza, 1550-1600 m;
- W - Track beyond refuge Bucchinera above Quenza, 1550-1600 m.

Morpho-biometric investigation

13 quantitative and 9 qualitative characters have been examined on 88 individuals. Further measurements regarding other quantitative characters, such as seeds size and capsules size, scarcely represented in the cited individuals, were taken into consideration. We considered the mean, the median, the mode, the minimum, the maximum and the

standard deviation values of the quantitative characters. We also calculated the ratios of: length/width of leaves of the uppermost node of flowering stems; length/width of leaves of axillary shoots; distance of the maximum width of leaves from the base/ length of leaves; length of capsule/ length of sepals; length of peduncle of inflorescence/ length of the uppermost internode.

On the basis of the habitus of plants, leaf shape of flowering stems and general hairiness we can distinguish two groups (Table 1):

Group I - It is quite variable in plants size, axillary shoots development, leaf width of axillary shoots; it includes the following populations: A, B, C, D, E, F, G, H, I, J, K, L, M, N, Q, S, T, U, V, W.

Group II - It is very homogeneous, and includes the following populations: O, P, R.

Upper leaves of flowering stems — In group I they are narrowly ovate to linear-ovate (the maximum width is in the first quarter from the base), mostly acute (often acuminate in population A), glabrous or glabrescent, shortly ciliate up to the apex, sometimes only at the base. In group II they are oblong-ovate to lanceolate (the maximum width is in the second quarter from the base), mostly obtuse, glandular-pubescent on both sides.

Hairiness — In group I hairs are few or many in the inflorescence and in the uppermost internode of flowering stems, disposed on one or two lines, always very few or absent in the lower internodes; glandular hairs are often present and abundant in the inflorescence, rarely present in the uppermost internode and leaves (anyway very few), always absent in the lower internodes. In group II glandular and eglandular hairs are abundant on stems (disposed all around) and on leaves; we only found one individual densely hairy but with very few glandular hairs.

Plant size — Plants of group I are loosely-matted, and quite variable in size; those of populations A, B, C, D, E, F, G, H, K, L, N, T, U, V, 7-20 cm; those of populations I, J, M, Q, S, W, 2-7 cm, with short internodes. Plants of group II are densely caespitose, 2.5-7.5 cm. Individuals of group II can be also distinguished from those of small size of group I, for the smaller size of inflorescence respecting to the general size of the plant.

Axillary shoots — Very short, generally shorter than the axillant leaf, with very narrow leaves, in population A; in the other populations of group I, either shorter or a little longer than the axillant leaf (1-2 cm, very rarely 5 cm). Axillary shoots generally quite short in populations of group II (they rarely reach 2 cm).

Lowest bracts — Ciliate up to the apex. More scarious, in group I; generally more hairy, in group II.

Capsules — Straight and erect on fruiting pedicels, variable in size inside each population. They are, on the average, larger in population A, and smaller in group II. They vary from a little shorter than to as long as sepals in group I; from as long as to a little longer than sepals in group II.

Table 1. Mean (x), median (me), minimum (min), maximum (max), standard deviation (s), number of measured individuals (n), of the most significant morphological characters in group I and group II (distance = distance of the maximum width from the base).

		GROUP I						GROUP II					
		x	me	min	max	s	n	x	me	min	max	s	n
Flowering stem	uppermost internode (mm)	9.0	8.0	1.0	28.0	5.4	74	4.3	4.0	2.0	6.5	2.0	16
	upper leaves												
	length (mm)	9.0	9.0	3.8	15.1	2.3	113	7.8	8.2	5.1	10.0	1.6	16
	width (mm)	1.9	1.8	0.7	4.0	0.6	113	2.3	2.3	1.3	3.7	0.7	16
	distance (mm)	1.6	1.6	0.4	3.0	0.5	48	2.5	2.5	2.0	3.2	0.4	9
	distance/length	5.3	5.1	3.4	10.0	1.3	48	2.9	2.5	2.0	4.4	0.9	9
	inflorescence												
	number of flowers	2.8	3.0	1.0	9.0	1.5	113	1.7	1.0	1.0	4.0	1.0	16
	peduncle (mm)	20.4	18.8	2.3	57.0	12.4	74	6.9	6.5	2.0	14.0	3.7	16
	lowest bracts (mm)	4.5	4.4	2.7	6.7	1.0	74	3.5	3.8	2.3	5.2	0.9	16
	sepals length (mm)	7.4	7.5	4.5	9.4	0.9	113	6.2	6.3	5.0	7.3	0.8	16
	capsule length (mm)	7.0	7.0	5.2	9.5	1.1	72	6.8	6.6	5.0	8.8	1.1	17
	capsule/sepal length	0.9	0.9	0.6	1.3	0.1	72	1.1	1.1	0.8	1.5	0.2	17
	seeds length (mm)	1.3	1.4	0.8	1.9	0.2	196	1.1	1.1	0.8	1.4	0.2	31

		Table 2. Differential characters among the examined taxa.		
		<i>C. stenopetalum</i>		<i>C. soleirolii</i>
		<i>var. stenopetalum</i>	<i>var. nanum</i>	
Inflorescence	length of peduncle (mm)	(8) - 15 - 45 - (57)	(2) - 5 - 17 - (22)	(2) - 3 - 11 - (14)
	lowest bracts length (mm)	(3.2) - 3.5 - 6 - (6.7)	(2.7) - 3 - 4.7 - (5.1)	(2.3) - 2.5 - 4.5 - (5.2)
Capsule (first flower)	length (mm)	(5.3) - 6 - 8 - (9.5)	(5.2) - 5.5 - 8 - (9.5)	(5) - 6 - 7 - (8.8)
Seed length (mm)		(0.9) - 1.3 - 1.5 - (1.9)	(0.8) - 1 - 1.7 - (1.9)	(0.8) - 1 - 1.3 - (1.4)
Flowering stem (above the upper axillary shoot)	number of internodes uppermost internode:	1 - 2 - (3)	(0) - 1 - (4)	1 - (3)
	length (mm) hairiness	(5) - 6 - 20 - (28) eglandular, rarely glandular, mostly reflexed, on two opposite sides or all around	(1) - 2 - 8 - (10) mostly eglandular, patent or reflexed, mostly on one or two opposite sides	2 - 7 glandular and eglandular, patent, all around
Axillary shoot	upper leaves:	narrowly ovate to linear-ovate, acute to acuminate, glabrous or glabrescent, shortly ciliate	narrowly ovate to linear-ovate, mostly acute, glabrous or glabrescent, shortly ciliate	oblong-ovate to lanceolate, mostly obtuse, glandular on both sides
	length (mm)	(6) - 7.5 - 12.5 - (15.1)	(3.8) - 4.5 - 9 - (10.4)	(5.1) - 6 - 9.5 - (10)
	length/width max width	(2.5) - 3.5 - 7.5 - (10) in the first quarter from the base	(2.3) - 3 - 6 - (7.4) in the first quarter from the base	(2.5) - 3 - 4.2 - (4.8) in the second quarter from the base
	length (mm) leaves:	(3.8) - 5 - 55 - (84)	(1) - 3 - 12 - (17.5)	(1) - 4 - 18 - (23)
	width (mm)	(0.3) - 0.7 - 2.1 - (3)	(0.2) - 0.5 - 1.5	(0.3) - 0.5 - 2 - (2.5)
	length/width	3.7 - 14.5 - (27.5)	(2.9) - 4 - 9.5 - (12.4)	3 - 7 - (14.6)
Chromosome number		2n = 36, 72	2n = 72	2n = 36

