

On a new *Petasites* species from the southern Pindos (Greece)

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Abstract. *Petasites anapetrovianus* (Asteraceae) is described as a new species endemic to Mt Peristeri in S Pindos, Greece. It resembles *P. paradoxus* from the Pyrenees, Alps and Eastern Carpathians with southward extensions to Slovenia, Croatia (Velebit Mts) and Central Bosnia (Mt Vlasic) but can be easily distinguished by its leaf margins which are more deeply and acutely dentate-lobed. *P. kablikianus* has almost similar leaf margins with 3–5 lateral veins bordering the sinus but its leaves are glabrous above and beneath at maturity except for some short hairs on the veins. The new species is geographically isolated.

Key words: Asteraceae, Balkan Peninsula, endemic, Greece, new species, *Petasites*, S Pindos

***Petasites anapetrovianus* Kit Tan, Ziel., Vladimirov & Stevanović, sp. nov.**
(*Petasites* Mill. subgen. *Petasites* sect. *Schistostigma* Toman) (Fig. 1)

Planta nostra *Petasite paradoxo* valde affinis, sed ab eo imprimis foliis acute profunde dentatis differt. *Petasites doerfleri* et *P. kablikiano* etiam similis sed ab illa foliis maturis supra glabris, ab altera foliis subtus persistente tomentositate discrepat. Ab omnibus speciebus affinis area geographica isolata distinguitur.

Perennial herb, up to 35 cm tall at time of flowering, becoming taller in fruit. Rootstock 1–1.5 cm diam., thickest just below the stem. Basal leaves long-petiolate; lamina triangular-cordate to hastate, 7–12 cm long, 7–3 cm broad, acute or subacuminate at apex, deeply (1–2 cm) reniform-excised and shallowly sinuate-lobed in the lower half, with 1–3 lateral veins bor-

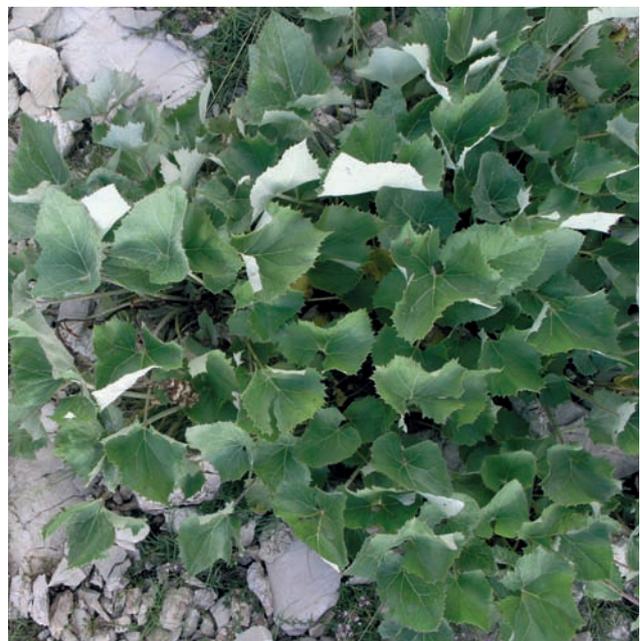


Fig. 1. *P. anapetrovianus* on Mt Peristeri (photo V. Vladimirov).

