

## Nomenclature of the British taxa of the *Carex muricata* L. aggregate

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### ABSTRACT

The nomenclatural problems surrounding the *Carex muricata* L. aggregate are discussed. The taxa as at present understood should be known as *C. spicata* Hudson, *C. lumnitzeri* (Rouy) Krecz., *C. muricata* L. subsp. *muricata*, *C. muricata* L. subsp. *pairaei* (F. W. Schultz) Čelak., *C. polyphylla* Kar. & Kir., *C. leersiana* Rauschert, *C. divulsa* Stokes and *C. chabertii* F. W. Schultz.

The *Carex muricata* L. aggregate comprises all the European taxa of *Carex* section *Muehlenbergianae* Tuckerm., and of these *C. polyphylla* Kar. & Kir., *C. divulsa* Stokes, *C. spicata* Hudson and *C. muricata* L. (to quote the names included in Dandy (1958)) are commonly recognized as British plants. Their nomenclature, however, has undergone a multiplicity of confusions. This has been primarily due to uncertainty as to what is the Linnaean type; but the initial error has been compounded by subsequent mistakes in determination (especially confusions with *C. otrubae* Podp.), by inadequate descriptions that often emphasize characters that are in fact indecisive, and by differing opinions as to the rank of the taxa included within the aggregate.

Linnaeus (1753) described *C. muricata* as follows: 'muricata. 8. CAREX spiculis subovatis sessilibus remotis androgynis, capsulis acutis divergentibus spinosis. *Fl. suec.* 753. *Gmel. sib.* I p. 148.' This original diagnosis could apply to several taxa in the aggregate; but Linnaeus' herbarium (LINN) contains a Swedish specimen marked in Linnaeus' own handwriting '8 muricata'. The use of the identical number and name directly connects the diagnosis and the specimen.

Nevertheless nineteenth-century botanists failed to notice this connection. Most of them, for example Koch (1837), merely lumped all taxa of the aggregate under the Linnaean name. The case of Crépin (1859) is instructive, for it illustrates both the failure of the earlier botanists to find satisfactory criteria for the distinguishing of the individual taxa, and the distinctiveness of the taxa when such criteria are found. Crépin cited two varieties of '*C. muricata*':  $\alpha$  *genuina* Grenier & Godron, and  $\beta$  *virens* Koch. From each of these he segregated a subvariety, *incrassata*, distinguished by the thickened base of its utricle. Such utricles are found only in the taxon isolated by Hoppe (Sturm 1833) as *C. contigua* and now known as *C. spicata* Hudson. Evidently each of the varieties cited by Crépin was in itself a conglomerate of several taxa of the aggregate, including *C. spicata*, which he correctly separated out from each of the two conglomerates.

Other attempts were made, as for example by Andersson (1849) and by Neuman (1901), to distinguish the individual taxa of the aggregate at least as subspecies or varieties, but these attempts appear to be no more soundly based than those of Grenier & Godron or of Koch. There was, however, through the century, a growing tendency, exemplified in Ascherson & Graebner (1902), to apply the Linnaean name not in its original sense but to *C. contigua*. Nelmes (1942) following Mackenzie (1935), produced evidence that the correct prior name for *C. contigua* is *C. spicata* Hudson. Though that evidence is not very weighty, the identification and the name have been generally accepted.

To the original uncertainty about the identity of *C. muricata* a further complication was added by Linnaeus' Swedish pupil, Johann Andreas Murray, who (Murray 1770) described *Carex echinata*. Formerly in LINN, but in January 1963 transferred to BM, is a sheet of four stems collected by Murray near Göttingen and inscribed by him '*Carex echinata*'. These specimens in fact belong to a taxon of the *C. muricata* aggregate identical with or near to Linnaeus' type-specimen of *C. muricata*. Attempts to resolve this contradiction have followed two opposing lines. On the one hand, Kükenthal (1905, 1909) took *C. echinata* Murray to be the correct name of *C. muricata*

and rejected the latter altogether as a *nomen delendum* on the grounds that it covered several members of the aggregate. In support of this view he observed (1909, p. 156 note 2) that the Linnaean herbarium contained, in addition to the specimen labelled *C. muricata*, an unnamed specimen of *C. divulsa* (which is true) and also an unnamed specimen of *C. contigua*. There is, however, no specimen of this last taxon in Linnaeus' own collection. It was probably in one of the subsidiary collections (e.g. Murray's) that have lately been transferred by the Linnean Society to other herbaria. On the other hand Mackenzie (1923), arguing with some force and citing not only Linnaeus' *Species Plantarum* but also his *Flora Suecica* which describes *C. muricata* as a plant of wet ground, took *C. muricata* L. to be the correct name for *C. echinata* Murray, which he dismissed as a later synonym. In this Mackenzie was followed by Kreczetovicz (1935) in *Flora URSS*.

