

***Diphasiastrum oellgaardii* – a new species in the flora of the Czech Republic**

Diphasiastrum oellgaardii – nový druh ve flóře České republiky

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Procházka F. (1997): *Diphasiastrum oellgaardii* – a new species in the flora of the Czech Republic. – Preslia, Praha, 69: 169–173.

So far, only five species of *Diphasiastrum* have been reported from the Czech Republic, i.e. *D. alpinum*, *D. tristachyum*, *D. complanatum*, *D. issleri*, and *D. zeilleri*. The study of herbarium material (PRC) revealed one more species: *Diphasiastrum oellgaardii* Stoor, Boudrie, Jérôme, Horn et Bennert. This species was collected in the central part of the Šumava Mts., SW Bohemia. The localities recorded in the Czech Republic represent the easternmost limits of the known distribution range of the species.

Key words: *Diphasiastrum oellgaardii*, Czech Republic

A new species of the genus *Diphasiastrum* Holub was described in September 1996 by German (Anu M. Stoor, H. Wilfried Bennert, and Karsten Horn) and French (Michael Boudrie and Claude Jérôme) botanists. Its name is *D. oellgaardii* Stoor, Boudrie, Jérôme, Horn et Bennert, and by its characteristic features, it occupies an intermediate position between *D. alpinum* and *D. tristachyum*.

There are three basic species in the genus, i.e. *D. alpinum* (L.) Holub, *D. complanatum* (L.) Holub, and *D. tristachyum* (Pursh) Holub, that occur in Central Europe (in its broadest sense). Of these three species native to Europe, two parental combinations of two hybridogenous species have been described and broadly accepted: *D. zeilleri* (Rouy) Holub, an intermediate type between *D. complanatum* and *D. tristachyum*, and *D. issleri* (Rouy) Holub, a hybrid of *D. alpinum* and *D. complanatum*. The third theoretically possible case, i.e. a taxon evolved in the past through hybridization between *D. alpinum* and *D. tristachyum*, has not been known. J. Holub was the first who, during his lectures at Praha (Prague) on 7 November 1960, and then in České Budějovice on 24 April 1961, called attention to its probable existence, namely in the flora of the Czech Republic (Holub 1961: 402). The same opinion was published by the present author a few years later in his work on *Pteridophytes* of the Šumava Mts (Procházka 1965: 43–44).

Plants collected by the present author in the Šumava Mts during the late 1950s were kept in the Herbarium of the Department of Botany, Charles University Prague (PRC) and labelled there by J. Holub as an intermediate type “*D. alpinum* – *D. tristachyum*”. Holub (1975) then came to the final conclusion that two taxa were included under the name *D. issleri*: the one corresponding to the type, and another, at that time undescribed, hybridogenous taxon of the *D. alpinum* and *D. tristachyum* parentage. Holub (l.c.) correctly delimited and tentatively named this taxon *Diphasium pseudo-issleri*: “Revising herbarium material of *Diphasiastrum*, collected by F. Procházka in the Bohemian Forest (Šumava Mts) years ago, I found interesting plants closely related to *D. lxl issleri*, combining