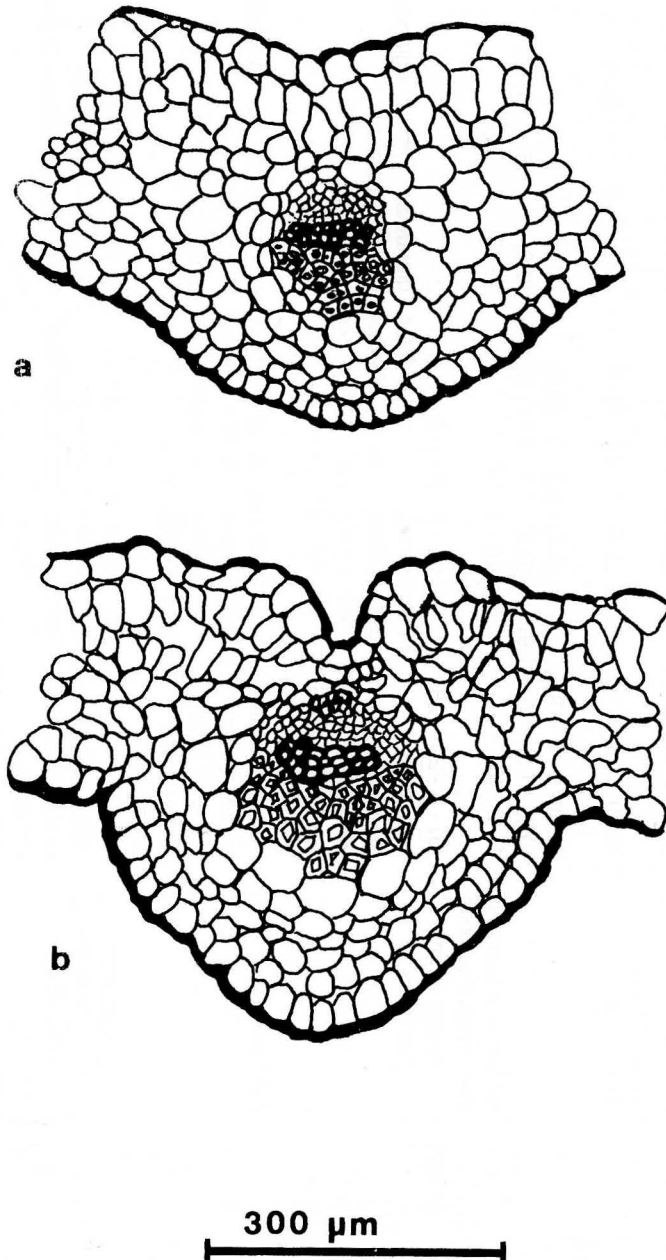


Fig. 1. Central area of cross section of leaf in *C. stenopetalum*: a, diploid; b, tetraploid.

Seeds — Larger with flat tubercles in group I; on the average smaller and with more prominent tubercles in group II.