dering the sinus; lobes \pm convergent; the margin unevenly and sharply sinuate-dentate; teeth up to 4–5 mm deep; apices of teeth 2–5 mm distant, those of the largest prominent teeth 10–20(–24) mm apart; the lamina of mature leaves persistently and densely white-tomentose beneath, dark green and glabrous above with white cobwebby remains of hairs on surface and veins. Petioles 16–23 cm long, white-tomentose at first, glabrescent. Scapes 30–35 cm tall or more (in fruit), rather slender, white-tomentose at first, glabrescent, with \pm numerous stipitate glands above. Scale-leaves on scape up to 30, alternate, sessile; the lowermost lanceolate to broadly lanceolate, the upper ones narrowly triangular, the middle *ca.* 25–30 mm long. Peduncles 10–15 mm long, tomentose, with numerous stalked glands; bracts numerous, spirally arranged, 3–7 mm, lower ones narrowly triangular, upper ones linear. Capitula 15–20, in racemose inflorescence. Phyllaries (involucral bracts) purplish, in two uneven rows, linear to linear-oblancoate, 5–6 mm long, acute at apex, 1–3 veined, very sparsely tomentose or subglabrous, with numerous stipitate glands on abaxial surface especially on the central vein, the inner with broad hyaline margin. All florets purplish-pink, tubular, 5-lobed, 5-veined, somewhat exceeding the phyllaries. In gynomorphous individuals (female plants) corolla tube of female florets narrowly cylindrical, 4.5 mm long; corolla lobes very short, narrowly triangular, 0.5–0.7 mm long, acute. Style exerted *ca.* 2–3 mm from corolla; stigma short, 0.3–0.5 mm. Pappus hairs numerous, almost equalling length of corolla tube. Achenes *ca.* 2 mm, pericarp translucent. Corolla tube of pseudohermaphrodite florets (functionally male florets) *ca.* 5 mm, slightly campanulate above; corolla lobes longer, triangular-lanceolate, 1.8–2 mm. Style slightly longer than corolla tube; stigma divided to $\frac{2}{3}$ its length, branches 2, *ca.* 1 mm long. Anthers *ca.* 1 mm, semi-exserted from tube. Pappus hairs fewer than in purely female florets, shorter than corolla tube, *ca.* 3 mm long. Achenes small, *ca.* 1 mm, sterile.

The above description is based on gynomorphous (female) plants; in andromorphous (male) individuals, the female florets are sterile.

Type. Greece: Nomos Ioanninon, Eparchia Dodonis: Mt Peristeri, along road to Tsoukarella peak after junction to village of Groumelitsa, calcareous rocky scree slopes, 1900–1950 m, 39°40' N, 21°06' E, July 04, 2008, coll. Kit Tan, G. Vold & V. Vladimirov 30600 (**holotype** – C; **isotypes** – ATH, KRA & SOM, all gynomorphous plants).

Distribution and affinities

Three other species of *Petasites* are known from Greece: *P. albus* (L.) Gaertn., *P. hybridus* (L.) P. Gaertn. & al. and *P. kablikianus* Bercht., all belonging to *Petasites* subgen. *Petasites*. The habitat of our new species is rather unusual for *Petasites* in Greece. Whereas the other three species are found in river gorges, damp screes, wet places by streams or in semi-shaded forest, *P. anapetrovianus* was discovered on dry stony and rocky limestone scree slopes far from streams or forest on the way to the summit of Tsoukarella, one of the peaks of Mt Peristeri. Two small patches of the plants were noted, growing near each other. This alerted us to the idea it might represent a new taxon. It was at first thought the plants represented *P. paradoxus* (Retz.) Baumg. (syn.: *P. niveus* (Vill.) Baumg.) and thus it would be the first record of this species for Greece and the southernmost occurrence of the species in the Balkan Peninsula. *P. paradoxus* (Figs. 2 & 3) occurs in the Pyrenees, Alps, in several scattered localities in



Fig. 2. *P. paradoxus*, basal leaf and flowering scape (image from C).



Fig. 3. *P. paradoxus*, capitula (image from C).

montane and submontane regions in the Eastern Carpathians, and further south to Slovenia, Croatia and Bosnia. It has been reported from W Serbia based on Pančić's material from Mt Murtenica but this is erroneous, being a misidentification for *Tussilago farfara* L. f. *sinuata* Malý (in herb.), thus determined by K. Malý (Fig. 4) and confirmed recently by Stevanović. In the Balkan Peninsula, *P. paradoxus* is known with certainty only from Croatia in Gorski Kotar, Mts Obruč, Risnjak, Snežnik, Velebit and Plješevica (Horvat 1952) and C. Bosnia (Mt Vlašić), later being also the easternmost occurrence of its distribution in the Balkans.

