



Research Article

<https://doi.org/10.53803/turvehab.1111965>

A New Name at the Rank of Genus, *Kandemiria* (Asteraceae)

Şinasi Yıldırım<sup>1</sup>\*, Aşlı Doğru Koca<sup>2</sup>

Department of Biology, Faculty of Science, Hacettepe University, TR-06800, Ankara, Türkiye

\*Correspondence: Şinasi Yıldırım<sup>1</sup>, [ot@hacettepe.edu.tr](mailto:ot@hacettepe.edu.tr)

Received: 01.05.2022

Accepted: 27.05.2022

Published Online: 30.06.2022

Abstract

*Candollea* (Asteraceae), a new genus from Türkiye, was introduced to the scientific world and became homonymous. The new name of *Kandemiria* (Asteraceae) replaced *Candollea* at the rank of genus due to presence of many previous generic names for *Candollea*. This new genus is based on *Scorzonera coriacea*, *S. davisii*, *S. elata*, *S. mollis*, *S. szowitzii* and *S. turkestanica* of the *Scorzonera* s.l. species with typical features, such as perennial herb; several branched, long, erect, leafy stems; linear, nerved leaves; spiciform, raceme to subcorymbose, scape inflorescence; capitula (1–)3–8 per stem; yellow flowers; and shortly stipitate achenes. The required new combinations of the genus and infrageneric taxa were made. As a result of the homonymous correction of the genus, a new identification key for the closely related genera of this new *Kandemiria* genus was provided.

**Keywords:** *Candollea*, *Kandemiria*, new combinations, new homonymous genus, *Scorzonera*, *Scorzonerinae*

Cins Düzeyinde Yeni Bir Ad, *Kandemiria* (Asteraceae)

Özet

Türkiye’den yeni bir cins, *Candollea* (Asteraceae) bilim dünyasına tanıtılmış ama homonim olmuştur. Önceden varlığı bilinen *Candollea*’nın birçok cins adından dolayı, *Kandemiria* (Asteraceae) yeni bir ad olarak *Candollea* cins adının yerini alır. Bu yeni cins, çok yıllık otsu; çok dallı, dik, boylu, yapraklı gövdeli; şeritsi, belirgin damarlı yapraklı; başaksı, çiltimden yarı pürçekliye, seyrekçe sibek sömekli; her bir gövdede (1–)3–8 kömeçli; sarı çiçekli; kısa saplı aken özellikleriyle *Scorzonera* s.l.’nin *Scorzonera coriacea*, *S. davisii*, *S. elata*, *S. mollis*, *S. szowitzii* ve *S. turkestanica* türlerine dayanmaktadır. Cins ve cins altı gerekli yeni aktarımlar yapılmıştır. Bu cinsin homonim düzeltmeleri sonucu, yakın cinslerine ilgin yeni bir teşhis anahtarı verilmiştir.

**Anahtar kelimeler:** *Candollea*, *Kandemiria*, *Scorzonera*, *Scorzonerinae*, yeni aktarımlar, yeni homonim cinsi

INTRODUCTION

Yıldırım published a new genus “*Candollea* Yıld. (Asteraceae)” in “Ot Sistematik Botanik Dergisi” and this new genus is based on *Scorzonera coriacea* A.Duran & Aksoy, *S. davisii* Lipsch., *S. elata* Boiss., *S. mollis* M.Bieb., *S. szowitzii* DC. and *S. turkestanica* Franch. of *Scorzonera* L. s.l. species with typical features such as perennial herb; several branched, long, erect, leafy stem; linear, nerved leaves; spiciform, raceme to subcorymbose, scape inflorescence; capitula (1–)3–8 per stem; yellow flowers; shortly stipitate achenes (Yıldırım 2021). The genus *Candollea* comprises six species, distributed from central Asia to the Mediterranean region. Members of the genus are particularly abundant in Anatolia-Turanian and Mediterranean phytogeographic regions.

