Article

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# First records for the Flora of Albania of *Euphrasia picta* (*Orobanchaceae*), *Maianthemum bifolium* (*Asparagaceae*), and *Satureja thymbra* (*Lamiaceae*)

**Abstract**

Meço, M., Kashta, L. & Mullaj, A.: First records for the Flora of Albania of *Euphrasia picta* (*Orobanchaceae*), *Maianthemum bifolium* (*Asparagaceae*), and *Satureja thymbra* (*Lamiaceae*). — Fl. Medit. 35: 183-189. 2025. — ISSN: 1120-4052 printed, 2240-4538 online.

Recent floristic investigations conducted between 2017 and 2024 in northern and central Albania have led to the discovery of three vascular plant species new to the national flora: *Euphrasia picta* (*Orobanchaceae*), *Maianthemum bifolium* (*Asparagaceae*), and *Satureja thymbra* (*Lamiaceae*). These records expand the known distribution range of each taxon within the Balkans and include the first report of the genus *Maianthemum* in Albania. The discoveries clarify both northern and southern range limits of the species in the region and highlight the significance of continued botanical exploration in an underexplored part of the Balkan Peninsula. The findings provide important baseline data for future biogeographical and conservation assessments of the Albanian vascular flora.

*Key words*: Vascular flora, new records, plant distribution, Balkan Peninsula, conservation.

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## Introduction

Albania hosts an exceptionally rich and diverse flora shaped by its complex topography, climatic gradients, and its strategic position in the central Balkans (Paparisto & al. 1988). Despite a long tradition of botanical exploration, many areas remain insufficiently studied, and new floristic records continue to emerge (Pils 2024), reflecting the country's role as a biogeographical crossroads between Central Europe and the Mediterranean basin. Documenting such findings is essential for refining national checklists, improving knowledge of species distributions, and supporting conservation planning.

The family *Asparagaceae* is currently represented in Albania by 13 genera and approximately 50 species. Until now, the genus *Maianthemum* had not been recorded in the country. *Lamiaceae* includes 32 genera; the genus *Satureja* is represented by three species (S. *cuneifolia* Ten., *S. hortensis* L. and *S. montana* L.), though historical records suggest up to

nine taxa, several of which have since been synonymized or corrected through recent revisions (Saliaj & al. 2022). *Orobanchaceae* is represented by 12 genera and nearly 90 species, although earlier literature lists considerably fewer taxa. Within this family, the genus *Euphrasia* is currently known in Albania with seven confirmed species (Barina & al. 2017).

The present study reports three additional vascular plant taxa: *Euphrasia picta* Wimm. (*Orobanchaceae*), *Maianthemum bifolium* (L.) F.W. Schmidt (*Asparagaceae*), and *Satureja thymbra* L. (*Lamiaceae*), recorded during recent field investigations in northern and central Albania. These data contribute to the ongoing effort to complete the national flora and to better understand the phytogeographical relationships and diversity patterns of the Balkan Peninsula.

## Materials and Methods

The new records presented in this study are the result of continuous floristic investigations conducted between 2017 and 2024 in northern and central Albania. All localities were georeferenced using a Garmin Dakota 10 GPS device. At each site, ecological parameters, including substrate type, slope exposure, associated plant species, and population size, were recorded. Observations on potential and current threats to the populations were also noted.

Taxonomic identification was based on morphological examination of collected specimens and comparison with relevant literature, including Flora Europaea (Tutin & al. 1964-1980). Nomenclature and distribution data were verified using major international databases such as Euro+Med PlantBase and the Kew World Checklist. Voucher specimens are preserved in the private herbarium of M. Meço (Department of Biology, Faculty of Natural Sciences, University of Tirana) and will be deposited in the National Herbarium of Albania (TIR). Species distribution maps were generated using georeferenced coordinates to document collection sites and visualize the known ranges of the taxa in the Balkans.

## Results and Discussion

### *Euphrasia picta* Wimm. (*Orobanchaceae*)

*Euphrasia picta* is a hemiparasitic annual species distributed mainly in temperate Europe. According to Euro+Med PlantBase, the species has been recorded in the Balkan Peninsula, specifically in Romania and Bulgaria, while KEW data indicate its presence even in the northwestern Balkans without specifying a country.

In Albania, *E. picta* was recorded for the first time during a floristic survey in September 2024. The species was found on wet limestone substrates near the spring of "Kroi i Shtrazës" in the Theth Valley, at the edge of a mixed *Pinus heldreichii–Fagus sylvatica* forest (Figs. 1 & 4), within the Albanian Alps National Park (42°25′39.88″N, 19°45′42.37″E; 1150 m a.s.l.).

