

## **Lectotypification of *Carex nemorosa* var. *cuprina* and clarification of *C. cuprina* (Cyperaceae)**

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JACOB KOOPMAN<sup>1</sup>

## Lectotypification of *Carex nemorosa* var. *cuprina* and clarification of *C. cuprina* (Cyperaceae)

### Abstract

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For several decades during which *Carex cuprina* (Sándor ex Heuff.) T. Nendtv. ex A. Kern. has been regarded as conspecific with *C. otrubae* Podp. there has been discussion about what is the correct application of the name *C. cuprina*. It is demonstrated here that the original material of the basionym of *C. cuprina*, i.e. *C. nemorosa* var. *cuprina* Sándor ex Heuff. on sheet BP604990 in the herbarium of the Hungarian Natural History Museum (BP) in fact belongs to the species currently known as *C. leersii* F. W. Schultz, as T. Egorova already made clear during her visit to that herbarium in 2003. The name *C. nemorosa* var. *cuprina* is lectotypified with this specimen. Therefore the correct name for what has been variously called *C. cuprina* or *C. otrubae* is *C. otrubae*, whereas *C. cuprina* is an earlier name for *C. leersii*. The name *C. leersii* is already conserved against the earlier homonym *C. leersii* Willd. and the simultaneously published heterotypic synonym *C. chabertii* F. W. Schultz. It is suggested here that *C. leersii* should be proposed for conservation also against *C. cuprina*.

Additional key words: *Carex* sect. *Phaestoglochin*, *Carex* sect. *Vulpinae*, *Carex* subg. *Vigneae*

### Introduction

The name *Carex cuprina* (Sándor ex Heuff.) T. Nendtv. ex A. Kern. has been applied to various taxa. It has been treated as synonymous with *C. pairaei* F. W. Schultz (Krechetovich 1935; Bljev 1964; Hylander 1966), with *C. otrubae* Podp. (Chater 1980, as nom. nud. with “?”; Meijden 1996, nom. nud.; Király 2009) and with *C. muricata* L. (Egorova 1999, with “?”). It has also been frequently mentioned in relation to *C. vulpina* L., e.g. by Soó (1973). It is missing in Hegi (1908), Jávorka (1925) and Hayek (1932–1933). On the other hand, there are authors who have accepted the name *C. cuprina* as correct, with *C. otrubae* in synonymy, e.g. Soó (1973), Luceño (1994, 2007) and Jiménez-Mejías & Luceño (2011). In order to clarify the correct application of *C. cuprina*, its basionym, *C. nemorosa* var. *cuprina* Sándor ex Heuff., has to be lectotypified.

### History of the name *Carex cuprina*

The name *Carex cuprina* first appeared on herbarium labels of József Sándor (see below). Sándor’s herbarium specimens are without date. Sándor was a hardly known Hungarian botanist, despite the fact that, according to Gombocz (1936), he was a plant collector in the first half of the 19th century in contact with contemporary botanists. He possessed a remarkable plant collection, which is now accessible in the herbarium of the Hungarian Natural History Museum, Budapest (BP). The name *C. cuprina* appeared again in a manuscript by Károly Nendtvich (1811–1892) as “*Carex cuprina* mihi”, for which Nendtvich had used the correspondence between his father, Tamás Nendtvich, and Sándor (Kerner 1863). The taxon was not included in Nendtvich’s subsequently published thesis (1836). However, Nendtvich’s manuscript was reviewed and published much later by Kerner

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(1863), who revealed that Sándor's and Nendtvich's *C. cuprina* were one and the same plant. However, Kerner simply listed the name without any additional information or a proper description.

Around the same time, Heuffel (1862) published, under "*C[arex]. nemorosa* Host", "*β. Cuprina* Sánd. herb." with the diagnosis "*Spica subdecomposita, spiculis binatis, una sessili altera pedunculata; valvis spadiceo-ferugineis, rufisve.*" Therefore, the taxon was first validly named by Heuffel, as *C. nemorosa* var. *cuprina* Sándor ex Heuff., together with a clear reference to Sándor's herbarium. The next year, Kerner (1863) directly referred to Heuffel's publication and adopted the name *C. cuprina*, ascribing it to Nendtvich, creating a new combination for the taxon at specific rank, *C. cuprina* (Sándor ex Heuff.) T. Nendtv. ex A. Kern.