Suggested Citation:

Yıldırım, Ş. & Doğru Koca, A. (2022). A New Name at the Rank Genus, *Kandemiria* (Asteraceae). *Türler ve Habitatlar* 3(1): 23–29.

Authors remarked that *Candollea*' generic names were previously and validly published as *Candollea* Labill. (this is a synonym of *Hibbertia* Andrews (Dilleniaceae), *Candollea* Baumg. (this is a synonym of *Rhododendron* L. (Ericaceae), *Candollea* Mirb. (this is a synonym of *Pyrrosia* Mirb. (Polypodiaceae), *Candollea* Steud. (this is a synonym of *Agrostis* L. (Poaceae), *Candollea* Labill. (This is a synonym of *Stylidium* Sw. ex Willd. (Stylidiaceae) at the same rank (IPNI 2022; POWO 2022). In this case, later homonym “*Candollea* (Asteraceae)” is illegitimate based on different types according to the rule of code “Article 53.1” (Turland et al. 2018).

Kılıç and Yıldırımli published a new genus *Yildirimlia* Kılıç in the “Ot Sistematik Botanik Dergisi” (Kılıç & Yıldırımli 2020). Because they thought there could be only one species name in each genus, and that each family could only have one genus name. Later, the homonymous name of the genus *Yildirimlia* Kılıç, it has been corrected in “Bağbahçe Bilim Dergisi” as *Kilicia* Yıld. (Yıldırımli 2022).

## RESULTS AND DISCUSSION

### Taxonomic treatment

*Kandemiria* Yıld. (Asteraceae) is a replacement name of illegitimate *Candollea* Yıld. due to the presence of homonym based on a lot of *Candollea*' generic names. The Turkish name of the new genus has been proposed as “Kandemirotu” (Menemen et al. 2021). The new taxonomic treatments of infrageneric taxa related to the new generic name *Kandemiria*' taxa whose names have been changed due to homonym are as follows.

### Synopsis of the Turkish *Kandemiria* Yıld.

Genus: *Kandemiria* Yıld.

Subgenus *Angustifolia* (Yıld.) Yıld.

Section *Angustifoliae*

*Kandemiria elata* (Boiss.) Yıld. (Syn.: *Kandemiria tuzgoluensis* (A.Duran, B.Doğan & Makbul) Yıld., **syn. nov.**)

Section *Scapigerae* (Yıld.) Yıld.

*Kandemiria mollis* (M.Bieb.) Yıld. (Syn.: *Kandemiria syriaca* (Boiss. & C.I.Blanche) Yıld., **syn. nov.**)

*Kandemiria szowitzii* (DC.) Yıld. (Syns.: *Kandemiria leptophylla* (DC.) Yıld., **syn. nov.**; *Kandemiria mucida* (Rech.f., Aellen & Esfand.) Yıld., **syn. nov.**; *Kandemiria raddeana* (C.Winkl.) Yıld., **syn. nov.**)

Subgenus *Latifolia* (Yıld.) Yıld.

Section *Latifoliae*

*Kandemiria coriacea* (A.Duran & Aksoy) Yıld.

*Kandemiria davisii* (Lipsch.) Yıld.

Section *Spiciformae* (Yıld.) Yıld.

*Kandemiria turkestanica* (Franch.) Yıld., (Syn.: *Kandemiria renzii* (Rech.f.) Yıld. **syn. nov.**)

Family: **Asteraceae** Bercht. & J.Presl

Subfamily: **Cichorioideae** Chevall.

Tribus: **Cichorieae** Lam. & DC.

Subtribus: **Scorzonerinae** Dum.

Genus: **Kandemiria** Yıld., **nom. nov.**

≡ *Candollea* Yıld., **syn. nov.**, Ot Sistematiik Botanik Dergisi 28(1–2): 27 (2021), (urn:lsid:ipni.org:names:77297336-1), *nom. illeg., non Candollea* Mirb., J.B.A.M.de Lamarck & C.F.B.de Mirbel, Hist. Nat. Vég. Cl. Fam. 5: 86 (1802); *Candollea* Labill., Ann. Mus. Hist. Nat. 6: 453 (1805); *Candollea* Labill., Nov. Holl. Pl. 2: 33 (1806); *Candollea* Baumg., Cat. Hort. Bollw.: s.p. (1810); *Candollea* Steud., Nomencl. Bot., ed. 2, 1: 273 (1840).