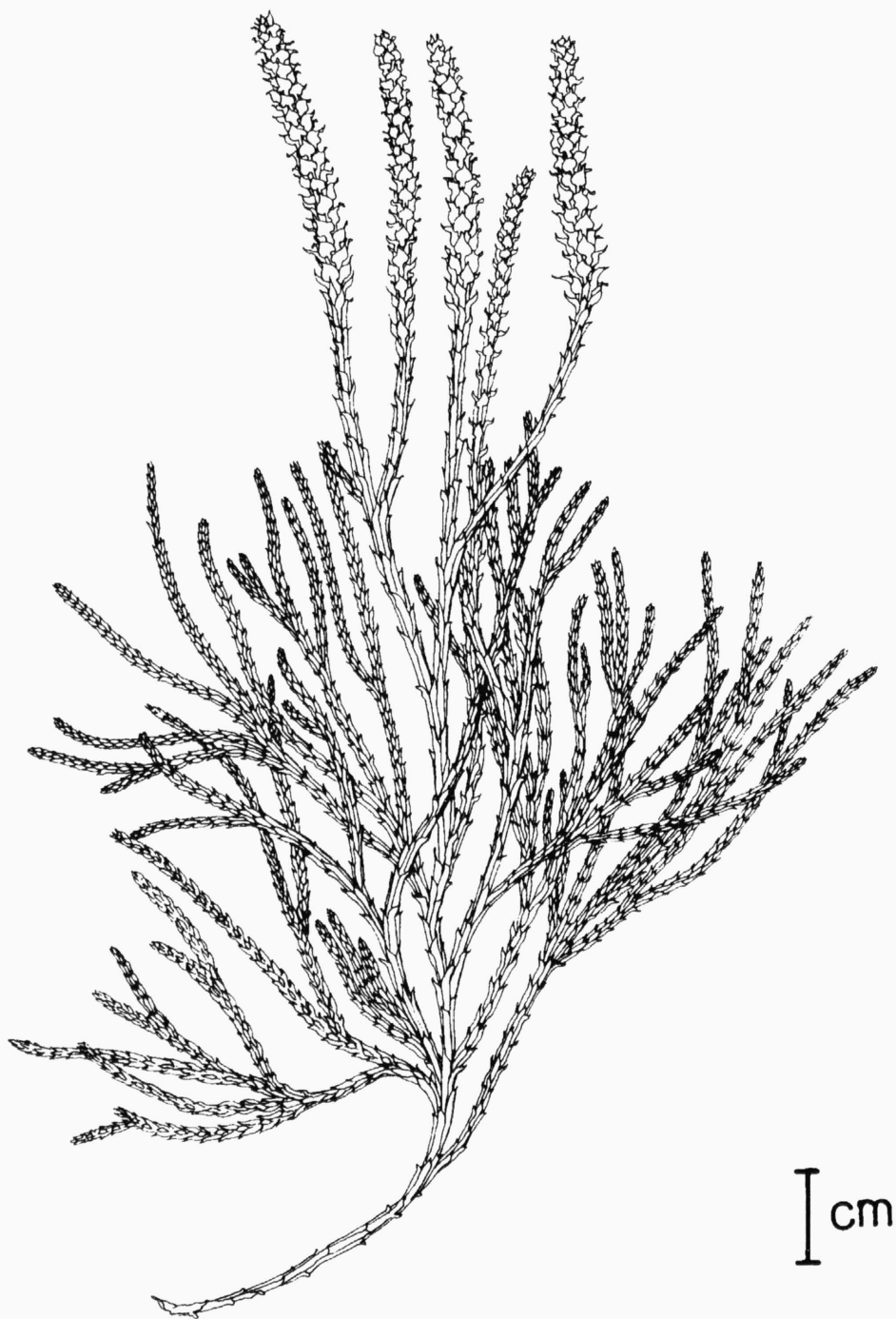


Fig. 1. – *Diphasiastrum oellgaardii* from the locality near of the village Srní (SW Bohemia, Šumava Mts).
Del. A. Skoumalová.

characters of *D. alpinum* and *D. tristachyum*. The plants were distinctly bluegreen (the colour was still preserved in the herbarium material), branchlets were narrow, only slightly flattened, ventral leaves slightly narrowed to the base, somewhat removed from the stem in their lower portion but inclining to it by the top, hardly different from lateral leaves, with the top reaching the following ventral leaf. The main stem is missing but seems to have been subterranean as in *D. tristachyum*. In my personal notes from that time this material was tentatively named '*Diphasium pseudo-issleri*'. Having been unable to study these plants in the field, I have abstained from any taxonomic treatment. Procházka (1965, 1966) later mentioned these plants. Further study is required. Literature data on *D. lxlssleri* may partly belong to this taxon, as for instance those from the Massif Central in France (Chassagne 1956), where *D. complanatum* is not known to occur." The quoted statements have been fully accepted by the author of the genus *Diphasiastrum* in the Flora of the Czech Republic (Kubát 1988: 199).

A few decades later, German and French authors (Stoor et al. 1996) without any knowledge of the above results of the studies on Czech material of the genus *Diphasiastrum* (Holub 1961, 1975; Procházka 1965, 1966; Kubát 1988) validly described the hybrid of *D. alpinum* and *D. tristachyum* as a new species, and named it *D. oellgaardii*. They collected the material in France on 24 August 1993 "...on a skiing track within a mountain heathland community dominated by *Calluna vulgaris*, *Vaccinium myrtillus* and *V. vitis-idaea* at Champ du Feu, commune of Le Hochwald, west Barr, Vosges Dépt. Bas-Rhin, c. 970 m a.s.l." (Stoor et al. 1996). They also proved the hybridogenous origin of the new taxon as an intermediate between *D. alpinum* and *D. tristachyum* by means of gel isozyme analyses; glucose-6-phosphate isomerase and esterase turned out to be electrophoretic markers. Outside France these authors reported the occurrence of the new taxon also from Denmark and Germany.

Following the above mentioned studies (Holub 1975, Stoor et al. 1996) I have studied the herbarium material kept in PRC and found that the newly described species *D. oellgaardii* is also present in the flora of the Czech Republic. The following information should be therefore added to the Flora of the Czech Republic:

Diphasiastrum oellgaardii Stoor, Boudrie, Jérôme, Horn et Bennert, Feddes Repert. 107: 154, 1996

Syn.: *Diphasium pseudo-issleri* Holub Preslia 47: 236, 1975 (nom. provis.)