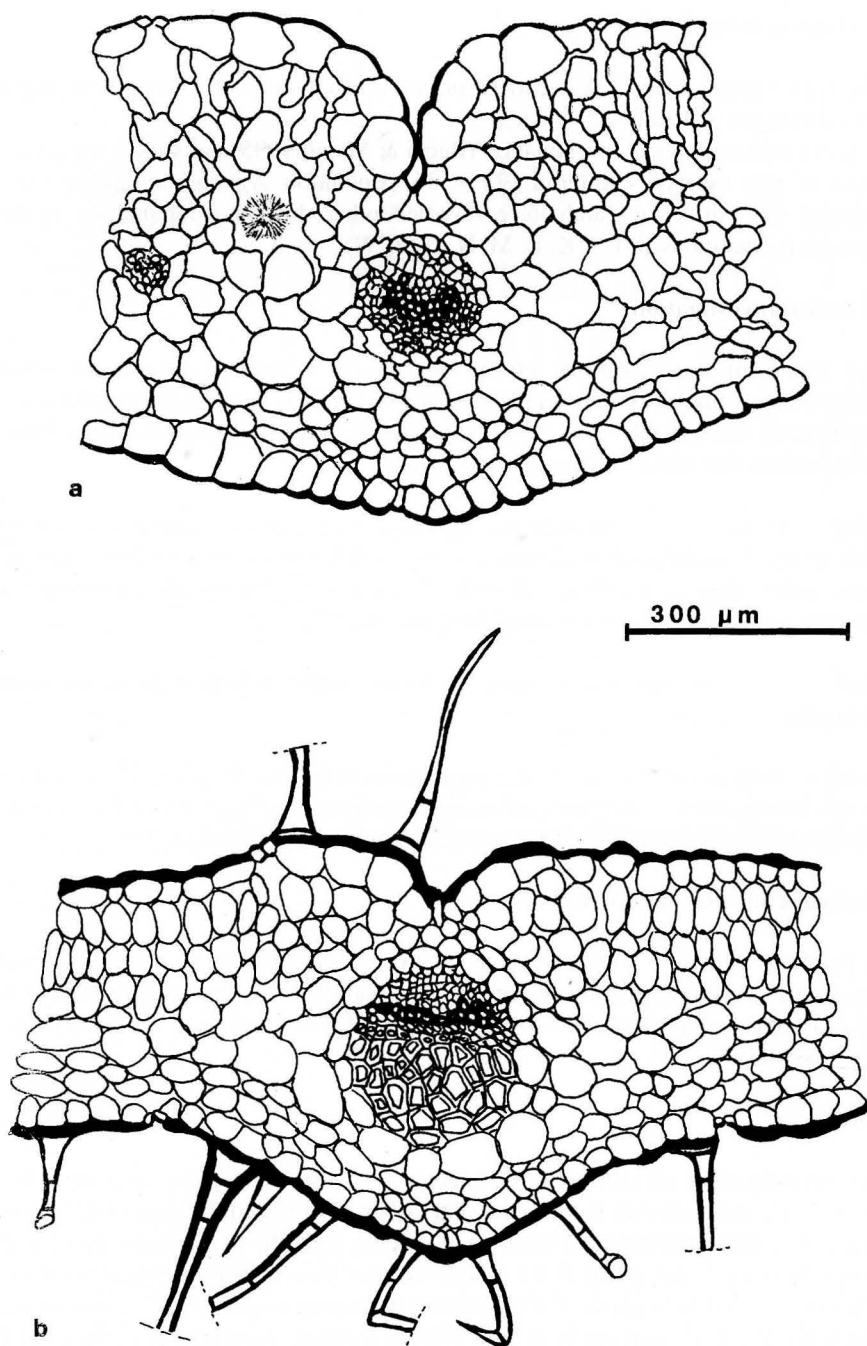


Fig. 2. Central area of cross section of leaf in **a**, *C. utriense* and **b**, *C. soleirolii*.

Karyological investigation

The karyological analysis was carried out on c-metaphases of root-tip cells stained by the usual Feulgen techniques.

A previous karyological investigation (Bechi & Miceli 1995) has shown the presence in Corsica of two cytotypes: diploid ($2n = 36$ population A), and tetraploid ($2n = 72$ population D). Further research have revealed other diploids (populations P, R), and tetraploids (populations H, I, J, K, L, M, N, U, V, W).

Anatomical investigation

We examined cross sections of the central rib of leaves (first node below the inflorescence) of flowering stems and of the seeds, which have already proved to be useful for systematic use (Miceli & al. 1997). Sections were stained with toluidine blue, zinc chlorine iodide, Delafield's haematoxylin, phloroglucin.

Leaf — It presents a sclerenchyma cap associated with the central vascular bundle. Within group I, population A differs for the midrib not much prominent and the flat adaxial surface (Fig. 1a, b). Group II differs from group I, for its thicker mesophyll with larger cells and its palisade tissue often three-layered (Fig. 2b).

Stem — It has a sclerenchymatous two-three-layered pericycle in all the examined populations.

Seed — With loose testa in all the populations (Fig. 3c). In group II the testa is less evidently loose, and the tubercles are more prominent (Fig. 3a, b). For this reason Briquet (1910) interpreted them as close testa seeds, belonging to *C. thomasii*.

Ecological-chorological investigation

Populations of group I are distributed between 1000 and 2250 m, in open sites, on screes, stony grasslands and juniper scrubs. Populations of group II are limited to the top and to the upper slopes (over 2000 m) of Mount Renoso, on rock crevices, screes and stony grasslands.

Results

Our investigations allowed us to distinguish two systematic groups: Group I in which the type of *C. stenopetalum* is included; and Group II in which the type of *C. soleirolii* is included. It seems appropriate to separate at specific level the two groups since the diploid cytotype of group I and group II are clearly distinct from a morphological point of view, and the small sized individuals of high altitude belonging to group I (*C. stenopetalum* var. *nanum*), are tetraploid and easily distinguishable from the components of group II (Table 2). No intermediates between the two species have been observed either in the field or among herbarium specimens.

