

Recent and historical distribution of *Hemipilia cucullata* in Latvia and Estonia

Rainar KURBEL & Toomas HIRSE

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Zusammenfassung/Summary:

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Hemipilia cucullata ist eine eurasisch verbreitete Orchidee, deren Areal sich von Osteuropa bis nach Ostasien erstreckt. In Europa bestehen heute nur noch wenige, meist isolierte Vorkommen. Die Art besiedelt feuchte, moosreiche Wälder; zahlreiche Bestände sind in den vergangenen Jahrzehnten infolge von Lebensraumverlusten stark zurückgegangen. Der Beitrag beleuchtet die historische und aktuelle Verbreitung in Lettland und berichtet über den Erstdnachweis für Estland im Jahr 2024 mit mehreren hundert Pflanzen.

Hemipilia cucullata is a Eurasian orchid distributed from Eastern Europe to East Asia. In Europe, only a few mostly isolated populations remain. The species inhabits moist, moss-rich forests, and many populations have declined in recent decades due to habitat loss. This article reviews the historical and current distribution in Latvia and reports the first record for Estonia in 2024, where several hundred individuals were documented.

Introduction

Hemipilia cucullata (formerly known as *Ponerorchis cucullata* or *Neottianthe cucullata*) is a terrestrial orchid with a broad native distribution across tempera-

te Eurasia, ranging from Eastern Europe to temperate East Asia and the Himalayas. Native range includes Poland (WISNIEWSKI & KLEIN 1976), Lithuania, Lat-



Fig. 1: *Hemipilia cucullata*, Daugavas loki, Latvia, 30.07.2011 [R. KURBEL].



Fig. 2: *Hemipilia cucullata*, Valgamaa, Estonia, 27.07.2024 [R. KURBEL].



Fig. 3: *Hemipilia cucullata*, Valgamaa, Estonia, 27.07.2024 [R. KURBEL].



Fig. 4: *Hemipilia cucullata*, Valgamaa, Estonia, 03.08.2025 [R. KURBEL].



Fig. 5: *Hemipilia cucullata*, Valgamaa, Estonia, 03.08.2025 [R. KURBEL].

via (CEPURITE 2005), Estonia, Belarus (LEBEDKO 2017), Ukraine (MELNYK & BARANSKY 2025), Russia, Kazakhstan (KUBENTAYEV et al. 2023), China, Mongolia, Korea, Japan, and Nepal. Predominantly *Hemipilia cucullata* grows in moist, shaded, mossy soils of coniferous or mixed forests, as well as alpine grasslands and meadows at higher elevations. Altitudinal range extends from 2,700 m

to 4,500 m in Asia, lower elevations (up to 500 m) in Europe and Siberia.

Hemipilia cucullata is the most widespread species in the genus, with a range that far surpasses any of its relatives. The genus *Hemipilia* includes around 73 accepted species distributed from eastern Europe across temperate Asia to northern Indochina.

Description

Plant is small, usually 10–25 cm tall. Tuber ovoid or spherical. Usually with two subopposite basal leaves (length 30–60 and width 15–35 mm). The leaf is elliptic or ovate-lanceolate, green, yellowish green to bluish green. Inflorescence 6–20 cm, often one sided, erect, dense 5 to 20-flowered. Flowers uniformly pink or bluish purple. The name *cucullata* ("hooded") refers to the hood-

shaped dorsal sepal that arches over the column, forming a protective canopy. Petals are narrow and lie against the hood, while the lateral sepals spread outward or downward. The lip is deeply divided into three lobes. Mid-lobe tongue-shaped and pointed on upper white area. The spur contains nectar, which attracts bumblebees. In Europe it blooms from mid-July to late August.

History and distribution in Europe

The earliest records of the species occurrence in Lithuania (JUNDZIL 1791) and Belarus (GILIBERT 1782 in PARFENOV 2017) date back to the late 18th century. The first documented mention in Poland goes back to the early 19th century.

The number of known locations has decreased dramatically over the past

century (map), mainly because habitat loss from deforestation disrupted soil moisture and mycorrhizal fungi. In Poland only a few sites have remained in northeastern part, particularly near the Augustów Canal and within Wigry National Park.

Before World War II, the species was also known in East Prussia (today Kali-



Fig. 6: Distribution of *Hemipilia cucullata*.

ningrad enclave, Russia). In Lithuania, the species can be found in the eastern part of the country, where are presented most abundant populations in European distribution part. In recent years also some new locations have been reported from Lithuania. In Belarus it occurs in

areas bordering Lithuania and Poland, and to a lesser extent in the eastern part of the country. In Ukraine between 1805 and 2018 were recorded 45 local populations and today, only one known population remains, in Kremenets Mountains National Nature Park.

History and distribution in Latvia

The first documented record in the literature comes from near Tukums (LINDEMANN & SIERING 1847) in western Latvia. The first herbarium specimen was collected near Medumi (southeastern Latvia) in 1858 by the botanist E. LĒMANIS. The results of his investigation were published in LEHMANN (1859).

Just three years later, in 1861, the species was found again in western Latvia near Tērvete by T. BĪNERTS according to an abstract from the 52nd International Scientific Conference of Daugavpils University.

After a gap of 129 years, the species was rediscovered in 1990 (I. FATARE) in the Daugavas loki Nature Park, on the left bank of the Daugava River near Rozališķi. In 2007 and 2009, additional findings of vital populations were reported from the same region (P. EVARTS-BUNDERS). In 2009, a population was also discovered on the right bank of the Daugava, in the Ververi bend near Rudāni (U. SUŠKO). Since then, the populations in the Daugavas loki Nature Park have become the most numerous in Latvia, with several hundred flowering specimens counted.



Fig. 7: *Hemipilia cucullata* in northern Latvia, 27.07.2024 [R. KURBEL].

Unfortunately, the species has not been rediscovered in the Tukums or Medumi areas during the 20th and 21st century. There had also been some uncertainty about recent observations in Tērvete until July 21, 2024, when we confirmed the species presence there. The site was relatively small (about 1 hectare) compared to the surrounding suitable forest

habitat. We counted exactly 350 flowering plants.

Important news followed just six days later, on July 27, 2024, from northern Latvia (Apes Municipality), not far from the Gauja River. In this entirely new location, we counted 122 flowering plants in an area of approximately half a hectare.

Estonia - a new country in the European distribution

Encouraged by the discovery of plants in northern Latvia, we conducted surveys on the Estonian side of the border — with great success! On July 26, 2024, in Valga County, we recorded 292 flowering plants within an area of about one hectare. In August 2025, we counted 376 flowering plants and observed numerous vegetative ones. The increase in abundance may have been influenced by a wetter summer compared to previous years.

The site is located on the Gauja River basin. It is semi-shaded, mossy pine

forest with a sparse herb layer. The understory is dominated by cowberry (*Vaccinium vitis-idaea*) and bilberry (*Vaccinium myrtillus*). Occasional spruces and birches are also present, along with a few young oaks. The soil is sandy, with some calcareous influence. Similar forest types are widespread in the surrounding area, as at the Latvian sites, so further surveys should be conducted.

Since May 2025, the species has been included in the list of the most strictly protected plants in Estonia.

Acknowledgements

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Fig. 8: Valgamaa, Estonia, 27.07.2024 [R. KURBEL].



Fig. 9: Valgamaa, Estonia, 03.08.2025 [R. KURBEL].

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Authors' adresses:

Rainar KURBEL, Õismäe tee 90, Tallinn 13513, Estonia

Toomas HIRSE, Metsasarve tee 2/6, Lohkva, Luunja vald, 62207 Tartumaa, Estonia