

**ALLIUM SAMOTHRACICUM TZANOUD., STRID & KIT TAN, A
NEW SPECIES FROM THE NORTH AEGEAN AREA, GREECE**

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Allium samothracicum Tzanoudakis *et al.*, belonging to *Allium* sect. *Codonoprasum* Reichenb., was collected from the island of Samothrace in the North Aegean area and described as a species new to science. The main morphological characters of the new taxon together with that of its closest relatives are tabulated and its taxonomic affinities discussed. Cytological data and an illustration are also provided.

Key words: *Allium*, Samothrace, new species.

Tzanoudakis, D. & Tan, K. (2000). *Allium samothracicum* Tzanoud., Strid & Kit Tan, uma espécie nova para o Norte da Aegéia, Grécia. *Portugaliae Acta Biol.* **19**: 355-360.

Allium samothracicum Tzanoudakis *et al.*, pertencendo a *Allium* sect. *Codonoprasum* Reichenb., foi colhido na ilha de Samotrácia na Região Egeia Norte e foi descrito como uma espécie nova para a ciência. Os principais caracteres morfológicos do novo taxon assim como o das espécies mais próximas são comparados e as suas afinidades são discutidas. Dados citológicos e uma ilustração também são fornecidos.

Palavras chave: *Allium*, Samotrácia, espécie nova.

INTRODUCTION

The island of Samothrace (178 sq km) is situated in the North Aegean area, c. 45 km south-southwest of Alexandroupolis and although served from there by a daily ferry is not frequently visited. The relative inaccessibility, absence of roads above an altitude of c. 300 m and lack of sandy beaches have also prevented the development of mass tourism and contributed to a decreasing

population (c. 3000). The entire southeastern part of the island is uninhabited, with sheer cliffs dropping into the sea and the Feggari massif (1611 m) dominates, looming dark over the narrow coastal plains. However, Samothraki occupies an interesting and unique geographical and geomorphological position and certainly deserves more floristic attention. During the framework of a long-extended floristic exploration project on the Aegean islands Samothraki was visited by the first author in July 1989. More recent floristic investigation of the island was carried out by both authors who visited the island jointly or individually, several times during the past three years (1997, 1998 and 1999), very often accompanied by other colleagues or post-graduate students from Patras and/or Copenhagen.

DESCRIPTION OF SPECIES

Allium samothracicum Tzanoud., Strid & Kit Tan, **sp. nov.** (Figs. 1 & 2).

Type: Greece. Nomos Evrou, eparchia Samothrace (North Aegean Islands): Samothrace Chora, c. 250 m, Tzanoudakis 99/25 (holo. UPA; iso. C).

Planta perennis. Bulbus ovoideus vel late ovoideus, c. 1.5 (-1.8) x 1.2 (-1.5) cm. Tunicis externis papyrascentibus fuscis vel nigrescens in segmentis versus solutis apice productis, internis membranaceis, integris, albidis. Scapus solitarius, rigidulus, (6-)10-15(-20) cm altus, \pm flexuosus, vagine foliorum glabris per 1/3-1/2 longitudinis tectus. Folia 4-5 filiformis, sursum canaliculata, glabra, 70-100 mm longa et 1-1.5 mm lata. Spatha bivalvis persistens; valvis liberis, oppositis inaequalibus, basi oblonga in caudam lineatum elongatum; valva major inflorescentia longior vel equilonga, valva minor inflorescentia sensim breviora. Inflorescentia fastigiata vel hemisphaerica pauciflora vel multiflora, 15-25 flores (40-50 flores in cultis). Pedicelli inaequales, (5-)7-10(-15) mm longi. Perigonium campanulatum vel subcylindricum, tepala \pm equilonga, alba, venis medianis bruneis, 4-4.5(-5) mm longa et 2-2.2 mm lata, externa obovoidea vel elliptica, apice obtuse vel truncata, interna obovoidea, apice \pm obtusa. Stamina \pm inclusa, filamentis simplicibus, inferne cum tepalis per c. 1.2 mm in annulus connata. Antheris luteolis. Ovarium viridis, ovoideus, 3.7 x 2.1 mm, 1.5-2-plo longium quam latius, superne papillosum. Stylus albus, 0.5-1.5 mm longum. Capsula trivalvis. *Floret Junio-Julio.*

Numerus chromosomatum: $2n = 16$.