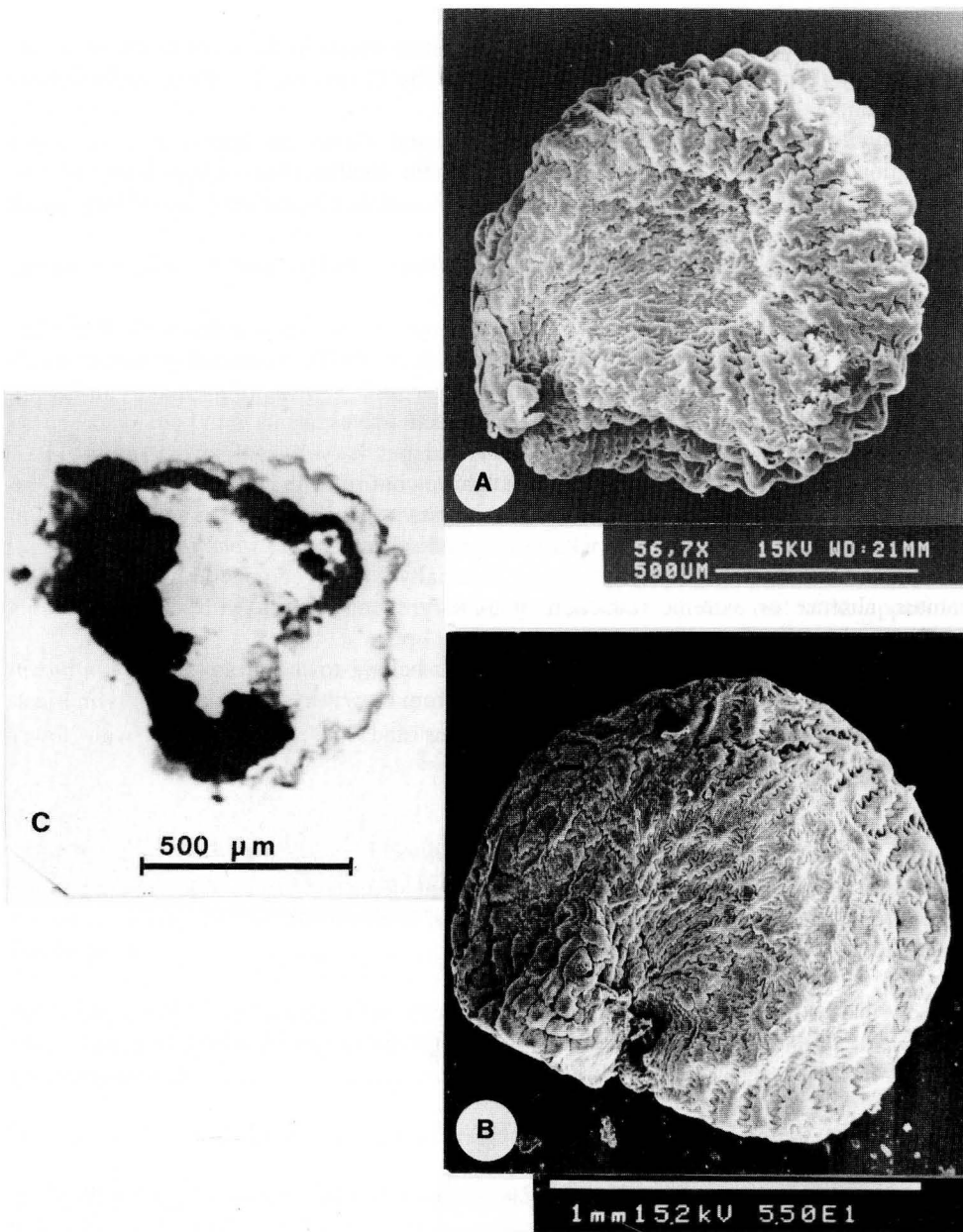


Fig. 3. Microphotograph of the seed in **a**, *C. soleirolii*, and **b**, in *C. stenopetalum*; **c**, section of loose testa seed in *C. stenopetalum*.

C. stenopetalum has got two cytotypes ($2n = 36$ and $2n = 72$, Fig. 5) probably through autopolyploidy. Diploids have been found in one population (A). Tetraploids are more diffused and differ from diploids in leaf size and capsule length (see Tab. 2 in Barberis &

al. 1995). *C. stenopetalum* occurs in similar habitats which in the Continental areas are occupied by *C. arvense* L. var. *strictum* Koch or by *C. arvense* L. subsp. *suffruticosum* (L.) Nyman.

C. soleirolii is diploid ($2n = 36$, Fig. 5) and shows an apparently low seeds production. We found *C. soleirolii* only on Mount Renoso, but on the basis of few specimens (G, K, P) it seems also present on Mount d'Oro and on Mount Rotondo. It seems to be a relic entity.

C. thomasii Ten. - endemic of Central Apennines - differs from *C. soleirolii* in the indumentum, the kind of capsule and seed.

C. soleirolii s.l. has been related with *C. utriense*, an endemic species of the Ligurian-Piedmontese Apennines (Barberis 1988, Barberis & al. 1995). As a result of this research we think that *C. utriense* is morphologically similar to *C. stenopetalum* mainly in having large loose testa seeds with a flat surface, glabrescent leaves, stems with hairs disposed on lines or alternate sides at the nodes. We carried out karyological investigation on *C. utriense* (Liguria, Mount Dente, 950 m) which have confirmed the previous count ($2n = 36$ in Barberis 1988), and morpho-anatomical analyses which have shown several common aspects of the Ligurian population with the diploid cytotype of *C. stenopetalum* (Fig. 2a). *C. utriense* differs from *C. stenopetalum* especially for larger general size, caespitose habitus, absence or extreme reduction of axillary shoots, bracts with larger scarious margins and smaller flowers.

C. stenopetalum, *C. soleirolii* and *C. utriense* belong to the group of *C. banaticum* (Rochel) Heuff. (Boşcaiu & al. 1996) and differ from *C. arvense* s.l. in having cylindrical, straight capsules, erect fruiting pedicels, larger and loose testa seeds, with lower tubercules.

Key to the species

Caespitose plants, with densely glandular-pubescent stems and leaves at least as far as the third internode (from the top); maximum width of leaves in the second quarter from the base *C. soleirolii*

Loosely-matted plants, with pubescent, sometimes also glandular, inflorescence, but glabrescent from the first internode (from the top) downwards; leaves ciliate; maximum width of leaves in the first quarter from the base *C. stenopetalum*

Cerastium stenopetalum Fenzl ex Grenier in Grenier et Godron, Fl. France 1: 272.1847.

Synonyms \equiv *Cerastium arvense* L. subsp. *stenopetalum* (Fenzl) Arcang., Comp. Fl. Ital.: 99 (1882) \equiv *C. arvense* L. var. *stenopetalum* (Fenzl) Fiori, Fiori & Paoletti, Fl. Anal. Ital. 1: 353 (1898) \equiv *C. soleirolii* Ser. subsp. *stenopetalum* (Fenzl) Buschmann, Repert. Spec. Nov. Regni Veg. 43: 143 (1938) = *C. stenopetalum* Fenzl var. *oligadenum* Briquet, Ann. Cons. Jard. Bot. Genève: 122 (1905) = *C. stenopetalum* Fenzl var. *polyadenum* Briquet, Ann. Cons. Jard. Bot. Genève: 122 (1905) – *C. thomasii* sensu Briquet, Ann. Cons. Jard. Bot. Genève: 83 (1901) non Ten., *quoad pl. ex Monte Cinto* – *C. soleirolii* sensu Auct. plur. p.p., non Duby.