## Results and Discussion

### Lectotypification of *Carex nemorosa* var. *cuprina*

According to Gombocz (1936), Sándor's herbarium was donated to the Botanical Garden of Rolando Eötvös University, Budapest. The material can now be found in the herbarium of the Hungarian Natural History Museum (BP). Altogether seven potentially relevant sheets with plants collected by Sándor, six with labels in Sándor's handwriting and three annotated by him as *Carex cuprina*, can be found in this herbarium, as follows.

(1) Sheet BP21431 – There is a label by Sándor with the annotations "*Carex cuprina* Sándor! / Lecta in humidis circa Pest et Budam. Majo, Junio. / Sándor." and, in a different hand, "teste spec. orig. in Herb. Heuffel." The sheet includes one incomplete plant comprising one inflorescence and three leaves. There are determinations from Herb. Simonkai as "*C. nemorosa* Lumn." (= *C. divulsa* Stokes), by Soó as *C. otrubae*, and by T. Egorova as "*Carex polyphylla* Kar. & Kir. (= *C. leersii* F. Schultz, = *C. cuprina* (Sand. ex Heuff.) Nendtv. ex Kern., = *C. pairaei* F. Schultz subsp. *leersii* (F. Schultz) Jáv.), i.e. *C. leersii* F. W. Schultz. The material undoubtedly belongs to *C. leersii* as currently understood and not to *C. divulsa* or *C. otrubae*.

(2) Sheet BP46022 – There is a label by Sándor with the name "*Carex nemorosa* δ". Also stamped on this label is "Ex herbario D<sup>ris</sup> L. Heuffel", indicating that this specimen was seen by Heuffel. The sheet includes two plants: a sterile one on the left and a plant on the right with two inflorescences marked "+" by Egorova. On the right-hand side of the right-hand plant is a third inflorescence, marked "V" by Egorova, that apparently does not belong to the plant. A label by B. Kovács determines the sheet as *C. vulpina*. Two labels by Egorova determine the right-hand plant as *C. otrubae* and presumably the anomalous inflorescence as *C. leersii* (with the same synonymy as on the label on sheet BP21431). I concur with Egorova's determinations.

(3) Sheet BP498780 – A paper capsule bears the name *Carex vulpina* in the hand of Simonkai (as "Simkovics L.") and contains a label annotated by Sándor with "*Carex cuprina* Sándor" followed by a Latin description, discussion and provenance "circa Pest et Budam". There are two plants on this sheet. The two inflorescences of the left-hand plant, marked "+" by Egorova, are crowded, without gaps between the spikes, as can be seen in the two inflorescences of the right-hand plant, marked "V" by Egorova. Two labels by Egorova determine the left-hand plant as *Carex otrubae* and the right-hand plant as *C. polyphylla* (with the same synonymy as on the label on sheet BP21431), i.e. *C. leersii*. I concur with Egorova's determinations.

(4) Sheet BP498791 – A label by Sándor bears the name "*Carex nemorosa*? Willd." followed by a Latin description. There are three plants on this sheet. A label by Egorova determines the left-hand plant (and presumably also the middle one) as "*Carex cuprina* (Sand. ex Heuff.) Nendtv. ex Kern. (= *C. otrubae* Podp.)". This is somewhat confusing because on her other labels she treats *C. cuprina* as a synonym of *C. polyphylla*. Anyway, the specimen is *C. otrubae*. Another label by Egorova determines the right-hand specimen as *C. vulpina*. I concur with this.

(5) Sheet BP498868 – A label by Sándor bears the name "*Carex vulpina* Linn." followed by a Latin description. There are six plants on this sheet. The material belongs to *C. otrubae*.

(6) Sheet BP604828 – This sheet includes two plants, both with labels from Herb. J. Sadler bearing the name *C. vulpina*. A label by L. Felföldy determines the right-hand plant as *C. cuprina*. Both plants are *C. otrubae*.