**Type of genus.** *Kandemiria elata* (Boiss.) Yıld.

**Eponymy.** The genus is named in honour of Prof. Dr. Ali Kandemir from Erzincan Binali Yıldırım University.

**Kandemiria** subgen. *Angustifolia* (Yıld.) Yıld., **comb. nov.**

≡ *Candollea* subgen. *Angustifolia* Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 32 (2021).  
urn:lsid:ipni.org:names:77297347-1

**Type.** *Kandemiria elata* (Boiss.) Yıld.

**Kandemiria** subgen. *Latifolia* (Yıld.) Yıld., **comb. nov.**

≡ *Candollea* subgen. *Latifolia* Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 34 (2021).  
urn:lsid:ipni.org:names:77297357-1

**Type.** *Kandemiria davisii* (Lipsch.) Yıld.

**Kandemiria** sect. *Scapigeræ* (Yıld.) Yıld., **comb. nov.**

≡ *Candollea* sect. *Scapigeræ* Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 33 (2021).  
urn:lsid:ipni.org:names:77297350-1

**Type.** *Kandemiria szowitzii* (DC.) Yıld.

**Kandemiria** sect. *Spiciformæ* (Yıld.) Yıld., **comb. nov.**

≡ *Candollea* sect. *Spiciformæ* Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 35 (2021).  
urn:lsid:ipni.org:names:77297361-1

**Type.** *Kandemiria turkestanica* (Franch.) Yıld.

**Kandemiria coriacea** (A.Duran & Aksoy) Yıld., **comb. nov.**

≡ *Candollea coriacea* (A.Duran & Aksoy) Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 35 (2021).  
urn:lsid:ipni.org:names:77297359-1

**Kandemiria davisii** (Lipsch.) Yıld., **comb. nov.**

≡ *Candollea davisii* (Lipsch.) Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 35 (2021).  
urn:lsid:ipni.org:names:77297360-1

**Kandemiria elata** (Boiss.) Yıld., **comb. nov.**

≡ *Candollea elata* (Boiss.) Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 32 (2021).  
urn:lsid:ipni.org:names:77297349-1

***Kandemiria leptophylla* (DC.) Yıld., comb. nov.**

≡ *Scorzonera leptophylla* (DC.) Krasch. & Lipsch., Lipschitz, Fragm. Monogr. Gen. Scorzon. (Trans. Rubber & Guttap. Inst., Moscow) 78 (1935). urn:lsid:ipni.org:names:243273-1

***Kandemiria mollis* (M.Bieb.) Yıld., comb. nov.**

≡ *Candollea mollis* (M.Bieb.) Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 33 (2021). urn:lsid:ipni.org:names:77297351-1

***Kandemiria mucida* (Rech.f., Aellen & Esfand.) Yıld., comb. nov.**

≡ *Candollea mucida* (Rech.f., Aellen & Esfand.) Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 34 (2021). urn:lsid:ipni.org:names:77297355-1

***Kandemiria raddeana* (C.Winkl.) Yıld., comb. nov.**

≡ *Candollea raddeana* (C.Winkl.) Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 34 (2021). urn:lsid:ipni.org:names:77297356-1

***Kandemiria renzii* (Rech.f.) Yıld., comb. nov.**

≡ *Candollea renzii* (Rech.f.) Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 35 (2021). urn:lsid:ipni.org:names:77297363-1

***Kandemiria syriaca* (Boiss. & C.I.Blanche) Yıld., comb. nov.**

≡ *Candollea syriaca* (Boiss. & C.I.Blanche) Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 33 (2021). urn:lsid:ipni.org:names:77297352-1