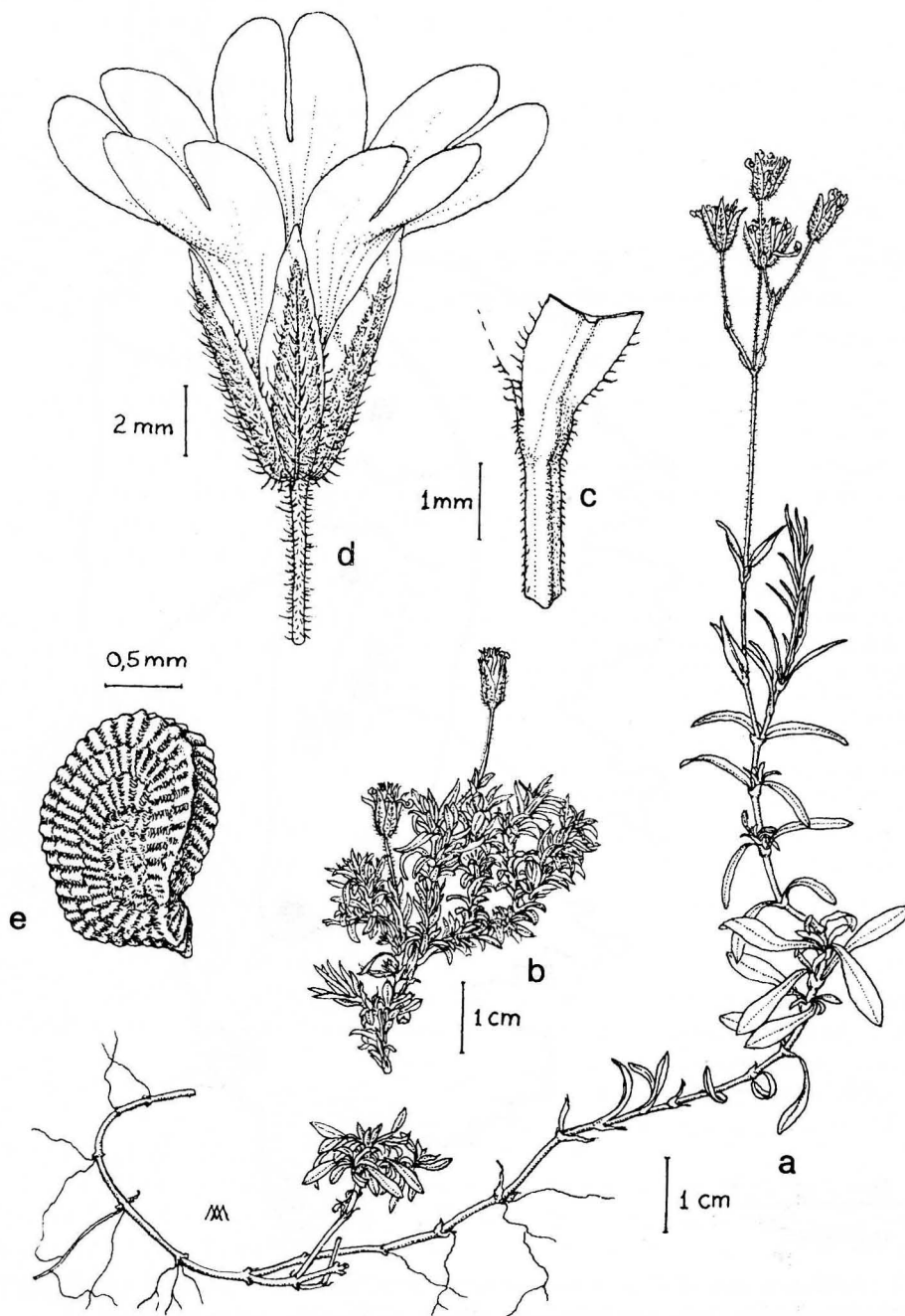


Fig. 4. *C. stenopetalum*: a, var. *stenopetalum*; b, var. *nanum*; c, uppermost node; d, flower; e, seed.

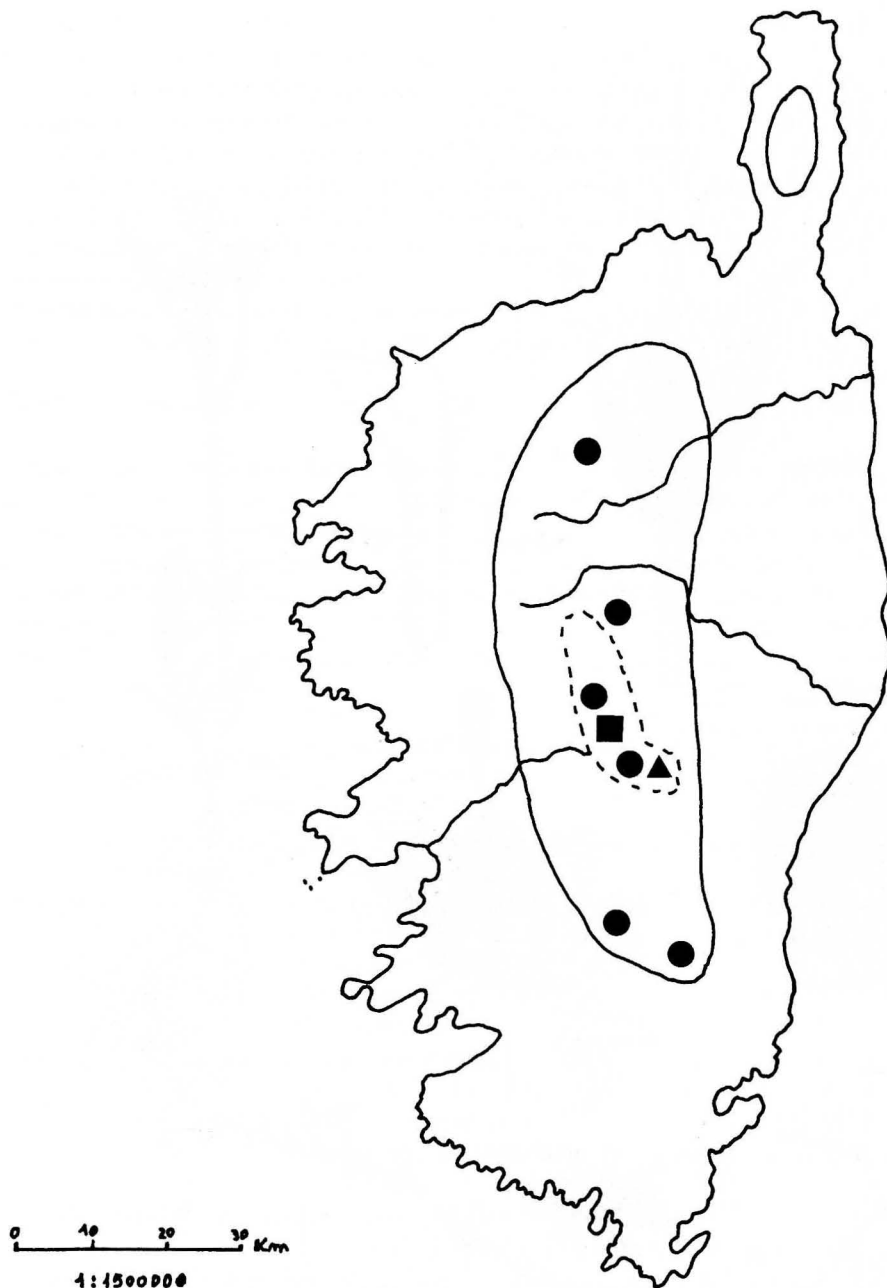


Fig. 5. Distribution area of *C. stenopetalum* (continuous line) and *C. soleirolii* (broken line). Chromosome counts in *C. stenopetalum* ($2n = 36$ ●; $2n = 72$ ■) and *C. soleirolii* ($2n = 36$).

