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Six New Combinations and a New Name in *Gagea* sensu lato (*Liliaceae*) with Lectotypification

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The present study deals with the transfer of seven names of *Lloydia* Salisb. ex Rchb. into *Gagea* Salisb. Recent molecular phylogenetic studies support grouping of *Gagea* and *Lloydia* into *Gagea* sensu lato. A revised generic classification was proposed for *Gagea* and the species previously described within *Lloydia* were transferred to *Gagea*. However, few Himalayan species of *Lloydia* were left out in this consideration. Hence, six new combinations and a new name are proposed here. Types are designated as required.

Keywords: *Gagea*, Himalaya, lectotypification, *Lloydia*, new combination, new name.

The genus *Gagea* Salisb. (*Liliaceae*) is represented by ca. 280–300 species (Tekşen and Erkul 2015) spread across the temperate regions of northern hemisphere with higher concentration in Eurasia (Zarrei et al. 2007). It is closely allied to the genus *Lloydia* Salisb. ex Rchb. in having linear radical leaves and style (Dasgupta and Deb 1986), persistent tepals (Rønsted et al. 2005), sclerificatous roots in most species (Levichev 2006) and an andromonoecious breeding system in most species (Wolfe 1998). The putative characters that separate *Lloydia* from *Gagea* are nature of persistent tepals (Chen et al. 2000), i.e., withered in *Lloydia* whereas hardened in *Gagea* and presence or absence of nectaries (Richardson 1980), i.e., present in *Lloydia* whereas absent in *Gagea*.

There has been a separated opinion on significance of these characters for generic delimitation, which has led to several studies in the last three decades to check their applicability. Heywood (1980), Richardson (1980), Chen and Turland (2000), and Peterson et al. (2008) accepted the differential characters as strong enough to separate the genera while Zarrei and Zarre (2005), Peterson et al. (2008), and Zarrei et al. (2011a, b) believe them to be superficial, overlapping and unclear so as to merge both the genera. Zarrei et al. (2011a) argued that the nature of persistent tepals is mostly dependant on the ecological niche of the species and is not uniform throughout both genera; hence it need not to be considered as a character to delimit the genera. Likewise, Porsch (1913), Daumann (1970), Peterson et al. (2008) and Novikov (2021) conducted various morphological and anatomical studies to report the presence of nectaries or nectariferous tissue in different species of

S.Patil：**広義のキバナノアマナ属（ユリ科）における，レクトタイプ指定を伴う6新組合せと1新名**

最近の分子系統学的解析の結果，ユリ科のキバナノアマナ属*Gagea* Salisb.とチシマアマナ属*Lloydia* Salisb. ex Rchb.は広義のキバナノアマナ属としてまとめられている．これに伴い，チシマアマナ属の7種をキバナノアマナ属に移し，6つの新組合せ，*Gagea delavayi* (Franch.) Sameer Patil，*G. himalensis* (Royle) Sameer Patil，*G. ixiolirioides* (Baker ex Oliv.) Sameer Patil, *G. nana* (R.Li & H.Li) Sameer Patil, *G. tibetica* (Baker ex Oliv.) Sameer Patil，*G. yunnanensis* (Franch.) Sameer Patilと1新名*G. lasiantha* Sameer Patilを提唱した．また，*Lloydia oxycarpa* Franch.については，2段階目のレクトタイプ指定を行った．

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