Britten (1907), followed by Kovacs (1910), Briquet (1910), Fernald (1917), and de Langhe (1944), had shown, however, that Murray's published description of *C. echinata* referred without any possible doubt to the sedge otherwise known as *C. stellulata* Good.; and Nelmes (1959) implicitly rejected Mackenzie's argument, maintaining that, as Linnaeus labelled both his description and his specimen with the same reference number, '8 muricata', no confusion exists apart from the misidentifications of others, and that the name *C. muricata* should stand. Nelmes' conclusion is surely right, although Hylander (1966), who appears to have been unaware of Nelmes' 1959 paper (it was published in Russian), again rejected the name *C. muricata* as a *nomen ambiguum*.

The question remains: what is in fact the plant labelled *C. muricata* by Linnaeus? Nelmes (1947, emended 1959) distinguished a northern and eastern taxon growing on limestone, and a western taxon preferring acid sands and gravels. Linnaeus' type-specimen of *C. muricata* belongs to the northern taxon, although the glumes, which should be dark brown, are now quite bleached and the specimen is a less robust form than that described by Hylander (1966) as *C. pairae* [*sic*] subsp. *borealis*. As another example of the northern taxon Nelmes (1959) claimed *C. loliacea sensu* Schkuhr, *non* L. *neq* Schreber. as illustrated (the description is borrowed and applies to *C. loliacea* L.) in Plate Ee No. 91 of Schkuhr (1801).

Two other names, *C. nemorosa* Lumn. and *C. cuprina* (Sándor ex Heuffel) Nendtvich ex A. Kerner, have also been referred to the northern taxon. Schultz (1871) thought that he had shown *C. nemorosa* to be synonymous with *C. loliacea* Schkuhr *non* L. and therefore (in his eyes) with his own *C. pairae* of which it might, he thought, be the correct prior name. But in **BM** there is a specimen from the herbarium of J. J. Roemer (1763–1819) inscribed by him 'Carex 32 nemorosa Lumnitzer . . . Ab ipso accepi beatae memoriae D. Lumnitzer'; and this plant appears to be an immature specimen of that currently known as *C. otrubae*. It is certainly neither *C. muricata* L. nor its western relative. The name '*C. cuprina* (Sándor) Nendtvich' was adopted by Kreczetovicz (1935) as the correct name of the northern taxon after he had taken *C. muricata* to be the correct name for *C. echinata*. Nendtvich's name was not accompanied by a description and was therefore discarded by Hylander (1966) as a *nomen nudum*; but it was based on a Hungarian specimen in Sándor's herbarium which had been validly published, with a description, as *C. nemorosa*  $\beta$  *cuprina* Sándor. Sándor's specimen, however, as reported by Rauschert (1973), has lately been determined by Soó as *C. otrubae*, of which *C. cuprina* would accordingly appear to be the correct prior name. Kükenthal (1909, p. 156) is justified in his note: 'Alia quoque nomina non pauca quoad synonymiam semper in dubio remanebunt, cum species supra laudatae ante cl. Fr. Schultz, Étude sur quelques Carex (1868), Flora LIII. (1870) et LIV. (1871) non certe distinctae sint, insuper confusio cum *C. vulpina* timenda.' Both *C. nemorosa* Lumn. and '*C. cuprina* (Sándor) Nendtvich' are included in Kükenthal's list of *nomina dubia* and both should now disappear from the synonymy of the *C. muricata* aggregate.

The history of the naming of the western taxon is even more complicated. In June 1868 Michel Paira, of Geudertheim in Bas-Rhin (Alsace), sent to F. W. Schultz specimens of a sedge that grew plentifully in his neighbourhood. Schultz confessed that till then he had overlooked it, recognized that it differed both from *C. spicata* (which he then knew as *C. muricata*) and from *C. divulsa*, and proposed to describe it as a new species under the name *C. pairae* in honour of its discoverer. As 'Paira' and 'Pairaeus' are equally acceptable Latin forms of Paira's name, there is no need to make, as Hylander did, an orthographical correction to '*pairae*'.