Other *Euphrasia* specimens collected from this locality and adjacent areas have been assigned to the *E. rostkoviana* Hayne group (Barina & al. 2017). According to Flora

Europaea (Tutin & al. 1964-1980), members of this group are characterized by capsules not exceeding twice their width in length. In the examined material, the capsule is emarginate, measuring 5.5 × 2 mm, and is approximately equal in length to the calyx. Cauline leaves attain up to 13 mm in length and possess 1–5 pairs of marginal teeth. The lower floral leaves are 3–10(–12) mm in length and are suborbicular to deltate or oblong-ovate, with a cuneate to rounded base. The combination of these diagnostic characters corresponds more closely to *E. picta* than to typical representatives of the *E. rostkoviana* group.

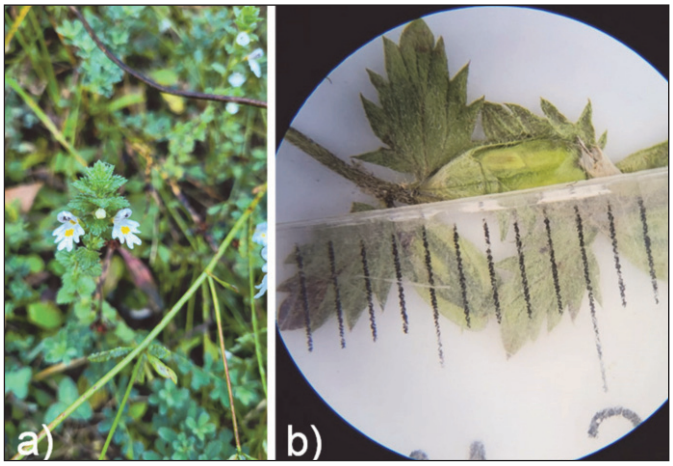



Fig. 1. (a) *Euphrasia picta* in its natural habitat; (b) herbarium specimen with capsules and scale in mm; (c) collection site on a map of Albania (Photos by M. Meço).

***Maianthemum bifolium* (L.) F.W. Schmidt (*Asparagaceae*)**

*Maianthemum bifolium* is a rhizomatous geophyte distributed across temperate Eurasia, typically inhabiting temperate forest ecosystems. In the Balkans, the species has been recorded from northwestern Croatia (Mitić & al. 2007) and Serbia, where it is regionally classified as Endangered (Ostojić & al. 2020).

The first Albanian record was made in June 2017, with further observations in July 2023. The species was found in the herb layer of a spruce–beech forest on stabilized gravel substrates (Figs. 2 & 4), along the Valbona River, Tropojë (42°26′41.78″N, 19°53′9.05″E; 42°25′29.94″N, 19°52′19.67″E; 950 m a.s.l.). This represents the first occurrence of the genus *Maianthemum* in Albania and the southernmost known distribution of the species in the Balkans.




Fig. 2. (a,b) *Maianthemum bifolium* in its natural habitat (Photos: a by L.Kashta; b by M. Meço)

***Satureja thymbra* L. (*Lamiaceae*)**

*Satureja thymbra* is a Mediterranean chamaephyte distributed from Sardinia (Italy) to the eastern Mediterranean. In the Balkans, the species is known from Greece (POWO 2025).

In Albania, *S. thymbra* was recorded in autumn 2022 on southwestern slopes near Thumanë (Figs. 3 & 4), north-central Albania (41°32'50.2"N, 19°43'03.1"E; 150 m a.s.l.). The population occurs in degraded shrubland between an asphalted road and coppice oak forest, on dry clay soil over limestone. This record represents the northernmost distribution limit of the species in the Balkans and increases the number of *Satureja* species known from Albania to four.

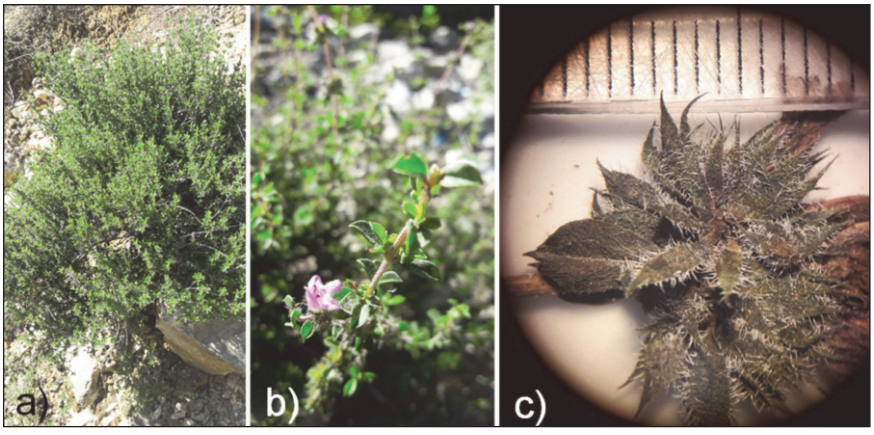



Fig. 3. (a, b) *Satureja thymbra* in its natural habitat; (c) verticillaster detail photographed under a binocular microscope, scale in mm (Photos by M. Meço).

