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***Pinguicula louisii* MARKGRAF (Lentibulariaceae) in Albania.
Short notice about a nearly unknown and perhaps neglected
butterwort.**

Abstract

Description and illustration of *Pinguicula louisii* MARKGRAF (*P. crystallina-hirtiflora*-aggregate) from the locus classicus in Albania.

Zusammenfassung

Beschreibung und Abbildung von *Pinguicula louisii* MARKGRAF (*P. crystallina-hirtiflora*-Aggregat) vom Originalfundort in Albanien.

On May 23, 1924, during a botanical journey across Central-Albania FRIEDRICH MARKGRAF found near Tirana (Tiranë) a flowering *Pinguicula* population (coll. nr. 287) on the water-trickled banks of the rivulet Lumi Ljanës (exactly Lanës) west of Linsa (Linza). The locality was situated about 150m asl and the clayey (marly) soil was rich in lime. At first sight the plants looked like *P. hirtiflora* TENORE, a butterwort he had earlier only found on serpentine rocks south of river Drin in about 1.000 m above sea level (MARKGRAF 1926).

MARKGRAF (1926:430) pointed out, that contrary to his Linza population the typical *P. hirtiflora* is distinguished by its identical calyx lobes, its distinctly emarginate lobes of the corolla lower lip, its shorter and tougher spur and its more heavily growth. He didn't hesitate to describe his Linza plants as a new species which he nominated *P. louisii* in honour of Dr. H. LOUIS from Berlin, a geographer who accompanied him on some of his excursions. He included in his new species the specimens collected by TH. KRÜPER in 1869 near Lithochoron at the foot ("ad radices") of mountain Olympus (Thessaly – not seen).

Unfortunately, the original material has been destroyed during World War II at Berlin-Dahlem.² It has been studied by ERNST (1961:186), who considered the

¹ With active and independent (cultivation, photograph) assistance by ROSEMARIE STIMPER (Jena).

² In a letter to the author from November 5, 1959, MARKGRAF wrote: "...*P. louisii* habe ich leider nicht. Ich hatte mein ganzes Material dem Museum in Dahlem geschenkt, wo es nun vernichtet ist..." [Unfortunately, *P. louisii* I don't have. I had given all of my material to the Museum at Dahlem where it is now destroyed...]

MARKGRAF taxon to be a variety of *P. hirtiflora* without giving any reasons for his decision, but adding the distinguishing feature “corolla bright blue”.³



Fig. 1 Phototypus of *Pinguicula lousisii*. – Photocopy from MARKGRAF 1926, pl. VII/VIII, Fig. 15. – Scale ~3:4.

My own informations were founded on MARKGRAF's protologue and on the small black-and-white photograph in his paper (MARKGRAF 1926: pl.VII/VIII, Fig.15; our Fig.1). The latter only gives a vague impression of the characteristics of *P. lousisii*, but still the features “rounded corolla lobes” and “long spur” are recognizable. When I revised the Eurasian taxa (CASPER 1962) and wrote a monograph of the genus (CASPER 1966) I had no additional reliable sources. So I agreed with ERNST (1961) and subordinated the taxon as variety of *P. hirtiflora* hoping one day to find out more.

³ In the same letter he wrote: “Herr Dr. ERNST hat die Art als Varietät zu *P. hirtiflora* gezogen, was mir allerdings nicht sehr einleuchtet, denn die ganze Pflanze ist viel zierlicher, ihre Blüten blasser und ihr Sporn viel feiner, auch die Blätter kürzer und stumpfer... Ich fand sie wiederholt und zwar nur an Quellen im Mergel... Sie ist keine Pflanze der Hochlagen... Winterknospen habe ich... nicht gesehen...aber es besteht kein Grund zu der Annahme, dass sie keine bildete...” [Mr. Dr. ERNST has placed the species as variety in *P. hirtiflora* what I don't, however, see because the whole plant is much more delicate, its flowers paler and its spur much finer, the leaves are shorter and blunter... I found it repeatedly at springs in marly soil... it is no plant of high altitudes... Winter buds I have not... seen... but there's no reason to suppose that it didn't form such ones...].