Meanwhile there was further correspondence between the two men, in the course of which Paira said that he had taken his sedge to be the same as *C. loliacea sensu* Schkuhr *non* L.; and to show what he meant he sent Schkuhr's illustrations (Schkuhr 1801) to Schultz who did not himself

possess the book. Schultz (1868a) thereupon recorded in print: 'Die [in Schkuhr] Tafel Ee No 91, als *C. loliacea* abgebildete Pflanze entspricht vollkommen der von Hrn. Paira erhaltenen *Carex*'; and again (1868b): 'Ayant comparé le dessin de Schkuhr et les échantillons, j'ai reconnu sans hésiter que la ressemblance était exacte.'

Nelmes (1947) took *C. pairaei* to be the western taxon; and well he might, for Schultz's full Latin description (1868b) contains at least two sentences ('habitat . . . in montibus graniticis' and '*Carex muricata* [i.e. *C. spicata* Huds] differt . . . tempore florenti, in iisdem locis, multo precociori') that apply only to the western taxon and not at all to the northern. By 1959 Nelmes' colleague, A. A. Bullock, had called his attention to the fact that Schultz, in his first paper (1868a), had equated his *C. pairaei* with *C. loliacea sensu* Schkuhr and that, as the actual specimen described by Schultz could not be certainly identified, Schkuhr's illustration was the only type upon which Schultz's name could be based. As Schkuhr's plant was in Nelmes' view the northern taxon, it followed that *C. pairaei*, based upon it, could by the *International Code of Botanical Nomenclature* be regarded only as yet another synonym for that taxon (= *C. muricata* L. *sensu stricto*). In that case the western taxon still lacked a name, and Nelmes (1959) supplied it by describing the western plant as *C. bullockiana* Nelmes.

Now it is true that Schultz's first paper (1868a) is headed 'Carex muricata var.  $\beta$  Schkuhr (*C. loliacea* Schk., non Linné) als gute Art aufgestellt' and that he positively identified Paira's sedge with Schkuhr's illustration, though he did question whether the enlargement of the utricle can be a true representation. Yet in the same paper he made it very clear that what he set out to describe were the specimens sent to him by Paira, and he announced his intention to do two things: to issue a full description of Paira's plant, and to preserve the specimens as vouchers 'in der 12 Centurie meines herbarium normale.' In this first paper (Schultz 1868a) there is in fact no adequate description or reference to one, so that *C. pairaei* is there a *nomen nudum*. One must conclude that Schkuhr's illustration (even if the discrepancy in the utricle is disregarded) was not intended by Schultz to be a type; as explained above, he intended Paira's specimens to be the types. It may also be added that the source of Schkuhr's plant is unknown. He obtained it from an unnamed friend and the illustration did not indicate habitat or time of flowering. The only diagnostic characters that could be shown in a plate are the degree of divergence of the ripe utricles, their shape, and the colour of the glumes. On the first point Schkuhr's plate is ambivalent: the utricles are somewhat divergent but not more so than can be found in the western taxon. The illustration of the utricle is, as Schultz remarked, unsatisfactory: it does not correspond with that of either taxon. On the last point the evidence varies from copy to copy of the book according to the individual colourist responsible. For example, the copy in the Department of Botany, British Museum (Natural History), shows dark glumes contrasting with grey-green utricles—the northern taxon. The two copies owned by the Linnean Society show glumes and utricles that are almost concolorous—the western taxon. It is really not possible to say whether the plant illustrated is the one or the other.

Valid publication of *C. pairaei* was achieved, as Schultz had promised, in his *Étude sur quelques Carex* (Schultz 1868b). This contains a full Latin description, together with a drawing by Paira, both of which can only refer to the western taxon, while of the 'quelques cents exemplaires' received from Paira (Schultz 1868b) those distributed to a number of major herbaria are certainly that plant. They constitute genuine type-material, and I choose as lectotype the sheet ('dèc. et rec. M. Paira') in K dated 27 June and 9 July 1868. *C. pairaei* can therefore be retained as the name of the western taxon, while *C. bullockiana*, which (perhaps because it was published in a Russian journal) has never received much currency, becomes a later synonym.