Infraspecific variation

The morpho-biometric analysis has shown a great morphological variability in *C. stenopetalum*. Briquet (1905) recognized two varieties on the basis of hairiness: *C. stenopetalum* var. *polyadenum*: individuals densely glandular in the inflorescence; *C. stenopetalum* var. *oligadenum*: individuals pubescent or with very few glandular hairs in the inflorescence. Since there can be both glandular and eglandular individuals in the same population, we don't think that the indumentum variability in *C. stenopetalum* should be deemed of any taxonomic value as noted by Contandriopoulos (1962). On the contrary, we think it is useful to distinguish populations of dwarf individuals, occurring in the highest sites of the distribution area, as a new variety.

var. *stenopetalum*

Description — Perennial, 7-16 (-22) cm; stems above with eglandular hairs generally disposed on two lines alternating at the nodes, towards the basal part, glabrous. Leaves (8-) 15-45 (-57) mm, narrowly ovate to linear-triangular, acuminate or acute, mostly glabrous, ciliate at margins. Inflorescence pubescent, glandular-pubescent. Flowers (1) 3 (9); bracts lanceolate, acute, scarious at the apex which is usually ciliate; sepals (4.5-) 6-9 (-9.5) mm, acute, with long scarious apex; petals (8-) 10-12.5 (-16.2) mm. Capsules (5-) 6-8 (-9.5) mm, cylindrical, straight, erect on the fruiting pedicels. Seeds (0.8-) 1.3-1.7 (-1.9) mm, testa loose, with flat surface.

Type — (Neotype) here designated: "Soleirol, herb. cors./9[?]79/ *Cerastium strictum* ?/ mont grosso / S" (Herb. Grenier, P).

Phenology — It flowers in June-August, it bears fruits in July-September.

Iconography — Coste (1901) 1:219; Briquet (1910) Fig. 2:D, Fig. 3; Pignatti (1982) n° 480 sub *C. soleirolii*; Fig. 4a, c, d, e (A. Maury, Florence).

Chromosome number — $2n = 36$ and $2n = 72$.

Ecology — In open sites, on screes, stony grasslands and juniper scrubs, from 750 m to the mountain tops, on silicate rocks.

Distribution area — Endemic of mountains of Corsica (Fig. 5).

Specimens seen — Mont Grosso près Calvi, sine data, *Soleirol*, 1002 (herb. Webb FI, P); Mont Grosso, sine data, *Soleirol* (herb. Webb FI, K, P); M. Cinto, 1800 m, sine data, *sine coll.* (WAG); M. Cinto, 2400 m, sine data, *sine coll.* (WAG); Bastelica montagnes, 28 Jun 18[?], *Revelière* (BM); Canbon de Serra à la Bocca della Vaccia, 21 Jul 18[?], *Revelière* (BM); e montibus Corsicae, 1821, *Salzmann* (HEL); Au sommet du Monte Rotundo, Sep 1863, *sine coll.* (BM); Corte, 1867, *Kesselmeyer* (G); Corse: rocailles des montagnes de Corte, de 1000 à 2000 m, 5 Jun 1877, *Ch. Burnouf* (LY); Monte Felce, près Corte, 31 May 1879, *sine coll.* (FI); Monte Asto, rochers et lieux pierreux des montagnes,

24 Jun 1881, A. Chabert (FI); Corse, Gorges de la Restonica, 20 May 1896, Foucaud (LY); rochers de Venaco, 25 May 1896, Foucaud (LY); Corse, Mont Rotondo, 18 Jul 1898, Foucaud (LY); Monte Rotondo, près de la bergerie du Timozzo, Jul 1898, Mandon (G, LY); ad vias in saxosis Cristinaccia 850 m, 22 May 1905, M. Spencer (FI); Foce di Vizzavona env. 1300 m, 18 Jun 1906, Gysperger [?] (LY); in arenosis Col di Vergio Insula Corsica, 1460 m, 6 Jun 1906, M. Spencer (LY); Corse: Mte. San Pietro, graviers, vers 1500 m, 6 Jul 1906, de Litardière (LY); Environ de Calvi, entre la bergerie de Spasimata et la cime de Mufrella, rocailles, silice, 1800-2000 m, 12 Jul 1906, E. Burnat, J. Briquet, A. Saint-Yves, F. Cavillier, E. Abrezol (FI); Env. de Calvi, bergerie de Spasimata au dessus de Bonifatto, rocailles, silices, 1400 m, 12 Jul 1906, E. Burnat, J. Briquet, A. Saint-Yves, F. Cavillier, E. Abrezol (G); environ de Vizzavona, vallon de l'Anghione, rocailles, silice, 1100-1200 m, 21 Jul 1906, E. Burnat, J. Briquet, A. Saint-Yves, F. Cavillier, E. Abrezol (G); Paglia Orba, rocailles, silice, 2300 m, 9 Aug 1906, E. Burnat, J. Briquet, A. Saint-Yves, F. Cavillier, E. Abrezol (FI); Vetta di Monte d'Oro, 24 Jul 1907, U. Martelli (FI); Corse: sommet du Mte. Rotondo (2625 m), 13 Jun 1908, de Litardière (LY); Monte Padro, rochers, silice, 2300 m, 4 Jul 1908, J. Briquet (G); Corse: sommet du Mte. Grosso (1941 m), 21 Jul 1908, de Litardière (LY); Corse: rocailles au Col de Salto (1350 m), 26 Jul 1908, de Litardière (LY); Corse Punta Artica, gravier vers 2100 m (Niolo), Aug 1908, de Litardière (LY); forêt de Valdaniello, 1130 m, 10 Jul 1911, [?] (FI); Corsica, Valdaniello, 1000 m, Jun 1912, Duffour (LY); Corsica, Lozzi, 1350 m, Jun 1912, Cousturier (LY); Corsica, Casamiccioli, 1200 m, Jun 1912, Cousturier (LY) [sub forma umbrosa]; Corsica, Gorges S. Regina, 750 m, granito Jun 1912, Cousturier (LY); Vizzavona in saxosis, 1200 m, 6 Apr 1912, M. Spencer (PAD); Corse colline à l'ouest de Lozzi, 1300 m, 1 Jun 1912, Cousturier (LY); Corsica, monte d'Oro, 2600 m, Jul 1912, Cousturier (LY); Corte, fentes des rochers granitiques, 1200 m, Jun 1929, G. Desplantes (FI); Gemeinde Sisco, aufstieg zum San Giovanni Pass, Geröll auf den Ost-Abhängen von Cima di Cagnolo, in den Nischen des Gerölls, 800-850 m, 23 May 1973, G. Bocquet, H. Seitter, P. Blaser, M. Dreyfuss, G. Laflamme, P. Rachle (BM); Haut-Asco, 1230 m, 9 Jul 1987, De Giorgis (GE); Haut-Asco, 1380 m, 9 Jul 1987, Barberis, Paola (GE); Haut-Asco, 1470 m, 9 Jul 1987, Barberis, Paola (GE); Haut-Asco, 1570 m, 9 Jul 1987, Barberis, Paola (GE); Haut-Asco, 1720 m, 9 Jul 1987, Barberis, Paola (GE); Col de Vizzavona, 1040 m, 11 Jul 1987, Barberis, Paola (GE); Val Restonica, 1250 m, Barberis, Paola, 12 Jul 1987 (GE); Val Restonica, towards Lake Capitello, 1804 m, 19 Aug 1994, Barberis, Bechi, Cesati (GE); Mount d'Oro, NE slope, 1980 m, 21 Aug 1994, Barberis, Bechi, Cesati (GE); Mount d'Oro, S-SE slope, 2190 m, 21 Aug 1994, Barberis, Bechi, Cesati (GE); Mount Renoso, at Lake Bastiani, 2095 m, 23 Aug 1994, Barberis, Bechi, Calderisi, Cesati, Miceli (GE); Col de Bavella, at the beginning of the path towards refuge Paliri, 1183 m, 25 Aug 1994, Calderisi, Miceli (GE); Col de Bavella, on the sides of the path "piste di Alturaghja", 1200 m, 25 Aug 1994, Calderisi, Miceli (GE); track beyond refuge Bucchinera above Quenza, 1550-1600 m, 25 Aug 1994, Barberis, Bechi, Cesati (GE).