Petasites doerfleri Hayek has leaves persistently white-tomentose on both surfaces and purplish-tinged, non-glandular phyllaries. It differs from *P. paradoxus*, *P. kablikianus* and our new species by the presence of ligulate female florets and its leaf margins with sharply acute, few and large dentate lobes (Fig. 5, Hayek 1917: tab. 3, fig. 3). It is restricted to N Albania (Mt Prokletije at 1900–2200 m) and has in the past been treated as a separate genus *Nardosmia* Cass. or subgenus, *Nardosmia* (Cass.) Petermann (To-



Fig. 4. *Tussilago farfara* from Mt Murtenica, W Serbia, misidentified as *P. paradoxus* (image from BEOU).



Fig. 5. *P. doerfleri* from N Albania (image from SARA).

man 1972). Records of *P. doerfleri* from Hercegovina (Fig. 7) probably refer to *P. kablikianus*, as proven by the record from N Montenegro (Mt Durmitor).

Petasites kablikianus (Figs. 6a, 6b, 8) has been recorded from the Sudeten Mts, Eastern and Southern Carpathians, N Montenegro (Mt Durmitor), Serbia, Croatia, Bosnia-Herzegovina, Albania, Bulgaria (Pirin Mts, Central Rhodopi Mts) and Greece (Rhodopi). It is distinct from *P. anapetrovianus* by its whitish flowers, larger achenes (4.5–5.5 mm), longer pappus hairs (11–12 mm) and leaves glabrous beneath at maturity, hairy only along the veins. It was first reported for Bulgaria by Hermann & Stefanoff (1929) from Pirin Mts (above Banderitsa hut), under the name *P. glabratus* (Malý) Borbás, and included in the Bulgarian Red Data Book (Kuzmanov 1984) as “rare”. Since then it has been found in several localities in the Central Rhodope (Vladimirov, unpubl.). The records from the Greek Rhodopi represent the southernmost distribution of the species in Europe.

Petasites hybridus is known from Europe, Turkey, Caucasus and N Iran; *P. h.* subsp. *hybridus* with purplish-pink or whitish florets occurs in Europe, and is introduced to Iceland and N America (Toman 1972); *P. h.* subsp. *ochroleucus* (Boiss. & A. Huet) Šourek



Fig. 6a. *P. kablikianus* from Central Rhodopi Mts, Bulgaria (photo V. Vladimirov).

with yellowish or greenish-yellow florets is in the Balkan Peninsula, Turkey, Caucasus and N Iran. Within the Balkans it has been reported from Montenegro, R. Macedonia, Albania, Bosnia-Herzegovina, Serbia, Bulgaria and Greece.

Petasites albus is distributed in Europe and the Caucasus. In northern Greece, it often occurs in the same mountain areas as *P. hybridus*. *P. albus* is distinguished from *P. hybridus* by its leaves with basal lobes usually divergent, 0–1 (not 2–5) lateral veins bordering the narrow sinus, and pappus hairs 11–12 mm long (not 3–4 mm).

Our new *Petasites* differs from *P. paradoxus* by its leaf margins which are deeply and acutely dentate-lobed and by its florets which have narrowly triangular, acute corolla lobes (irregularly truncate in *P. paradoxus*). It is geographically disjunct and isolated (Fig. 7). It differs from *P. doerfleri* by its leaf margins with smaller and more numerous dentate lobes,



Fig. 6b. *P. kablikianus* from Mt Durmitor, N Montenegro, misidentified as *P. doerfleri* (image from BEOU).