In fact I am of the opinion, which is shared by Mr A. O. Chater, that the two taxa, while clearly distinct, do not merit more than subspecific rank. In that case the name of the northern taxon would be *C. muricata* L. subsp. *muricata*, and that of the western taxon *C. muricata* L. subsp. *pairaei* (F. W. Schultz) Čelak. It is ironical that the correctness of Čelakovský's combination is accidental, for his *C. muricata* is certainly not Linnaeus' and his *C. pairaei* is probably not Schultz's. *C. muricata* subsp. *pairaei* is not uncommon in Britain. *C. muricata* subsp. *muricata* is a rare plant there, and has at present been refound in only one of the four localities recorded by Nelmes (David & Kelcey 1975).

A plant apparently related to *C. spicata*, but of greater stature and with widely interrupted inflorescences, was described as *C. muricata* Race II *lumnitzeri* by Rouy (1912). Rouy noted that it

has 'écailles et utricules concolores, d'un vert blanchâtre.' This is more a character of *C. leersii* F. W. Schultz (see below) and Rouy may have been referring to that taxon, though he also listed *C. muricata* Race III *leerseana*, with uncharacteristic 'écailles ± brunâtres.' *C. lumnitzeri* was, however, accorded specific rank by Kreczetovicz (1935), who reported it to be widespread in western Europe and equated it with *C. contigua* var. *γ longissima* Tauscher ex Vollmann (Vollmann 1903). Kükenthal (1909) followed Vollmann in giving the plant this varietal rank but cited only a restricted distribution (Hungary). In Britain I have seen only two plants (in a single locality) that answer to the description of *C. lumnitzeri*, and there was some likelihood that they were hybrids between *C. spicata* and *C. otrubae*. A specimen from Tauscher's own herbarium, collected by him on 26 July 1869 and now in K (ex herb. Churchill), has no mature fruit and looks as if it might also be of this hybrid origin.

The one member of the aggregate whose name has never really been in doubt is *C. divulsa* Stokes (published in 1787), though for a time the name was given a later authority, *C. divulsa* Good. (published in 1794), which allowed the problematical *C. virens* Lam. (published in 1791) to qualify as a claimant for priority; and the plant, like all other members of the aggregate, has sometimes been reduced to subspecific or varietal rank.

Another taxon that has been put forward as the plant intended by Lamarck under his *C. virens* is the one later known as *C. leersii* F. W. Schultz. Lamarck's description is, however, quite inadequate and his specimen was reported by Winter (1870) to be even then in such poor condition that no conclusion whatever could be drawn from it. One may hope that the last to be heard of *C. virens* is the *requiescat* pronounced by Vollmann (1903) on this ghost-name that has troubled taxonomic discussion for so long and to such little effect.

*C. leersii* F. W. Schultz is almost certainly what Hoppe understood by *C. muricata* and illustrated under that name in Sturm (1833). The description by Schultz (1870) is, however, the first in which the plant was clearly differentiated, though the name *C. leersii* is, as a species, invalidated by Willdenow's earlier use of it as an illegitimate substitute for *C. echinata* Murray. Nelmes (1947) followed Kreczetovicz (1935) and Kükenthal (1911) in identifying Schultz's sedge with *C. polyphylla* Kar. & Kir. (Karelin & Kirilov 1841). Kreczetovicz seems himself to have had two opinions about this, for in a note headed 'Herbarium Florae Asiae Mediae ab Universitate Asiae Mediae editum Fasc. XXIII Julio a 1934' and attached to a specimen in K of *C. polyphylla* from its original locality in the Targabatai mountains, he wrote: 'Cette espèce appartient à une série avec le *C. Leersii* F. Schultz de l'Europe occidentale duquel elle se distingue par les épillets fortement divariqués, de plus larges feuilles à ligule aplatie et une autre forme des utricules.' Unfortunately Kreczetovicz did not particularize the difference in the shape of the utricles; but those of the specimen are very large (over 5 mm long) and their form, with rounded base and narrowly tapered beak, is more akin to that found in *C. spicata* than to the smaller (4-5 mm), neater 'diamonds' of *C. leersii*. The true *C. polyphylla* is not in Britain and probably not in Europe.

If Schultz's sedge is to have specific rank, its name must be *C. leersiana* Rauschert, but it may be no more than a subspecies of *C. divulsa* and would then be subsp. *leersii* (Aschers. & Graebn.) W. Koch. The dividing line between these two taxa is the most difficult to draw in the whole taxonomy of the aggregate.