var. *nanum* Barberis, Bechi & Miceli, **var. nov.**

Diagnosis — *C. stenopetalum* var. *nanum*, a forma typica differt, internodiis abbreviatis, foliis brevioribus atque floribus paucioribus.

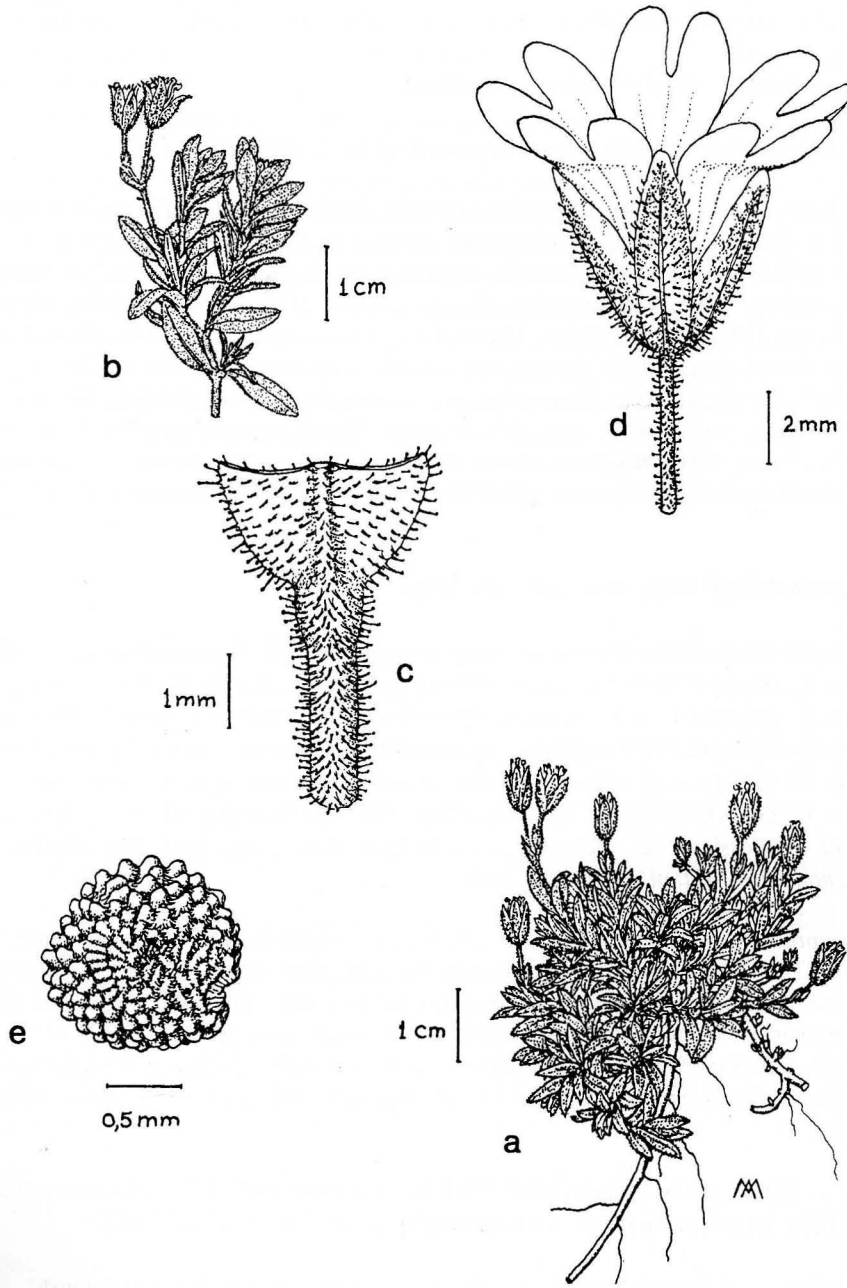


Fig. 6. *C. soleirolii*: a, entire plant; b, branch with capsules; c, uppermost node; d, flower; e, seed.

Typus — Holotypus: "Corse, track beyond refuge Bucchinera, above Quenza, 1550-1600 m, 25 Aug 1994, *Barberis, Bechi, Cesati*" (GE). Isotypus in FI.