So far, the species has been recorded in the Czech Republic in the Oreophyticum of the Central Šumava Mts, growing only in the following three localities:

1. *Callunetum* on the hillside above the left bank of the Vydra River (direction to the village of Srní), granite, alt. ca 760 m (leg. F. Procházka, 23.8.1959, PRC – Fig. 1)
2. On the mountain ridge between the lake Prášilské jezero and the Mt. Poledník, alt. 1100–1300 m (leg. F. Procházka, 23.8.1958, PRC)
3. Southern slope of the Mt. Tetřev SE of Filipova Huť, alt. ca 1150 m (leg. F. Procházka, 1960, PRC)

The correctness of my identification has been revised by one of the authors of the taxon, Karsten Horn from Erlangen, Germany, who saw the plant material from the first of the

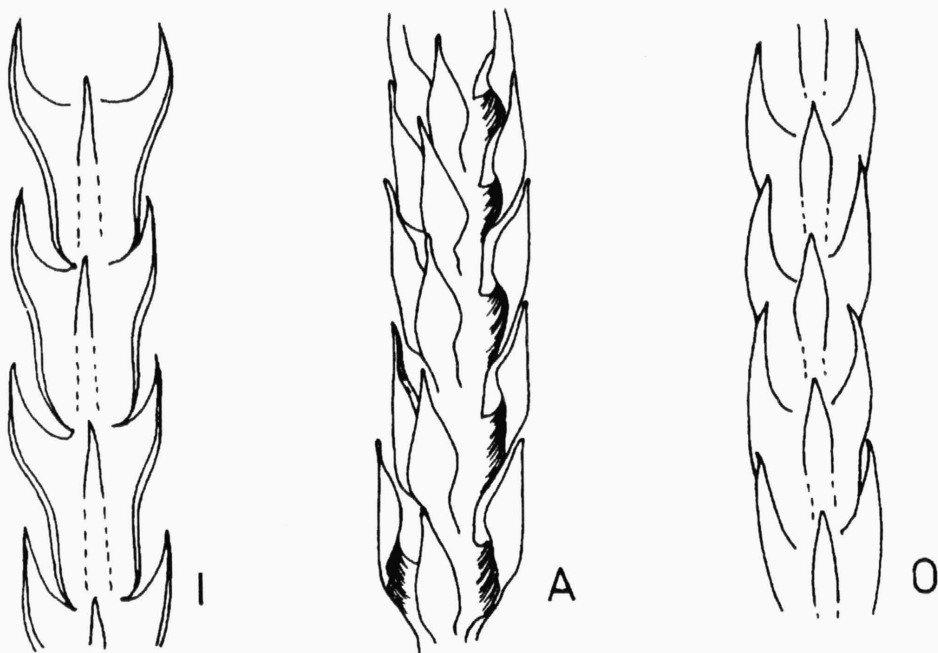


Fig. 2. – Ventral side of sterile branches of Central European monostachyous species of the *Diphasiastrum*: I – *D. issleri*, A – *D. alpinum*, O – *D. oellgaardii*. Del. J. Kovářková.

above localities. According to his new investigations, *D. oellgaardii* also occurs on the Bavarian side of the Šumava Mts (Horn, pers. com.).

During the last few years, the occurrence of *D. oellgaardii* was proved neither by my occasional visits to its localities on the Czech side of the mountains, nor during joint investigation with K. Horn in 1996. Similarly, an extensive floristic research in the Czech part of the Šumava Mts, carried out by a number of co-workers during the last five years, only yielded the verification of the occurrence of five species of *Diphasiastrum* already known in the flora of the Czech Republic. As there are no recent reports on the presence of *D. oellgaardii* from our territory, the species must be considered as missing. Nevertheless, the Czech localities represent the easternmost limits of the known distribution range of this species.

Acknowledgments

The author acknowledges the technical help of J. Hadinec (herbarium PRC) and language assistance of J. Osbornová and J. Kirschner. The work was partly supported by a grant from the Agency of the Nature and Landscape Conservation of the Czech Republic (Project VaV/610/1/96, DÚ 02).

Souhrn

Dosud byly z České republiky známy jen tři „základní“ druhy rodu *Diphasiastrum* Holub (*D. alpinum*, *D. complanatum* a *D. tristachyum*) a dva hybridogenní taxony, hodnocené všeobecně jako samostatné druhy *D. zeilleri* a *D. issleri*). Na základě publikování platného druhového jména pro dosud chybějící hybridogenní

kombinaci *D. alpinum* – *D. tristachyum* = *D. oellgaardii* Stoor, Boudrie, Jérôme, Horn et Bennert 1996, již před desetiletími identifikovanou českými botaniky (Holub, Procházka, Kubát), byl znovu prostudován herbářový materiál PRC. Rostliny jednoznačně náležející k nově popsanému druhu byly u nás sbírány na sklonku padesátých let na Šumavě. Jde o nový druh české flóry a naše lokality (na nichž nebyl v posledních letech ověřen aktuální výskyt) představují zatím nejvýhodnější hranici dosud známého areálu tohoto nedávno popsaného druhu.

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Received 17 March 1997

Accepted 26 March 1997