New aspects came into discussion when F.K. MEYER (JENA) put at my disposal his rich collections of *Pinguicula* from Albania made during his expeditions between 1959 and 1961. Among other specimens gathered in the immediate neighbourhood of MARKGRAF's locus classicus⁴ (Fig. 2) he found a *Pinguicula* population which seemed to match with the MARKGRAF description of *P. lousiit*. Indeed, his voucher (Flora albanica, coll. F.K. MEYER nr. 5555 – JE) contains 25 well prepared individuals of different growth but all distinguished by (1) the typical rounded, not emarginate tips of the three lobes of the corolla lower lip, by (2) the nearly undivided and not spreading lobes (appearing as a single lobe) of the calyx lower lip and by (3) the very long, usually thin spur. The latter is as long as or longer than the rest of the corolla and continues the funnel-shaped tube often slightly bending downwards forming an angle with the tube. In some specimens it may be thicker, somewhat shorter and at the tip blunt (see Fig. 2). In 1998, I revised the voucher as *P. hirtiflora* var. *lousiit* now convinced of the taxonomical identity of MARKGRAF's and MEYER's specimens. I did not subordinate it in *P. crystallina* SMITH in SIBTHORP et SMITH for reasons discussed in my paper of 1970 (p. 285).

Surprisingly, CONTANDRIOPOULOS & QUÉZEL (1974) published a paper on *Pinguicula* from Greece and Turkey with several varieties of *Pinguicula hirtiflora* under them var. *lousiit* from Vardousia, Central Pindus, Philippos near Drama (Falakron), and Mountain Olympus (Lithochoron), all localities situated in Greece. Always they counted $2n=24$ chromosomes, a number unknown in the group.

Thanks to PD Dr. APPENROTH from Jena, Prof. KASHTA and Prof. ALEKO MIHO from Tiranë I received living plants from the locus classicus. The plantlets are now growing and flowering in the Botanical Garden of the University of Jena (Fig. 3) and allow a better description and an examination of MARKGRAF's statements.

⁴ In a letter to F.K. MEYER from December 8, 1960, MARKGRAF described the locus classicus as "Tragtierpfad von Tirana nach Dibra, unterhalb der Shkal e Tunjanit" [Mule track from Tirana to Dibra below Shkal e Tunjanit]. He added: "Nachdem man auf dieser alten Dibra-Strasse die Sandsteinkette durchquert hatte, hörte die türkische Pflasterung auf, und der Pfad stieg an den Lanabach hinunter, wo an einem kleinen lehmigen Steilhang etwas Wasser austrat. Dort wuchs die Pflanze." [Having crossed the chain of sandstone on this old Dibra-street the Turkish paving ended and the mule track led down to the Lana-rivulet, where on a small clayey steep slope some water flew out. There the plant was growing.]. Er fügte hinzu, dass er bei einem späteren Besuch einen neuen Fundort angetroffen hätte: "Wo die Strasse nach Kruja ihre ersten Windungen den Steilhang hinauf macht, gab es eine quellige Stelle, an der sie ebenfalls wuchs. Der Platz fällt ebenfalls dadurch auf, dass an den benachbarten Kalkfelsen die grosse *Salvia ringens* blüht." [Where the street to Kruja begins winding up the steep slope a small spring exists ... on the neighbouring rocks the great *Salvia ringens* is flowering.]. In this letter MARKGRAF incidentally accepted the ranging of *P. lousiit* as variety of *P. hirtiflora* by ERNST (1961).



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Fig. 2 Photocopy of the voucher *Flora albanica*, coll. F.K. MEYER Nr. 5555 – JE;
Scale~1:2.

Herbarium Haussknecht



Fig. 3 *Pinguicula luisii*, cult. BGJ 73.1

1 Habit, scale ~8:9; 2 Flower in front view, scale ~10:1, with the rounded corolla lobes and the yellowish-green hairy palate-like spot; 3 Flower in side view, scale ~5:1, with the long depending spur; 4 Flower from the back, scale ~5:1, with the bright green calyx and the subequal lobes of the upper lip and the indistinct emarginated lower lip; 5 Flower in side view, ~scale ~5:1, with the expanded corolla lobes. – Photographs: ROSEMARIE STIMPER (Jena).

Description (made from cultivated material – BGJ 73.1 combined with F.K. MEYER coll. Nr. 5555 – JE)

Herb rosette-forming, often gregarious, perennial, somewhat fleshy, ~20–50 mm in diameter.