(7) Sheet BP604990 (Fig. 1) – A label by Sándor bears the name "*Carex cuprina* mihi" followed by a detailed Latin description. Also stamped on this label is "Ex herbario D<sup>ris</sup> L. Heuffel", indicating that this specimen was seen by Heuffel. The sheet includes two plants with a separate inflorescence that may belong with the left-hand plant. A label by Kovács determines the left-hand plant as *C. vulpina*. A label by Egorova determines the right-hand plant as *C. polyphylla* (with the same synonymy as on the label on sheet BP21431), i.e. *C. leersii*. The material indeed belongs to *C. leersii*. Because this material was annotated as *C. cuprina* by Sándor and because it was evidently used by both Sándor and Heuffel for their descriptions of the taxon, it qualifies as original material for the name *C. nemorosa* var. *cuprina* (McNeill & al. 2012: Art. 9.3). I therefore designate it here as the lectotype. However, I exclude the plant with the separate inflorescence on the left-hand side of the sheet because it has rather narrow leaves, c. 2 mm wide, suggesting it is perhaps not the same taxon.

*Carex nemorosa* var. *cuprina* Sándor ex Heuff. in Linnaea 31: 662. 1863 ≡ *Carex cuprina* (Sándor ex Heuff.) T. Nendtv. ex A. Kern. in Verh. K. K. Zool.-Bot. Ges. Wien 13: 566. 1863.



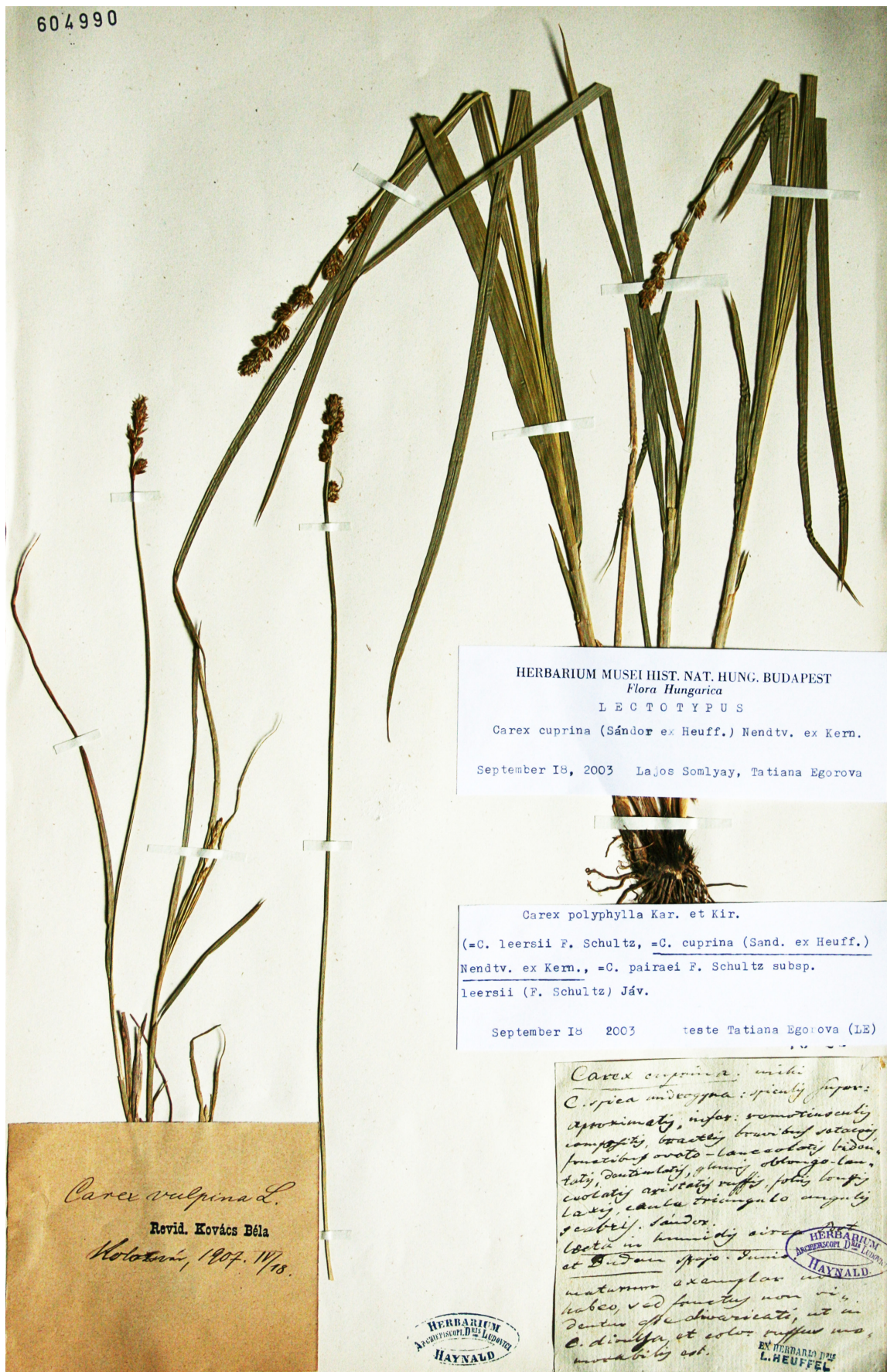


Fig. 1. Lectotype of *Carex nemorosa* var. *cuprina* – BP604990, the right-hand plant on the sheet.