Lastly there is *C. chabertii* F. W. Schultz, actually named 'Chaberti' in Schultz (1871). Schultz's description has not received proper attention, and the name, from the time of Kneucker's collections (late nineteenth century) onwards, has been incorrectly applied to a number of plants intermediate between *C. divulsa* and *C. leersiana* and possibly of hybrid origin, as they do not seem to mature fruit. The true *C. chabertii*, as seen in specimens in K that originated from Schultz, is characterized by a comparatively short and closely-packed inflorescence of long (over 5 mm), upward-pointing (i.e. not patent) utricles, and appears to have been reported only from the Rhineland and Palatinate, Germany, from the département of Drôme and the Pyrenees, France, and possibly from Bulgaria. As it is said to be a very local plant of woods on dry and stony ground in the mountains it is unlikely to occur in Britain.

Hybrids within the aggregate, and between members of the aggregate and sedges in other sections of subgenus *Vignea*, are reported from time to time in Britain and elsewhere. The majority if not quite all of them are more probably atypical plants of one or other of the taxa; and of the specimens that I have seen so far, either in the field or in herbaria, the only ones of whose hybrid origin I am convinced have been the cross between *C. divulsa* and *C. otrubae*. This is occasionally

found in southern England. The possibility of other hybrids has been indicated under *C. lumitzeri* and *C. chabertii* above.

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## REFERENCES

- ANDERSSON, N. J. (1849). *Cyperaceae Scandinaviae*, p. 65. Stockholm.
- ASCHERSON, P. F. A. & GRAEBNER, K. O. P. P. (1902). *Synopsis der mitteleuropäischen Flora*, 2(2): 38–43. Leipzig.
- BRITTEN, J. (1907). (Editorial note). *J. Bot., Lond.*, 45: 163.
- BRIQUET, J. (1910). *Prodrome de la flore corse*, 1: 199. Geneva, Basle and Lyons.
- CRÉPIN, F. (1859). Notes sur quelques plantes rares ou critiques de Belgique. *Bull. Acad. r. Belg. Cl. Sci.*, sér. 2, 7: 112.
- DANDY, J. E. (1958). *List of British vascular plants*, p. 155. London.
- DAVID, R. W. & KELCEY, J. G. (1975). *Carex muricata sensu* Nelmes and *Carex bullockiana* Nelmes. *Watsonia*, 10: 412–414.
- DE LANGHE, J. E. (1944). Sur le groupe du *Carex muricata* L. en Belgique. *Bull. Soc. r. Bot. Belg.*, 76: 47–48.
- FERNALD, M. L. (1917). Some new or critical plants of eastern North America. *Rhodora*, 19: 154.
- HYLANDER, N. (1966). *Nordisk Kärnväxtflora*, 2: 84–88. Stockholm.
- KARELIN, G. S. & KIRILOV, I. P. (1841). Enumeratio plantarum anno 1840 in regionibus Altaicis et confinibus collectarum. *Byull. Mosk. Obshch. Ispyt. Prir.*, 14: 859.
- KOCH, W. D. J. (1837). *Synopsis florum germanicæ et helveticæ*, p. 751. Frankfurt.
- KOVACS, B. (1910). *Carex echinata* Murr. (1770) még sem más mint *C. stellulata* Good. (1794). *Magy. bot. Lap.*, 9: 126–131.
- KREZETOVICZ, V. I. (1935). *Carex: Muehlenbergia*, in KOMAROV, V. L., ed. *Flora URSS*, 3: 153–156. Leningrad.
- KÜKENTHAL, G. (1905). *Carex fulva* Good. und *Carex echinata* Murr. *Allg. bot. Z.*, 11: 45.
- KÜKENTHAL, G. (1909). *Carex* Sect. 22. *Muehlenbergianae* Tuckerm., in ENGLER, H. G. A., ed. *Das Pflanzenreich*, 38 (IV.20) (*Cyperaceae-Caricoideae*): 152–165. Leipzig.
- KÜKENTHAL, G. (1911). *Cyperaceae Sibiriae subfamilia Caricoideae* (Pax.). *Russk. bot. Zh.*, 3–6: 54–56.
- LINNAEUS, C. (1753). *Species Plantarum*, ed. 1, p. 974. Stockholm.
- MACKENZIE, K. K. (1923). Notes on *Carex*, XIII, 2. *Bull. Torrey bot. Club*, 50: 346–347.
- MACKENZIE, K. K. (1935). *North American flora*, 18(1): 41–62. New York.
- MURRAY, J. A. (1870). *Prodromus designationis stirpium Göttingensium*, p. 76. Göttingen.
- NELMES, E. (1942). Notes on British Carices, VI. *J. Bot., Lond.*, 80: 107–109.
- NELMES, E. (1947). Two critical groups of British sedges. *Rep. botl. Soc. Exch. Club Br. Isl.*, 13: 99–105.
- NELMES, E. (1959). De Caricibus Britannicis notae, IX. *Bot. Mater. Gerb. bot. Inst. V. A. Komarova*, 19: 74–78.
- NEUMAN, L. M. (1901). *Sveriges Flora (Fanerogamerna)*, p. 716. Lund.
- RAUSCHERT, S. (1973). Nomenklatur der Fern- und Blütenpflanzen Deutschlands, III. *Reprum nov. Spec. Regni veg.*, 83: 660.
- ROUY, G. (1912). *Flore de France*, 13: 412–413. Paris.
- SCHKUHR, C. (1801). *Beschreibung und Abbildung der Arten von Riedgräsern*. Wittenberg.
- SCHULTZ, F. W. (1868a). *Carex muricata* var.  $\beta$  Schkuhr (*C. loliacea* Schk. non Linné) als gute Art aufgestellt. *Flora, Jena*, 51: 302–303.
- SCHULTZ, F. W. (1868b). *Étude sur quelques Carex*. Hagenau.
- SCHULTZ, F. W. (1870). Bemerkungen über einige *Carex*. *Flora, Jena*, 53: 458–459.
- SCHULTZ, F. W. (1871). Zusätze und Verbesserungen zu den, in der Flora 1870, Nr 29, Seite 458 bekannt gemachten Bemerkungen über einige *Carex* . . . *Flora, Jena*, 54: 21–32.