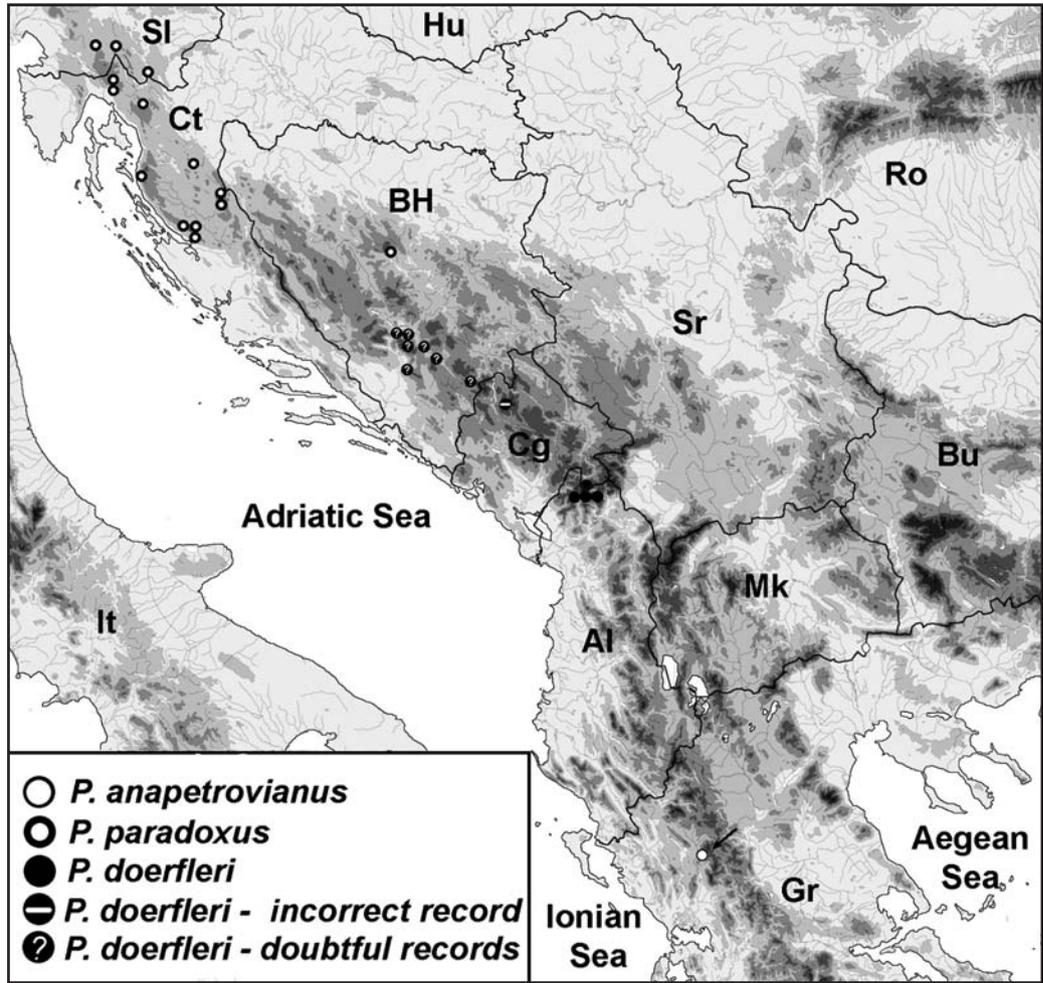


Fig. 7. Distribution map of three species of *Petasites* in the Balkan Peninsula. Distribution of *P. paradoxus* according to Horvat (1952).