**Lectotype (designated here):** “*Carex cuprina* mihi.”, “Lecta in humidis circa Pest et Budam Majo-Junio” (BP604990 – right-hand, larger plant only) (Fig. 1).

According to another label on the lectotype specimen, Somlyay and Egorova already in 2003 intended it to be designated as the lectotype. This designation has not, until now, been effectively published. Here I follow Somlyay and Egorova’s intention.

### Identity of *Carex cuprina*

Scans of all seven sheets mentioned above were seen. However, Egorova studied the material in situ at BP in 2003. According to Egorova, the material of the lectotype designated here belongs to *C. leersii* as currently understood and not to *C. otrubae*, which was treated as a synonym of *C. cuprina* by Soó (1973). Very probably Soó did not see all the material and based his opinion on only a part of it. In any case, Soó did not lectotypify the name *C. nemorosa* var. *cuprina*.

I agree with Egorova’s view that the lectotype designated here, although it is not mature material, belongs to *Carex leersii* as currently understood. That species has a blunt ligule, whereas *C. otrubae* has an acute one. Besides, the inflorescence of *C. leersii* has (lower) spikes separated from each other, as can be seen in Fig. 1, whereas *C. otrubae* has a dense inflorescence, without gaps (Chater 1980). The stem of the lectotype is also too thin for *C. otrubae*. Finally, one can also see in Fig. 1 the absence of bristle-like bracts, which are so characteristic for *C. otrubae*. The present lectotypification therefore makes *C. cuprina* a senior heterotypic synonym of *C. leersii*.

### Conclusions

Sándor’s material associated with *Carex cuprina*, on seven sheets at BP, includes three species, which previous revisions had already made clear: *C. leersii*, *C. otrubae* and *C. vulpina*. However, only one of the specimens displays enough evidence to be considered as the original material on which the validating diagnosis of *C. nemorosa* var. *cuprina* could have been based. Even though *C. cuprina* has sometimes been regarded as the correct name for the species better known as *C. otrubae* (e.g. Luceño 2007), I here lectotypify its basionym, *C. nemorosa* var. *cuprina*, on a specimen referable to *C. leersii*.

*Carex cuprina* proves to be a validly published, legitimate earlier name for the taxon traditionally and currently known by many (but not all) authors as *C. leersii*. Therefore, the name *C. cuprina* has priority. However, this would cause quite some nomenclatural confusion in an already extremely difficult group. Since Chater (1980), *C. leersii* has often been treated as a subspecies of *C. divulsa*, e.g. by Luceño (1994), Ball (2002), Jermy & al. (2007) and Luceño (2007). Then Jiménez-Mejías

& Luceño (2011) treated *C. leersii* as a mere synonym of *C. divulsa*, i.e. not separated at any rank. However, Molina & al. (2008a) made clear “that *C. divulsa* must be considered as separate from *C. leersii* at the species level”. This opinion has been accepted and followed by the World Checklist of Selected Plant Families (Govaerts & al. 2015) and Koopman (2011). Moreover, Hendrichs & al. (2004) found in a phylogenetic analysis that *C. leersii* is closer to *C. muricata* than to *C. divulsa*.

Molina & al. (2008b) made a proposal to conserve the name *Carex leersii* F. W. Schultz against the earlier homonym *C. leersii* Willd. and the simultaneously published heterotypic synonym *C. chabertii* F. W. Schultz. This proposal was accepted at the XVIII International Botanical Congress in Melbourne in 2011 and the name is now listed as thus conserved in Appendix IV of the International Code of Nomenclature for algae, fungi, and plants (Wiersema & al. 2015). Hence it is suggested that the name *C. leersii* should also be conserved against *C. cuprina*. I am preparing such a proposal.

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