- STURM, J. (1833). *Deutschlands Flora*, fasc. 61. Nürnberg.  
 VOLLMANN, F. (1903). Der Formenkreis der *Carex muricata* und seine Verbreitung in Bayern. *Denkschr. K. bayer. bot. Ges. Regensb.*, n.s. 2, 8: 55-90.  
 WINTER, F. (1870). [Review of T. F. Marsson's *Bemerkungen über die Flora von Neu-Pommern.*] *Flora, Jena*, 53: 455.

APPENDIX  
 MAIN SYNONYMS OF TAXA CONSIDERED

This list includes those names that have significantly affected taxonomic discussion or that mark clear stages in the taxonomic argument. Many *nomina dubia*, and such names as *C. orsiniana* Tenore and *C. litigiosa* Chaubard, which appear to be merely the result of error, have been omitted. Names not validly published are enclosed in square brackets.

- CAREX SPICATA Hudson, *Fl. Angl.*, 349 (1762)  
*C. contigua* Hoppe in Sturm, *Deutschl. Fl.*, fasc. 61 (1833)  
 [*C. muricata sensu* Koch, *Syn. Fl. germ.*, 751 (1837) *pro parte, non* L. (1753)]  
*C. muricata* var. *genuina* subvar. *incrassata* Crépin, *Bull. Acad. r. Belg. Cl. Sci.*, sér. 2, 7: 112 (1859)  
*C. muricata* var. *virens* subvar. *incrassata* Crépin, *Bull. Acad. r. Belg. Cl. Sci.*, sér. 2, 7: 112 (1859)  
 [*C. muricata sensu* Aschers. & Graebn., *Syn. mitteleur. Fl.*, 2(2): 38 (1902), *non* L. (1753)]  
 CAREX LUMNITZERI (Rouy) V. Krecz. in Komarov, *Fl. URSS*, 3: 154 (1935)  
*C. contigua* var. *longissima* Tauscher ex Vollmann, *Denkschr. K. bayer. bot. Ges. Regensb.*, 8: 81 (1903)  
*C. muricata* race *lumnitzeri* Rouy, *Fl. Fr.*, 13: 412 (1912)  
*C. muricata* subsp. *lumnitzeri* (Rouy) Soó in Soó & Jav., *Magyar Növ. Kéz.*, 2: 903 (1951)  
 [*C. spicata* subsp. *lumnitzeri* (Rouy) Soó in Soó & Kárpáti, *Magyar Fl.*, 724 (1968) *sine basion.*]  
*C. spicata* subsp. *lumnitzeri* (Rouy) Soó, *Reprium nov. Spec. Regni veg.*, 85: 438 (1974)  
 CAREX MURICATA L.  
 subsp. MURICATA  
*C. muricata* L., *Sp. Pl.*, 974 (1753)  
 [*C. loliacea sensu* Schkuhr, *Riedgräser*, 22, tab. Ee no. 91 (1801) *quoad tab. exclud. descript. et syn.*]  
 [*C. echinata sensu* Kükenthal in Engler, *Pflanzenreich*, 38 (IV.20): 160 (1909), *non* Murray (1770)]  
 [*C. cuprina sensu* V. Krecz. in Komarov, *Fl. USSR*, 3: 155 (1935), *non* Sándor ex Heuffel (1862)]  