Iconography — Fig. 4b (A. Maury, Florence).

Distribution area — Mountains of Corsica (Fig. 5).

Specimens seen — Corse, Cagnone, sine data, *Jordan* (FI); Corse, Monte Renoso, 7 Aug 1878, *Reverchon*, n° 37 (LY); Corse: sommet du M.te Rotondo, 2625 m, 13 Aug 1908, *R. de Litardièrè* (LY); rochers du sommet du mont Rotondo, 2625 m, 19 Aug 1908 *R. de Litardièrè* (LY); Val Restonica, Col de Rinoso, 2100 m, 19 Aug 1994, *Barberis, Bechi, Cesati* (GE); Val Restonica, GR20 above Lake Capitello, 2035 m, 19 Aug 1994, *Barberis, Bechi, Cesati* (GE); Mount d'Oro, S-SE slope (exp. E), 2200 m, 21 Aug 1994 *Barberis, Bechi, Cesati* (GE); Mount Renoso, above Lake Bastiani, 2200 m, 23 Aug 1994, *Barberis, Bechi, Calderisi, Cesati, Miceli* (GE); Mount Renoso, beneath P. Bacinellu, 2230 m, 23 Aug 1994, *Barberis, Bechi, Calderisi, Cesati, Miceli* (GE); Track beyond refuge Bucchinera above Quenza, 1550-1600 m, 25 Aug 1994, *Barberis, Bechi, Cesati* (GE).

Cerastium soleirolii Duby, Bot. Gall. : 87.1828.

Synonyms ≡ *Cerastium arvense* L. subsp. *soleirolii* (Duby) Arcang., Comp. fl. ital.: 99 (1882) ≡ *C. thomasi* Ten. var. *soleirolii* (Duby) Arcang., Comp. fl. ital. (2° ed.) : 318 (1894) ≡ *C. arvense* L. var. *thomasi* (Ten.) Fiori fo. *soleirolii* (Duby) Fiori, Fiori & Paoletti, Fl. Anal. Ital. 1: 354 (1898) = *C. mutabile alpinum* α *corsicum* Grenier, Monogr. Cerastio: 71 (1841) = *C. alpinum* L. var. *glutinosum* Koch, Syn. fl. germ. helv.: 135 (1843) – *C. arvense* L. subsp. *thomasi* (Ten.) Rouy & Foucaud, Fl. Fr. 3: 204 (1896) *quoad pl. ex Corsica* – *C. thomasi sensu* Briquet, Ann. Cons. Jard. Bot. Genève : 83 (1901), *non* Ten., *excl. pl. ex Monte Cinto*.

Description — Perennial, (2.5-) 4.5 (-7.5) cm, caespitose; stem glandular-pubescent. Leaves (5.1-) 6-9.5 (-10) mm, oblong-ovate to lanceolate, the basal ones oblanceolate-spathulate, glandular-pubescent. Inflorescence 1-3 flowered, glandular-pubescent. Bracts with very narrow scarious margins, or herbaceous, ciliate up to the apex. Sepals (5-)6(-7.3) mm, ovate. Petals ca. 9-10 mm. Capsules (5-) 6-8 (-8.8) mm, cylindrical, straight, erect on the fruiting pedicels. Seeds (0.8-) 1-1.3 (-1.4) mm, testa not so obviously loose, with low tubercles.

Type — (Neotype) here designated: "110 Soleirol dedit Xbr 1826/ *Cerastium corsicum* Soleir./ Près des neiges du mont/ d'oro au mois de juillet./ 1820 (Corse)" (K).

Phenology — It flowers from the end of July to August. It bears fruits in August.

Iconography — Briquet (1910) Fig. 2:C; Fig. 6 (A. Maury, Florence).

Chromosome number — $2n = 36$.

Ecology — On rock crevices, screes and stony slopes, on silicate rocks, over 1800 m.

Distribution area — Endemic of some mountains of Corsica: Mount d'Oro, Mount Renoso, Mount Rotondo (Fig. 5). While many specimens have been collected by different collectors from Mount Renoso (BM, FI, G, G-BU, K, LY, P, PAD, PI), only three specimens from Mount d'Oro labelled under n° 110 (G, K, P), and one specimen from Mount Rotondo labelled under n° 110 bis (G) have been traced.

Specimens seen — Mont d'Oro, sine data, *Soleirol*, n° 110 (G, P); Monte Rotondo, sine data, *Soleirol*, n° 110 bis (G); H. in montibus Corsicae, sine data, *Soleirol* (BM, BR, herb. Webb FI, P, WAG); Monte Renoso, graviers des Crêtes, sine data, *E. Burnat*, *J. Briquet*, *F. Cavillier*, n° 407 (G-BU); Monte Renoso, sine data, *sine coll.* (TO); Monte Renoso, sine data, *Requien* (PAD); Bastelica, sommet du Mte. Renoso, 17 Jun 1818, *Revelière* (BM); Corse, près des neiges du mont d'oro, Jul 1820, *sine coll.* n° 110 (K); ad nives aeternus [?], 1824, *Soleirol* (TO); Monte Renoso, Jul 1847, *sine coll.* (FI); Monte Renoso, Jul 1847, *M. Requien* (K, LY, P); Sommet du Monte Renoso, 2200 m, 6 Aug 1867, *P. Mabile*, n° 217 (BM, G-BU, LY, PI); Monte Renoso, 2200 m, 1 Aug 1869, *O. Debeaux* (G-BU); Corse, Bastelica, Mont Renoso, 7 Aug 1878, *E. Reverchon*, n° 37 (BM, FI, G, LY); Monte Renoso, 1880, *Reverchon* (BM); Corse: sommet du Mte Renoso, 2357 m, 16 Jul 1907, *de Litardière* (LY); Monte Renoso, 22 Jul 1914, *Burdon* (BM); Mount Renoso, above Lake Bastiani, 2150 m, 23 Aug 1994, *Barberis*, *Bechi*, *Calderisi*, *Cesati*, *Miceli* (GE); Mount Renoso, above Lake Bastiani, 2200 m, 23 Aug 1994, *Barberis*, *Bechi*, *Calderisi*, *Cesati*, *Miceli* (GE); Mount Renoso, plateau above Lake Bastiani, 2220 m, 23 Aug 1994, *Barberis*, *Bechi*, *Calderisi*, *Cesati*, *Miceli* (GE).

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