Additional material examined:

Greece. Nomos Evrou, eparchia Samothrakis: island of Samothraki, limestone rocks of castle near Chora, c. 250 m, 17 July 1989, Tzanoudakis & Georgiadis 10205 (UPA); id., between Kamariotisa and Chora, 17 July 1989, Tzanoudakis & Georgiadis 8778 (UPA); id., near Paleopolis, 0-50 m, 17 July 1989, Tzanoudakis & Georgiadis 10338 (UPA) and 16 July 1999, Tzanoudakis 12343 (UPA).

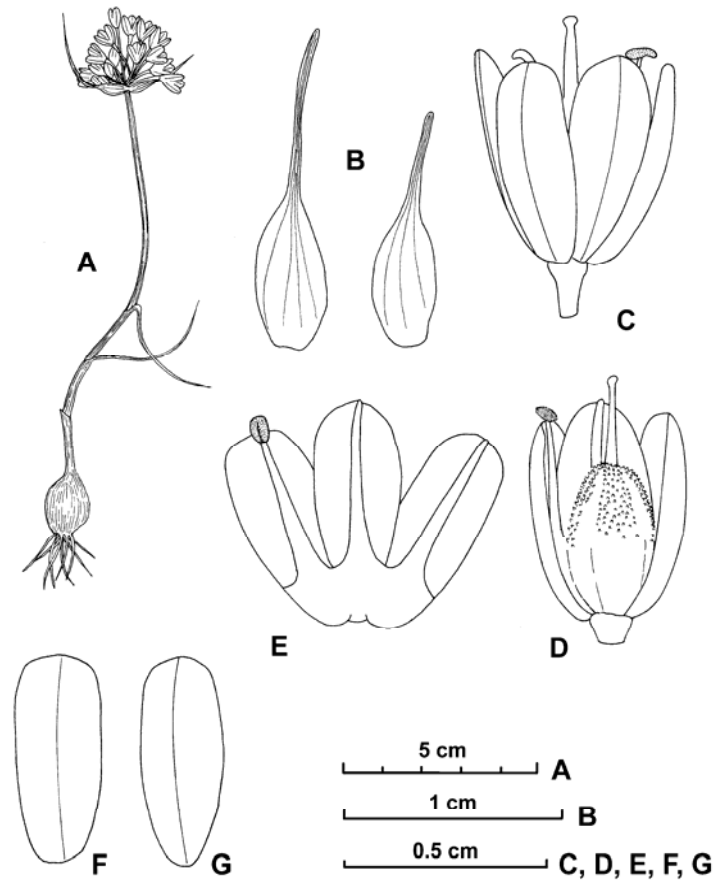


Fig. 1. *Allium samothracicum*. A, habit B, spathe-valves C, flower D & E, inner view of perianth showing ovary and filaments F & G, outer view of outer and inner perianth segments respectively



Fig. 2. Karyogram from plant at *locus classicus*. Note absence of obvious anisobrachial chromosomes (sm or st) and presence of an unusual type of SAT-chromosome (arrowed).

Table 1. Comparison of *A. frigidum*, *A. achainum*, *A. parnassicum* and *A. samothracicum*

	<i>Allium frigidum</i>	<i>A. achainum</i>	<i>A. parnassicum</i>	<i>A. samothracicum</i>
outer bulb tunics	membranous, dark greyish or rarely brownish	membranous, yellowish- to greyish-brown, splitting longitudinally into fibres or strips	dark greyish to blackish	membranous, white to brownish-white
spathe	2-valved, valves subequal, 5-17 (-27) mm, usually shorter than pedicels	2-valved, valves 15-50 (-65) mm, much longer than pedicels	2-valved, valves usually unequal, narrowly lanceolate, caudate; the longer 15-45 (-65) mm	2-valved, valves unequal, the longer equalling or longer than pedicel, the shorter \pm equalling or shorter than pedicel
perianth	narrowly infundibular, segments 5-6.5 x 1.5-2 mm, oblong-elliptic, subobtuse, usually mucronate	narrowly infundibular, segments 5-6.5 x 1.5-2 mm, oblong-elliptic, subobtuse or mucronate, pinkish or pinkish-white	narrowly infundibular, segments 6-7.5 x 1.7-2.5 mm, pink or whitish with brownish-purple midvein and margin	campanulate, cylindrical to narrowly cylindrical, segments 4.5-5 x 2-2.2 mm, obovate to elliptic, \pm truncate above, white with brownish-purple midvein
ovary	ovoid to ellipsoid, shortly stipitate	cylindrical to obovoid, narrowed at base, truncate at apex	ovoid to cylindrical, truncate and papillate at apex, sessile to shortly stipitate	ovoid to ellipsoid, papillate in upper part