***Kandemiria szowitzii* (DC.) Yıld., comb. nov.**

≡ *Candollea szowitzii* (DC.) Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 33 (2021). urn:lsid:ipni.org:names:77297353-1

***Kandemiria turkestanica* (Franch.) Yıld., comb. nov.**

≡ *Candollea turkestanica* (Franch.) Yıld., Ot Sistematiik Botanik Dergisi 28(1–2): 35 (2021). urn:lsid:ipni.org:names:77297362-1

***Kandemiria tuzgoluensis* (A.Duran, B.Doğan & Makbul) Yıld., comb. nov.**

≡ *Candollea tuzgoluensis* (A.Duran, B.Doğan & Makbul) Yıld., Ot Sistematiik Botanik Dergisi 28(1-2): 32 (2021). urn:lsid:ipni.org:names:77297446-1

= *Scorzonera tuzgoluensis* A.Duran, B.Doğan & Makbul, Nordic J. Bot. 29(1): 20–25(–23; figs. 1–3) (2011), urn:lsid:ipni.org:names:77110866-1, **syn. nov.** 2n: 12 (36, 47).

*Candollea tuzgoluensis* is not halophyte due to having no succulent leaves. This species is synonym of *Kandemiria elata*, and shows similar morphological features with *K. elata*. It is an interesting variant of *K. elata* that escapes into the wetland, marshes not salty habitats.

The following subtribes *Scorzonerinae*'s key is a second attempt and provides some guidance. The numbers of genera in the polyphyletic *Scorzonerinae* indicate predictable evolutionary order.

**Key to the second revised genera of the *Scorzonerinae***

- 1 Annual; achenes with hooks or glochids, strongly incurved, without pappus .... 1. *Koelipinia*  
Mediterranean region, Near East, Central Asia, cosmopolite
- Annual, perennial; achenes without hooks or glochids, not strongly incurved, with pappus  
of softly plumose and/or scabrid bristles ..... 2
- 2 Achenes with distinct wings ..... 3
- Achenes without wings ..... 6
- 3 Annual scapigerous; stem unbranched, leafless or sparsely leafy; achenes 2–3 winged ..... 4
- Perennial caulescent, scapigerous; stem branched, unbranched; achenes 5–10 winged ..... 5
- 4 Leaves linear, simple; achenes columnar to fusiform, 3 broad winged ..... 2. *Pterachaenia*  
(*P. stewartii*) Afghanistan, Pakistan
- Leaves linear to oblong-lanceolate, pinnatifid; achenes compressed, 2 thin winged  
..... 3. *Tourneuxia*  
(*T. variifolia*) NW Africa, Algeria, Mauritania, Morocco
- 5 Stem 50–80 cm long, branched, leafy; basal leaves 15–25 cm long; capitula 2–4 per stem;  
achenes 5 winged ..... 7. *Kilicia*  
(*K. pacis*) Endemic to Türkiye
- Stem 10–12 cm long, scapigerous, unbranched, not leafy; basal leaves c. 8 cm long; capitula  
1 per stem; achenes 10 winged ..... 6. *Aytacia*  
(*A. turkica*) Endemic to Türkiye
- 6 Annual; involucre with outer phyllary series leaf-like and longer than the inner series; distal  
part of achenes densely lanate ..... 4. *Epilasia*  
Caucasia, to Central Asia, Xinjiang (Sincan, East Turkistan) and India
- Annual, perennial; involucre with outer phyllary series shorter or equal in length to the  
inner series; achenes completely glabrous or completely hairy ..... 7
- 7 Phyllaries in one series only; annual, perennial ..... 8
- Phyllaries in two or several series, ± imbricate; perennial ..... 9
- 8 Perennial or biennial herbs; receptacle naked or shortly ciliate; all achenes with pappus of  
plumose bristles ..... 8. *Tragopogon*  
Cosmopolite
- Annuals; receptacle bearing a few long filiform paleae; outer achenes with pappus of 5  
scabrid awns, inner achenes with pappus of plumose bristles ..... 5. *Geropogon*  
Mediterranean region, Iran
- 9 Rootstock cylindrical, not tuberous; leaves pinnatifid, pinnatipartite, pinnatisect, two-  
pinnatisect, simple and pinnatifid, lacerate, incised, coarsely dentate, repandly lobed;  
phyllaries with or without a corniculate projection; achenes glabrous except *Podospermum*  
*armeniaca* ..... 10
- Rootstock cylindrical, tuberous; leaves simple, margin entire, undulate; phyllaries without a  
corniculate projection; achenes glabrous, lanate ..... 11
- 10 Leaves pinnatifid, pinnatipartite, pinnatisect, 2-pinnatisect, simple and pinnatifid; outer  
phyllaries with a black corniculate projection (horn) at apex; flowers yellow; achenes with  
stipitate at base with hollow, swollen ..... 9. *Podospermum*  
Cosmopolite