*C. pairae* subsp. *borealis* Hyl., *Nord. Kärltäxtfl.*, 2: 386 (1966)  
 subsp. PAIRAEI (F. W. Schultz) Čelak., *Prodr. Fl. Böhm.*, 4: 731 (1881)  
 [*C. pairaei* F. W. Schultz, *Flora, Jena*, 51: 302 (July 1868) *nom. nud.*]  
*C. pairaei* F. W. Schultz, *Étude quelques Carex*, 9 (September 1868)  
*C. bullockiana* Nelmes, *Bot. Maer. Gerb. bot. Inst. V. A. Komarova*, 19: 77 (1959)  
 CAREX POLYPHYLLA Kar. & Kir., *Byull. Mosk. Obshch. Ispýt. Prir.*, 14: 859 (1841)  
 CAREX LEERSIANA Rauschert, *Reprium nov. Spec. Regni veg.*, 83: 660 (1973)  
 [*C. muricata sensu* Hoppe in Sturm, *Deutschl. Fl.*, fasc. 61 (1833), *non* L. (1753)]  
*C. leersii* F. W. Schultz, *Flora, Jena*, 53: 459 (1870), *non* Willd. (1787)  
*C. muricata* var. *leersii* Kneucker in Seubert-Klein, *Excurs. Fl. Baden*, 52 (1891)  
*C. muricata* subsp. *leersii* Aschers. & Graebn., *Syn. mitteleur. Fl.*, 2(2): 40 (1902)  
*C. echinata* subsp. *leersii* Kükenthal in Engler, *Pflanzenreich*, 38 (IV.20): 161 (1909)  
*C. pairaei* var. *leersii* Kükenthal, *Russk. bot. Zh.*, 3-6: 55 (1911)  
*C. divulsa* subsp. *leersii* (Aschers. & Graebn.) W. Koch, *Mitt. bad. Landesver. Naturk.*, 11: 259 (1923)  
 [*C. polyphylla sensu* V. Krecz. in Komarov, *Fl. URSS*, 3: 155 (1935), *non* Kar. & Kir. (1841)]  
 CAREX DIVULSA Stokes in With., *Arr. Br. Pl.*, ed. 2, 2: 1035 (1787)  
 ? *C. virens* Lam., *Encycl. Méth. Bot.*, 3: 384 (1792)  
*C. muricata*  $\beta$  *divulsa* (Stokes) Wahlenb., *K. svenska Vetensk-Akad. Handl.*, 24: 153 (1803)  
 [*C. guesstphalica* Boenn., *Vat. Sem. Hort. Monast.* (1829) *nom. nud.*]

- Vignea guestphalica* Boenn. ex Reichenbach, *Fl. Germ. Excurs.*, 130 (1830)  
*Carex guestphalica* (Boenn. ex Reichenbach) C. F. Lang, *Flora, Jena*, 26: 147 (1843)  
CAREX CHABERTII F. W. Schultz, *Flora, Jena*, 54: 21 (1871)  
*C. virens* var. *duriaei* F. W. Schultz, *Grundz. Phyt. Pfalz*, 161 (1863)  
*C. duriaei* (F. W. Schultz) F. W. Schultz, *Flora, Jena*, 53: 458 (1870), non Steudel (1841)  
*C. divulsa* subsp. *chabertii* (F. W. Schultz) Aschers. & Graebn., *Syn. mitteleur. Fl.*, 2(2): 42 (1902)

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