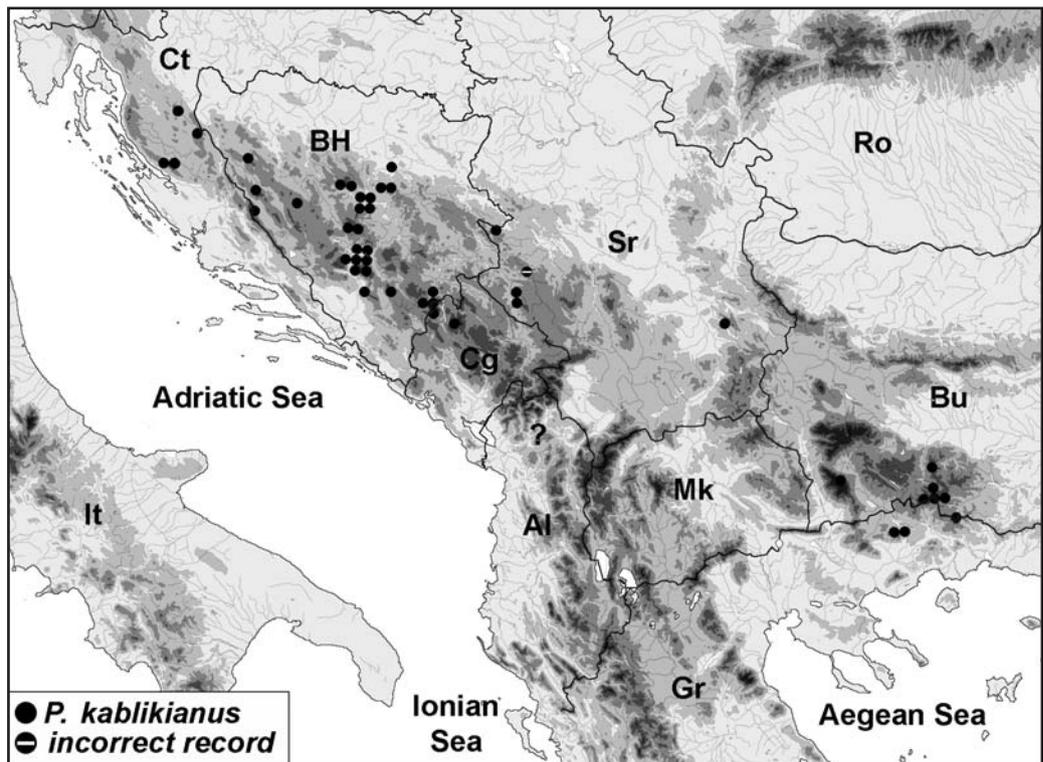


Fig. 8. Distribution map of *P. kablikianus* in the Balkan Peninsula. Species distribution in Croatia, Bosnia & Herzegovina according to Maly (1931), Serbia and Montenegro according to Niketić & Zlatković (2006).

absence of ligulate florets and presence of glandular phyllaries. In Greece, *P. anapetrovianus* differs from *P. albus* by its much smaller, triangular-cordate to hastate leaves, with 1–3 veins bordering the broad basal sinus and its purplish phyllaries. From *P. hybridus*, it differs by its small leaves densely white-tomentose beneath, slender scapes and glandular-pubescent phyllaries. *P. kablikianus* has almost similar leaf margins but its mature leaves are glabrous above and beneath except for short hairs along the veins; the papus hairs and achenes are much longer.

Based on the taxonomic survey presented by Toman (1972), *P. anapetrovianus* falls into *P.* subgen. *Petasites* sect. *Schistostigma* which is characterised by the stigma of the pseudohermaphrodite flowers being oblong-lanceolate to linear and divided into branches much longer than broad. Whilst preparing this short article it was realised that the taxonomy and distribution of *Petasites* in the Balkan Peninsula is imperfectly known and a survey of the genus in the Balkan Peninsula by Stevanović & al. is envisaged. Although the new species is known at present only from S Pindos and in only two small patches on limestone scree, we feel that its existence there is not under any threat as there is little grazing pressure in the area and we do not envisage a change or loss of habitat. Thus *P. anapetrovianus* will surely survive in the future and probably await discovery on other mountains of S Pindos and Sterea Ellas.

Eponymy. Named in honour of Dr Ana Petrova (Sofia), friend and collaborator.

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