- Leaves lacerate-pectinate, incised, coarsely dentate, repandly lobed; outer phyllaries without a black corniculate projection (horn) at apex; flowers violet to purple, rarely yellow with dark purple tube; achenes without stipitate ..... 10. ***Aslia***  
(*A. incisa*, *A. lacera*) Türkiye, Iraq, Iran, Caucasia
- 11 Flowers violet, purple, pink, lilac, red; achenes glabrous, stipitate ..... 11. ***Lilacina***  
Türkiye to Saudi Arabia and Caucasia
- Flowers yellow; achenes glabrous, lanate, stipitate or not ..... 12
- 12 Plant divaricately and intricately branched ..... 13
- Plant not divaricately and intricately branched ..... 14
- 13 Capitula with 3–12 florets; pappus 11–18 mm, fulvous or dirty white ..... 12. ***Ramaliella***  
Türkiye, Iraq, Jordan, Saudi Arabia, Iran, Afghanistan, Pakistan and NE Africa
- Capitula with 4–5 florets; pappus 5–8 mm, dirty-white ..... 13. ***Lipschitzia***  
Mongolia and N China
- 14 Rootstock cylindrical and taproot; stem clearly branched, real, stout, long, erect, several leafy; leaves usually 15–50 mm broad, entire very rarely undulate, nerved; capitula (3–)10–20(–many) per stem; achenes not stipitate ..... 21. ***Guneria***  
Türkiye, Iraq, Iran, Caucasia
- Rootstock cylindrical and thick, tuberous; stem branched or unbranched, not clearly real, stout, long, erect, and few or not leafy; leaves 1–15(–30) mm broad, entire or undulate, usually not nerved; capitula 1 to 5(–8) per stem; achenes stipitate or not ..... 15
- 15 Rootstock cylindrical, tuberous; capitula 25–60 mm long, 2–8 per stem; inner phyllaries 20–50 mm; achenes 10–30 mm, glabrous ..... 16
- Rootstock cylindrical; capitula 10–25 mm long, 1 per stem; inner phyllaries c. 8–20 mm; achenes 4–10(–12) mm, lanate, glabrous ..... 17
- 16 Leaves 6–20(–35) mm broad, linear-lanceolate, lanceolate, ovate, elliptic, acute, acuminate to caudate at apex, usually crisped-pubescent to glabrescent, leaf margin entire to subundulate; inflorescence corymbose; achenes without stipitate ..... 16. ***Scorzonera***  
(*S. humilis*) Cosmopolite
- Leaves 1–5 mm broad, linear, acute at apex, usually glabrous, leaf margin entire, undulate; inflorescence spiciform, raceme to subcorymbose, scape; achenes shortly stipitate ..... 17. ***Kandemiria***  
SE Europe to Türkiye, East Aegean Islands, Lebanon, Syria, Palestine, Sinai, Iraq, Iran, Caucasia, Pakistan to Central Asia (Kazakhstan, Kirgizstan, Tadzhiistan, Uzbekistan)
- 17 Leaves (3–)5–15(–25) mm broad, usually linear-lanceolate, oblanceolate, densely lanate, sericeous, lanate-pannose; achenes 6–12 mm ..... 18
- Leaves 1–3(–5) mm broad, linear, linear-filiform, sparsely hairy, sericeous; achenes 4–8 mm ..... 20
- 18 Achenes c. 6–10 mm, lanate; leaves lanceolate, narrowly lanceolate-linear, linear, oblanceolate, sparsely or densely lanate, sericeous ..... 19
- Achenes 10–12 mm, glabrous; leaves broadly obovate, suborbicular, elliptic, elliptic-lanceolate, oblanceolate, linear-lanceolate, pannose-lanate, tomentose-villous ..... 20. ***Cigdemia***

