

A new species of *Iris* (*Iridaceae*) from the northern Peloponnese (Greece)

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Abstract. *Iris hellenica* (*Iridaceae*) is described as a new endemic species from the northern Peloponnese, Greece. It resembles the widely distributed *I. germanica* but differs by its lower stature, smaller leaves, bracts, bracteoles and flowers, including a different coloration to the perianth, particularly the standards when contrasted with the falls.

Key words: endemic, Greece, *Iridaceae*, *Iris*, new species, Peloponnese, taxonomy

Introduction

A new species of *Iris* was found growing in a small area on the northern slopes of Mt Saitas in the northern Peloponnese, Greece. This mountain is situated south of the Feneos plain and is adjacent to the mountains Chelmos, Killini and Oligirtos which have rich floras with many interesting and endemic species. The flora and vegetation of Mt Saitas is the subject-matter of a PhD thesis in preparation by the first author (DM) under the supervision of the third author (AY). Saitas is well known as the site where *Biebersteinia orphanidis* Boiss. was rediscovered in 1994 after being considered extinct since its first discovery in 1851 (Yannitsaros & al. 1996; Tan Kit & al. 1997). The northern slopes of the mountain also host the largest populations of another rare and interesting plant, *Adonis cyllenea* Boiss., Heldr. & Orph. (Yannitsaros & Vassiliades 1994). During an excursion in May 2008 DM discovered and collected an iris which keyed out in Floras as *Iris germanica* L. He showed it to the second author (KT) who observed that the

plant differs in some characters and may represent a new species of *Iris* closely related to *I. germanica*.

Iris germanica (Fig. 1) belongs to *Iris* subgenus *Iris*, section *Iris*, the group representing bearded rhizomatous irises (Mathew 1981). The origin and native distribution of this species is unknown due to long-established cultivation and subsequent naturalization. It is frequently planted near villages and many lowland populations in Greece are certainly naturalized (Mathew in Strid & Tan 1991). It is presumed to be a hybrid of ancient origin and cytological investigations by Dr Siljak-Yakovlev (Paris) are currently underway to help solve this difficult problem. *I. germanica* populations on Mts Timfi and Gramos in northwestern Greece certainly can be considered wild as they are growing far from human habitation.

Rhizomes of the new iris were collected from Mt Saitas and brought into cultivation in the garden of the Goulandris Natural History Museum. They grew well vegetatively for a year but failed to flower. Unfortunately they did not survive the following year. However, plants from Mt Saitas grown at Copenhagen flour-



Fig. 1. *Iris germanica* from southwestern France (photo 05.1999, T. Lafranchis).

ished and are still alive after two years. This is probably because the plants occur on Mt Saitas at an altitude of c. 1400 m, thus the more northerly and cool Scandinavian climate is favourable for its development whereas the excessive heat in the lowlands of Athens has killed them off.

We found that the new iris and *I. germanica* taken from alpine habitats (Mt Timfi and Mt Gramos) maintained their characters in cultivation at Copenhagen over two years, the former remaining short and never attaining the height of the latter (Table 1). The basal

leaves are also short and never reach as high as the inflorescence. The perianth in the new iris has a bluish tint which is absent from typical violet-purple *I. germanica*; the claw of the standard is only one-fifth the length of the limb; it appears to be longer, at least to one-third in *I. germanica*. Thus the new species can be morphologically distinguished and a cytological examination of both species would be of some interest.

Description of species

Iris hellenica Mermygkas, Kit Tan & Yannitsaros, **sp. nov.** (Figs. 2 & 3)

Diagnosis: *Irīde germanica* similis sed ab ea notis sequentibus differt: plant minor, 25–55 cm alta (non 60–120 cm), folia 8–25 × 0.5–2 cm (non 30–80 × 2.5–4.5 cm), bracteae et bracteolae 2.5–4 cm longae (non 4–8 cm), flores omnes multo minores, tepala externa basi alba usque dilute lavandulacea, in parte superiori atrovioleacea.

