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Lectotypification of the name *Kundmannia syriaca* (Apiaceae)

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ABSTRACT
Kundmannia syriaca was recently transferred to the genus *Antalia*. During this research it became clear that the name *K. syriaca* needed to be typified. One of the two isotypes preserved in the herbarium Geneva was designated as the lectotype of *K. syriaca*.

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ÖZET
Kundmannia syriaca yakın zamanda *Antalia* cinsine aktarılmıştır. Bu araştırma sırasında *K. syriaca* isminin tiplendirilmesi gerektiği ortaya çıkmıştır. Cenevre herbaryumunda muhafaza edilen iki izotipten biri *K. syriaca* adının lektotipi olarak belirlenmiştir.

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INTRODUCTION

Kundmannia Scop. is an endemic Mediterranean monotypic genus that includes *K. sicula* (L.) DC. (Tutin, 1968; Doğru-Koca, 2024). Before Doğru-Koca (2024), the genus *Kundmannia* included not only *K. sicula* but also *K. syriaca* Boiss. and *K. anatolica* Hub.-Mor. However, in phylogenetic studies, the monophyletic clade comprising *K. syriaca* and *K. anatolica* populations occurred far from the clade of *K. sicula*. Therefore, these two species were recently transferred to a new genus, *Antalia* Doğru-Koca (Doğru-Koca, 2024).

Kundmannia sicula is distributed from the west Mediterranean to Greece (Tutin, 1968; Knees, 2003; POWO, 2023; and specimens in cited herbaria). In the protolog, the original material was collected from Sicily (Linnaeus, 1753) (Figure 1). It was recently both lectotypified and epitypified by Jury et al. (2006). While an icon was selected as the lectotype in Zanoni (1675), Davis and Sutton's specimen, collected from Sicily and kept in BM [BM001134523 (photo!)], was selected as the epitype.

The other two species *Kundmannia syriaca* (current accepted name: *Antalia syriaca* (Boiss.) Doğru-Koca) and *K. anatolica* Hub.-Mor. (current accepted name: *A. anatolica* (Hub.-Mor.) Doğru-Koca) are endemic to Türkiye. Both of them occur in the Taurus Mountains of southern Anatolia (Hedge & Lamond, 1972; Huber-Morath, 1983). *A.*

syriaca morphologically differs from *A. anatolica* by its slightly unequal rays (vs. strongly unequal rays), much broader upper stem leaves (vs. relatively less broad), and green or yellow-green petals (vs. white) (Huber-Morath, 1983; Doğru-Koca, 2024).

Antalia anatolica was recently transferred and its original materials are kept in herbaria G [holo. G00367095!] and E [iso. (photo!) E00279098]. *A. syriaca*, because of its epithet, is supposed to be distributed in Syria. However, it only occurs in Hatay-Adana, so only in Türkiye (Figure 1).

Figure 1. Distribution and type localities of the species of *Antalia*. The red circle marks the epitype locality of *Kundmannia sicula* in Sicily. Yellow and purple circles indicate the distribution of *Antalia anatolica* and *Antalia syriaca*, respectively. Black bordered circles indicate type localities.

Şekil 1. Antalia türlerinin dağılımı ve tip lokaliteleri. Kırmızı daire Kundmannia sicula'nın Sicilya'daki epitip lokalitesini göstermektedir. Sarı ve mor daireler sırasıyla Antalia anatolica ve Antalia syriaca'nın dağılımını göstermektedir. Siyah kenarlı daireler tip lokalitelerini göstermektedir.

Recently, Pimenov & Jacquemoud (2020) published a comprehensive study to reveal the nomenclatural types of the Umbelliferae kept in G-BOIS. They confirmed that there is a holotype of *Kundmannia syriaca* in the herbarium G (Figure 2A). Hence, they cited this specimen barcoded G00367018 (image available at https://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=260719&base=img&lang=en) as the holotype (Pimenov & Jacquemoud, 2020) (Figure 2B). On the "holotype", there was a label, "Montagnes d'Antioche", handwritten by Boissier and a typewritten note "Syria, Mai-Jul. 1846" (Figure 2C). "Antioche" means Antakya, which is a city in Türkiye.