- (*C. argyrea* – Endemic to Türkiye, *C. cinerea* – Türkiye, Iraq, N, NW Iran, Transcaucasia)
- 19 Stem 10–40 cm, caulescent, densely lanate-pannose; leaves 6–30 cm long, lanceolate, narrowly lanceolate-linear, linear, sparsely or densely lanate; inflorescence usually branched; capitula 1–3 per stem ..... 19. ***Bocquetia***  
Balkan, Türkiye, Syria, Iran, Caucasia
- Stem 2–10 cm, subscapigerous, densely lanate, densely sericeous to glabrescent with age; leaves 2–5 cm long, oblanceolate, densely lanate, sericeous with long hairs; inflorescence unbranched; capitula usually 1 per stem ..... 18. ***Bilgea***  
Endemic to Türkiye
- 20 Stem 2–10(–20) cm; achenes 5–8 mm, glabrous ..... 14. ***Goekyighitia***  
Türkiye, Syria, Lebanon, Palestine, Iran, Caucasia
- Stem 10–25 cm; achenes 4 mm, lanate ..... 15. ***Turkia***  
(*T. kotschyi*) Türkiye, Syria, Iran

#### AUTHOR CONTRIBUTION STATEMENT

In this study; study idea and design, data collection, analysis and interpretation of results, writing the article draft were made by Şinasi Yıldırımli and Aslı Doğru Koca.

#### REFERENCES

- IPNI (2022). The International Plant Names Index and World Checklist of Selected Plant Families. <http://www.ipni.org/>. [04.04.2022].
- Kılıç, Ö. & Yıldırımli, Ş. (2020). A new genus, *Yildirimlia* Kılıç (Asteraceae) based on *Scorzonera* s.l. from Turkey. *OT Sistematik Botanik Dergisi* 27(1-2): 33–50. (Printed date 2021).
- Menemen, Y., Aytaç, Z. & Kandemir, A. (2021). Türkçe Bilimsel Bitki, Mantar, Suyosunu ve Bakteri Adları Yönergesi. *Bağbahçe Bilim Dergisi* 8(3): 188–195.
- POWO (2022). Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. <http://www.plantsoftheworldonline.org/>. [04.04.2022].
- Turland, N.J., Wiersema, J. H., Barrie, F.R., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Kusber, W.-H., Li D.-Z., Marhold, K., May, T.W., McNeill, J., Monro, A.M., Prado J., Price M.J. & Smith, G.F. (2018). *International Code of Nomenclature for Algae, Fungi, and Plants* (Shenzhen Code). Adopted by the Nineteenth International Botanical Congress Shenzhen, China. *Regnum Vegetabile* 159. Glashütten: Koeltz Botanical Books. DOI: <https://doi.org/10.12705/Code.2018>.
- Yıldırımli, Ş. (2021). A new genus, *Candollea* Yıld. (Asteraceae) based on *Scorzonera* s.l. from Turkey. *Ot Sistematik Botanik Dergisi* 28(1-2): 23–46.
- Yıldırımli, Ş. (2022). Cins düzeyinde yeni bir ad; *Kilicia* Yıld. *Bağbahçe Bilim Dergisi* 9(1): 94–95.