Herbaceous perennial with swollen, fleshy, horizontally creeping rhizome, up to 2.5 cm diam. Leaves 5–9, clustered at base, ensiform, falcate to slightly falcate, 8–25 (–40) × 0.5–2 (–2.5) cm, greyish-green, glabrous, apiculate. Stems 20–30 cm to the first flower and 55(–60) cm to the top, greyish-green, branched with 2–3 flowers, the branches 2.5–4.5 cm long. Bracts and bracteoles slightly keeled, elliptic-ovate, 2.5–4 × 1.5–2 cm, membranous-chartaceous, green suffused purple, stramineous when dry, glabrous. Perianth tube 1.5–3.5 cm long. Falls (outer segments) obovate-spathulate, 5–8 × 2.5–4 (–4.5) cm, cuneate, white to pale lavender blue veined dark purple at base, with median band of orange-yellow hairs in lower half, dark violet-purple in upper half. Standards obovate-elliptical, 4.5–8.5 × 3.5–6 cm, truncate at base of limb,

Table 1. Important morphological differences between *Iris hellenica* and *I. germanica*.

Characters	<i>I. hellenica</i>	<i>I. germanica</i>
Height	25–55 (–60) cm	(40–) 60–120 cm
Leaves	8–25 (–40) × 0.5–2 (–2.5) cm	30–80 × 2.5–4.5 cm
Bracts and bracteoles	elliptic-ovate, slightly keeled 2.5–4 × 1.5–2 cm	elliptic-ovate, keeled (2.5–) 4–8 × 1.5–2.5 cm
Capsule size	2.5–4 × 1.8–2.5 cm	3–5.5 cm × 2–3.2 cm
Seed size	5–6 × 4–5 mm	6–7.5 × 4–5.5 mm
Colour of perianth	falls white to lavender blue at base, dark violet-purple in upper half; standards bluish-purple to pale lilac veined darker	uniformly dark violet-purple or various but not with same colour combination or with bluish tint as in <i>I. hellenica</i>
Claw of standard	one-fifth length of limb	at least one-third length of limb



Fig. 2. *Iris hellenica* from Mt Saitas (photo 16.05.2008, D. Mermygkas).

undulate at margin, bluish-purple to lilac veined darker, with narrow claw, 1 cm long, proportion of claw to limb 1: 4.5–5. Filaments white, 17–20 mm long; anthers creamy-white, 14–16 × 2–2.5 mm; pollen white. Style branches whitish to pale lilac-purple, 3.5–5 × 1–2 cm with 2 acute, darker-coloured, 0.2–1 × 0.2–0.6 cm lobes at apex. Capsule at maturity ellipsoid, 2.5–4 × 2–2.5 cm. Seeds reddish-brown, pyriform to subglobose, 5–6 × 4–5 mm, acuminate, rugose.

Flowering and fruiting: May to early June; capsules ripening late June to late July.

Type. Greece: Nomos Achaïas, Eparchia Kalavriton, NNW part of Mt Saitas, rocky limestone slopes in openings of *Abies cephalonica* forest, 1400–1430 m, 37°51'N, 22°15'E, 8 May 2010, *Mermygkas* 1622 (**Holotype** ATH; **Isotypes** ATHU, C).

Additional material examined

Nomos Achaïas, Eparchia Kalavriton: northern foothills of Mt Chelmos, village of Solos to the Styx ravine, 1300 m, openings in *Abies cephalonica*–*Pinus nigra* forest, on schist, 21 May 1984, *Strid* (photos!, plants cultivated in Copenhagen Botanical Garden); NNW part of Mt Saitas, rocky limestone slopes in openings



Fig. 3. *Iris hellenica* from Mt Saitas (photo 17.05.2008, T. Lafranchis).

of *Abies cephalonica* forest, 1400–1430 m, 37°51' N, 22°15' E, 16 May 2008, *Mermygkas* 1070 (ATH, C); NNW part of Mt Saitas, between limestone rock outcrops, 1400 m, 37°51' N, 22°15' E, 21 June 2008, fruiting specimen, *Mermygkas* 1207 (ATH); *loc. ibid.*, 1450 m, 17 May 2008, *Lafranchis* (photos!); *loc. ibid.*, 11 May 2010, *Lafranchis* (photos!).