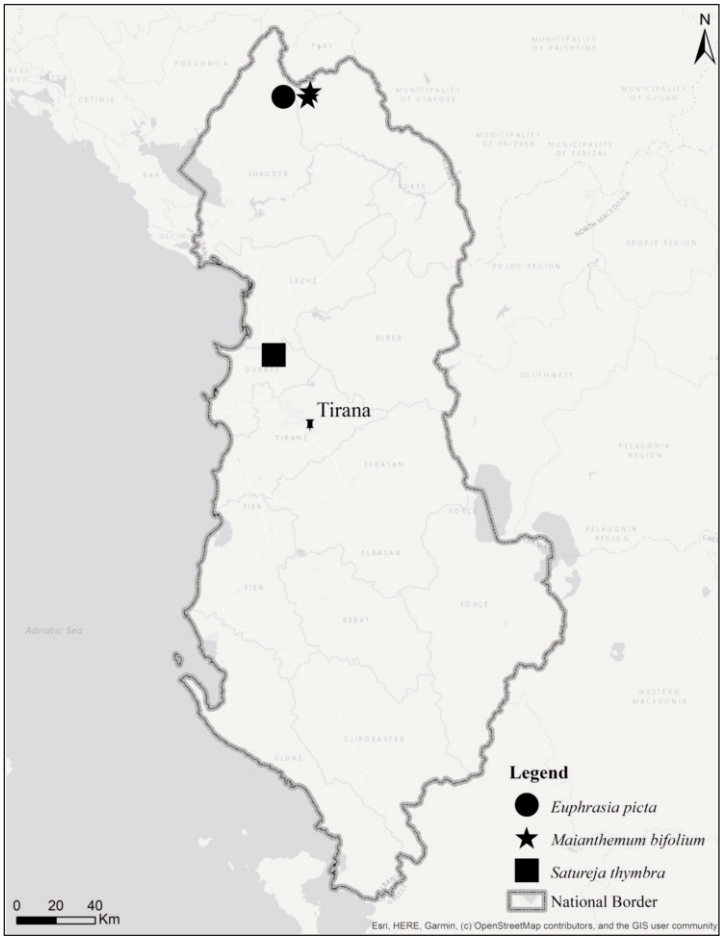



Fig. 4. Distribution map of the three plant species newly recorded for Albania.

Three of these newly recorded species for the Flora of Albania exhibit a highly restricted distribution range. Although further research is required to better delineate their geographic extent, the implementation of conservation measures at the national level should be considered a priority.

Among these taxa, *Maianthemum bifolium* is of particular concern due to its narrow distribution, both within Albania and across the Balkan region. This species should be formally proposed for inclusion in the Albanian Red List. It is currently classified as Endangered (EN) at the regional level (Ostojić & al. 2020) and is also listed as Vulnerable (VU) in the Vascular Plant Red List for England (2014), highlighting its broader conservation significance.

*Maianthemum bifolium* is a characteristic component of Norway spruce (*Picea abies* (L.) H.Karst.) forests (Purina & al. 2016), and in Albania, it occurs within mixed spruce–

beech stands in Valbona Valley. Its limited distribution, coupled with increasing anthropogenic pressures, particularly tourism-related construction, and the impacts of climate change, poses a serious threat to the persistence of its local populations.

Given its conservation status at both regional and international levels, as well as the specific threats to its Albanian populations, *M. bifolium* warrants inclusion in the updated Albanian Red List as an Endangered (EN) species.

## Conclusion

The discovery of *Maianthemum bifolium, Satureja thymbra,* and *Euphrasia picta* represents a significant contribution to the knowledge of Albania's vascular flora and its biogeographical context within the Balkans. These records extend the known distribution ranges of all three taxa, document the first occurrence of the genus *Maianthemum* in Albania, and highlight previously unrecognized northern and southern distribution limits in the region.

The findings underscore the floristic underexploration of Albania, particularly in ecologically diverse and topographically complex areas. They also emphasize the importance of continued field surveys, herbarium research, and taxonomic revisions in refining the national flora and supporting conservation planning.

Among the recorded taxa, *M. bifolium* stands out for its very limited distribution and regional threat status, warranting its inclusion in the updated Albanian Red List as an Endangered (EN) species. Targeted monitoring, habitat protection, and population studies are recommended to ensure the long-term conservation of this species and to better assess the status of *S. thymbra* and *E. picta* in Albania.

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