On the other hand, a relevant specimen was also found in G, barcoded G00757283 (image available at https://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=537838&base=img&lang=en) collected by Boissier (Figure 2D). It had a label the same as the "holotype" of *Kundmannia syriaca* in G (Figure 2E). However, it was identified as a "holotype of *K. sicula*" by Pimenov in 2005 (Figure 2F). Then, in 2019, a scientist labeled it as *K. syriaca* (Figure 2F). On examination of these specimens, my conclusion was that there was confusion about these two herbarium sheets in G. First, the sheet G00757283 could not be a holotype of *K. sicula* because of its morphological characteristics and the location it was collected. *K. sicula* is a west Mediterranean element and its type of location is from Sicily (not Syria), as explained previously. It is absolutely another specimen of the original materials of *K. syriaca*. Secondly, if there are two original materials for a taxonomic name, they should be accepted as syntypes.

In the current study, I propose a lectotype for the name of *Kundmannia syriaca* Boiss. according to Art. 9.3 of the International Code of Nomenclature (Turland et al., 2018).

Figure 2. Original materials of *Kundmannia syriaca* Boiss. in herbarium Geneva. A. Holotype confirmation by Pimenov and Jacquemoud (2020). B. Isolectotype, barcoded G00367018. C. Close-up handwritten label of the isolectotype. D. Lectotype, barcoded G00757283. E-F. Close-up labels of the lectotype. G. Other sheet of the isolectotype. H-I. Divided root of the isolectotype sheets.

Şekil 2. Kundmannia syriaca Boiss. türünün Cenevre herbaryumundaki orjinal materyalleri. A. Pimenov ve Jacquemoud (2020) tarafından onaylanan holotip. B. İzolektotip, G00367018 barkodlu. C. İzolektotipin yakın çekim el yazısı etiketi. D. Lektotip, G00757283 barkodlu. E-F. Lektotipin yakın çekim etiketleri. G. İzolektotipin diğer herbaryum örneği. H-I. İzolektotip yapraklarının bölünmüş kökü.

MATERIALS and METHODS

Approximately 220 samples were examined on various herbaria visits to HUB, ANK, GAZI, EGE, ISTE, ISTF, P, G, UPA, ATU, and ATHU. Digital images of *Kundmannia* specimens preserved in virtual herbaria B, BM, E, G, GH, GOET, JE, K, L, LE, Linn, MW, and W were also carefully examined. Numerous Floras (Tutin, 1968; Hedge & Lamond, 1972; Knees, 2003) and databases (GBIF, 2023; POWO, 2023) were used for the morphological investigations. The Shenzhen Botanical Code (Turland et al., 2018) was also followed. Furthermore, the amendments to the articles cited here were reviewed at the Madrid Code meeting and it was concluded that they had no impact on the outcome (Turland et al., 2024).

RESULTS

Antalia syriaca (Boiss.) Doğru-Koca, Bot. J. Linn Soc. 206: 95-103 (2024).

Homotypic Synonym: *Kundmannia syriaca* Boiss., Diagn. Pl. Orient. 10: 31 (1849).

Type locality in protologue: "Hab. in fissuris rupium calcareorum ponè urbem *Antiochiam* [Antakya] sitorum medio Junio vix florere incipiens. (Boiss.)" (Boissier, 1849).

LECTOTYPE (**designated here**): (Türkiye, C6 Hatay) Montagnes d'Antioche [Antakya], Syria, Mai–Jul. 1846. *E. Boissier* (G, barcode G00757283 [!]; isolectotype: G, barcode G00367018 [!]).

DISCUSSION

The specimen barcoded G00367018, which was divided into half at the root, was pasted on two separate sheets (Figs. 1B, G-I). One of them, which Pimenov determined as a holotype, was young, so it was a morphologically poor specimen (Fig. 1A). The second half did not have a barcode (second sheet) (Fig. 1G). Both sheets should be accepted as a specimen, because they were preserved in the same folder, as exampled in ICN Art. 8 Ex. 9. Whereas the other specimen, barcoded G00757283, was a relatively mature specimen. Although it was clear from the labelling that both (G00367018 and G00757283) were gathered from the same population and at the same time, they are two different individuals. Pimenov & Jacquemoud (2020) determined one of them as the holotype belonging to *Kundmannia syriaca*, while Pimenov labelled (not published) the other one as the holotype of *K. sicula*. It is impossible for a specimen collected from Antakya to be the type species of *K. sicula*, as Pimenov had labelled, because the locality of that type of *K. sicula* is Sicily. Morphologically, both specimens were very similar to *K. syriaca*. Therefore, according to ICN Art. 9.6, these two specimens were considered as original materials, syntypes of *K. syriaca,* and one of them was selected as a lectotype according to Art. 9.3 (Turland et al., 2018).

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