Nomos & Eparchia Korinthias: Ano Tarsos, northern foothills of Mt Killini, stony and rocky scrub along the main road, 38°00'N, 22°22'E, 12 May 2009, flowering, *Lafranchis* obs.; *loc. ibid.*, 12 May 2009, C. & M. *Dearden* (photos!); *loc. ibid.*, 29 May 2010, fruiting specimens, *Lafranchis* s.n. (herb. *Lafranchis*, herb. *Kit*).

Habitat and ecology

On Mt Saitas, three populations of the new iris were found, all at altitudes of 1400–1450 m. One population was in a small doline in an opening of *Abies cephalonica* forest. The second smaller population was growing in soil in-between limestone boulders and outcrops and the third and smallest population was found in open *Abies* forest. The most recent visit to the area in May 2010 showed that the number of individuals have increased, occupying new adjacent areas. Approximately 800 flowering stems were counted in the three populations. Taxa occurring in the close vicinity of *I. hellenica* include (in alphabetical order), *Aethionema saxatile* subsp. *graecum*, *Anthemis cretica* subsp. *cretica*, *Anchusa hybrida*, *Armeria canescens*, *Bromus sterilis*, *B. tectorum*, *Convolvulus arvensis*, *C. elegantissimus*,

Crepis hellenica subsp. *hellenica*, *Eryngium amethystinum*, *Geranium macrostylum*, *Helianthemum salicifolium*, *Juniperus oxycedrus* subsp. *oxycedrus*, *Knautia integrifolia*, *Leontodon tuberosus*, *Lonicera nummulariifolia* subsp. *nummulariifolia*, *Marrubium velutinum* subsp. *cylleneum*, *Minuartia attica* subsp. *attica*, *Myosotis sylvatica* subsp. *cyanea*, *Ornithogalum sibthorpii*, *Papaver hybridum*, *Parentucellia latifolia*, *Phleum subulatum*, *Poa bulbosa*, *Satureja alpina* subsp. *meridionalis*, *Sanguisorba minor* subsp. *balearica*, *Silene conica*, *S. italica* and *Teucrium capitatum*.

Despite a careful search the species was not discovered on other parts of Mt Saitas and its presence on the mountain seems to be restricted, as far as is known, to this small area of ca. 500 m² on the northern slopes. The total size of the three populations is estimated as less than a thousand individuals. *Iris hellenica* was first collected on Mt Chelmos in May 1984 by Arne Strid (Denmark) and has since been found on Chelmos and the neighbouring mountain of Killini by other botanists; however, they have referred to it as *Iris germanica* (see Acknowledgements). Although Mt Saitas is heavily grazed the iris populations have in fact increased over the last two years so it is apparent that the species is not in danger from the roaming herds of goats and sheep.

Acknowledgements. Tristan Lafranchis (France) has independently discovered the iris on Mt Saitas in May 2008 while on tour with fellow botanists and entomologists and had in fact, met DM there. On being informed of its true identity by KT, he has generously sent to her valuable documentation on its occurrence as well

as all his photographs of the species over two years (taken on 17 May 2008 and 11 May 2010). He has also sent to KT his collection from Ano Tarsos in the northern foothills of Mt Killini in north central Peloponnese and it is through him that photographs from this locality were made available in May 2009 by Chris & Monica Dearden (New Zealand). *Iris hellenica* was first brought into cultivation at the Copenhagen Botanical Garden by Arne Strid in May 1984. The material originated from Mt Chelmos at the lower altitude of ca. 1300 m. Kostas Polymenakos (Athens) shared with KT his discovery of an iris at 1600–1700 m on Mt Chelmos on 25 May 2009, which probably represents the same new species and kindly made a trip again to the area on 24 May 2010 to search for it at lower altitudes. Prof. Jerzy Zielinski (Poznan, Poland) has kindly translated the diagnosis to Latin at the request of KT. Mrs Niki Gouladriss, Director of the Gouladriss Natural History Museum, supported the field trips to Mt Saitas. To all named, we remain deeply indebted and profoundly grateful.

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