Ecology

A. samothracicum is a rare species preferring low and moderate altitudes in the central and west central part of the island. It was first collected on the limestone rocks of the ruined castle in the village capital (Chora) of the island where it grows in association with *Ballota acetabulosa* (L.) Benth. *Carlina corymbosa* L., *Asparagus acutifolius* L., *Centaurea solstitialis* L., *Rhamnus lycioides* L., etc. The species was also found near Paleopolis at sea level in association with *Vitex agnus-castus* L., *Sarcopoterium spinosum* (L.) Spach, *Carlina corymbosa* L., *Hedypnois cretica* (L.) Dum.-Cours., *Olea europaea* L. as well as at moderate altitudes between Kamariotisa and Chora. It is concluded that the species may occur in a variety of habitats but it became rare because the areas where it grew, and the island as a whole, suffers from intense overgrazing. During our recent visits to the island we realized that the species,

even within the castle walls, was rarer than expected; some conservation measures are thus deemed necessary for its protection.

Karyology

The karyological study (materials and methods following TZANOUDAKIS 1983) showed that *A. samothracicum* is a diploid species with $2n=16$ chromosomes. It is well known that the basic chromosome number $x = 8$ characterizes all Greek species of *Allium* sect. *Codonoprasum* and also the majority of Greek *Allium* endemics are diploid (TZANOUDAKIS 1992). The haploid chromosome complement of the new species consists exclusively of metacentric (m) chromosomes and chromosomes with obviously unequal arms, i.e., submetacentric (sm) or subtelocentric (st) have not been observed in the metaphase plates studied. The karyotype of *A. samothracicum* seems to be characterised by a chromosome pair (probably number 3) with chromosomes showing high arm ratio values (c. 1.5) and by at least two SAT-chromosome pairs. In one of these SAT-chromosome pairs the nucleolar organizers are not located near to the telomere region of the chromosomes (Fig. 2) and so the corresponding SAT-chromosomes are not the typical *Codonoprasum* type (smA sensu TZANOUDAKIS 1983). SAT-chromosomes with such a morphology are not very common in *Allium* sect. *Codonoprasum* and in Greek species have been noted for the first time in *A. euboicum* Rech. f., another Aegean endemic (TZANOUDAKIS 1992).

Taxonomic relationships

RECHINGER (1943) reported *Allium parnassicum* (Boiss.) Halácsy from Samothraki and this is the only record we have of the species from the Aegean area. We are almost certain that his collection (Rechinger 9749) represents our new species which has a superficial resemblance to *A. parnassicum* (sensu STEARN 1978), or more correctly, to *A. achaium* Boiss. & Orph., mainly due to the shape of the inflorescence and the colour of the perianth segments. There are, however, several other characters which well distinguish *A. samothracicum* from both these mountain taxa.

In *A. parnassicum* and *A. achaium*, the perianth is \pm infundibuliform and the segments much longer (6-7.5 mm). In *A. samothracicum*, the perianth is tubular-campanulate and smaller (4-4.5 mm). When comparing *A. samothracicum* with *A. achaium* which has a similar perianth colour, in the latter, the spathe-valves and pedicels are much longer. In addition, the ovary in *A. samothracicum* is ovoid and sessile. In *A. achaium* and *A. parnassicum*, the ovary is truncate at the apex, narrowed and even shortly stipitate at base.

With regard to the spathe-valve size and the perianth shape, *A. samothracicum* shows some similarities to another Greek mountain species, *A. frigidum* Boiss. & Heldr. However, it is easily distinguished from this taxon by the shorter, cream-coloured or whitish and broader perianth segments, as well as the sessile

ovary. *A. samothracicum* is also distinguished from *A. paniculatum* L. subsp. *paniculatum* (another taxon occurring on mainland Greece and the North Aegean islands) by its dense inflorescence, the much shorter spathe-valves and the whitish perianth segments.

As far as we know *A. samothracicum* is endemic to the island of Samothrace. On this botanically interesting island, several mainland taxa are represented by local forms which can be treated as distinct subspecies or species, e.g., *Campanula samothracica* and *Saxifraga holoscyria*. There is a record of *A. parnassicum* from Mt Ipsario on the North Aegean island of Thasos (STOJANOV & KITANOV 1945:270). This appears to be based on material quite dissimilar to both *A. samothracicum* and *A. parnassicum*. We have not seen the material cited but our specimens from the same locality on Thasos (Tzanoudakis 10536, UPA) resembles *A. paniculatum* more than *A. parnassicum*.

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