Growth form tropical-homophyllous, i.e. generative (flowering from early spring to late autumn) and vegetative (non flowering during winter) compact rosettes built of similar leaves forming no winter buds (i.e. overwintering in the state of the open winter rosette above the ground, temporarily under snow).

Leaves (4–)6–10 or sometimes more, bright green, almost sessile, (rosettes exposed directly to the sun often slightly reddish), entire, in outline oblong-elliptic to obovate; leaf blades ~1–20 x 6–10 mm; at the apex usually rounded or rarely slightly emarginate, at base tapering into a short indistinct flattened petiole; at the margin barely rolled upward; their upper surface densely beset with minute sessile and stipitate, viscid glandular hairs.

Scapes 1–5(–10), (3–)4–10(–15 cm) high, at base about 1.5 mm thick, tapering to the top, with a short, erect or ascending rootstock with many short filiform simple roots; sparsely glandular-hairy beyond the flower, glabrous at the base.

Flowers solitary, scapose, (15)20–25 mm (spur included); pedicels filiform, in anthesis erect, lengthening somewhat in fruit; densely stipitate-glandular.

Calyx two-lipped (bilabiate), bright green, (4–)6–7(–8) mm long, externally densely stipitate-glandular: upper lip to the base 3-lobed, the lobes subequal, oblong, at the apex rounded or subacute, ~3 x 1 mm; lower lip indistinct 2-lobed (seemingly one-lobed), lobes up to 9/10 of its length (~4 mm) fused (i.e. the apex only with two small tips or nearly entire) and broader than the lobes of the upper lip.

Corolla two-lipped (bilabiate), ~14 x 12 mm, i.e. funnel-shaped at the base but expanded above into two lips; lobes in their upper (anterior) half bright blue, in their lower (posterior) half whitish, before and at the throat with a yellow-greenish spot longitudinally striped with three raised densely hairy lines (palate-like); widely open, i.e. the two upper (posterior) lobes oblong, at the tip rounded, erected, with their tips slightly recurved, forming an angle of about 80°–110° with the three-lobed lower (anterior) lip, distinctly smaller with a bold pattern: up to the middle each with three dark brownish-purplish nerves the middle one much longer than the two beside. The lower lobes nearly twice as long and broad than the upper ones, oblong, at their tips rounded, not emarginate, at the most slightly truncate; their middle lobe much broader, its apex rounded, at the most slightly truncate, never emarginate or deeply cut; the entrance of the throat in the region of the base of the lower-lip lobes densely yellowish hairy, the base of the middle lobe beset with a slightly elevated hairy yellow palate-like spot.

Tube short, broadly funnel-shaped. about ½ of the total length of the corolla, ~5 mm.

Spur cylindric with manycelled papillose hairs. in relation to the whole corolla very long, 8–15 mm, usually scarcely narrowed ending in a blunt tip, suspending,

forming an angle of nearly 90° – 130° ($\sim 140^{\circ}$) with the tube; bright green to whitish, nearly glabrous.

Number of chromosomes unknown⁵.

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Acknowledgements:

I am much obliged to PD Dr. APPENROTH (Jena), Prof. Kashta and Prof. ALEKO MIHO (Tiranë) who supplied me with living non-flowering material from the locus classicus. I thank Mrs. ROSEMARIE STIMPER (Jena) for the photographs and as well as the gardeners of the Botanical Garden Jena for the cultivation of the plantlets. Dr. F.K. MEYER (Jena) let me have for study his rich collections of *Pinguicula* herbar sheets and the letter of FRIEDRICH MARKGRAF about the locus classicus.

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⁵ The chromosome number $2n=24$ mentioned by CONTANDRIOPOULOS & QUEZEL (1974) does not come from Albanian material. Apart from that it is doubtful.

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Zeitschrift/Journal: [Haussknechtia - Mitteilungen der
Thüringischen Botanischen Gesellschaft](#)

Jahr/Year: 2004

Band/Volume: [10_2004](#)

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Artikel/Article: [Pinguicula lousii Markgraf \(Lentibulariaceae\) in
Albania. Short notice about a nearly unknown and perhaps
neglected butterwort 239-245](#)