Botanica
ISSN 2538-8657
https://doi.org/10.35513/Botlit.2024.2.6
2024, 30(2): 97–101

Communication

Coleostephus myconis subsp. *discolor* (Asteraceae, Asteroideae) new to North Africa

Ridha El Mokni[1, 2 *]

[1] Faculty of Pharmacy of Monastir, Department of Pharmaceutical Sciences, University of Monastir, Avenue Avicenna, 5000 Monastir, Tunisia
[2] National Research Institute of Rural Engineering, Water and Forests, Department of Forestry, Laboratory of Forest Ecology, 2080 Ariana, Tunisia
* Corresponding author. E-mail: ridha.elmokni@fphm.rnu.tn

Received: 26 January 2024. Accepted: 10 May 2024. Published online: 6 June 2024

Abstract

El Mokni R., 2024: *Coleostephus myconis* subsp. *discolor* (Asteraceae, Asteroideae) new to North Africa. – Botanica, 30(2): 97–101. https://doi.org/10.35513/Botlit.2024.2.6

Coleostephus myconis (L.) Cass. ex Rchb. subsp. *discolor* (Guss.) Arrigoni (Asteraceae, Asteroideae, Anthemideae) has been previously reported to occur naturally in western Italy and its Mediterranean islands. In 2013, native populations of *Coleostephus myconis* subsp. *discolor* were recorded for the first time in Tunisia. This is also the first report of this taxon to North Africa. In Tunisia, *Coleostephus myconis* subsp. *discolor* grows in coastal areas, on open clayey soils, and in communities of thermophilous herbs. The two populations observed are relatively small, covering 1000 m^2 and 3000 m^2. Further records of this taxon in other localities in neighbouring countries in North Africa are highly probable.

Keywords: chorology, coastal communities, floristics, Mediterranean region, new records, Tunisia.

INTRODUCTION

Coleostephus myconis (L.) Cass. ex Rchb. subsp. *discolor* (Guss.) Arrigoni is a taxon previously reported from western Italy, occurring in the Mediterranean region on the islands of Gorgona, Sardinia and Sicily (POWO, 2024). The subspecies was first published by Arrigoni in 2006 and distinguished from the type subspecies mainly by the white female ray florets with a yellow base limb. On the southern Mediterranean coasts of North Africa, *Coleostephus myconis* subsp. *discolor* has not been reported yet (Pottier-Alapetite, 1981; Quézel & Santa, 1963; Greuter, 2006; Le Floc'h et al., 2010; Dobignard & Chatelain, 2011; APD, 2024).

Recent studies on the biodiversity of Tunisia and North Africa (including lichens, fungi and vascular plants) have led to a significant update of the species lists (El Mokni & Iamonico, 2018; El Mokni, 2022, 2023; El Mokni et al., 2022). This study aimed to analyse the origin and distribution of *Coleostephus myconis* subsp. *discolor* in Tunisia and to estimate its population size.

MATERIALS AND METHODS

During field surveys in northern Tunisia (North Africa) between 2010 and 2023, small populations of *Coleostephus myconis* individuals with bicoloured capitula were found in the regions of Tabarka (north-

western Tunisia) and Bizerta (north-eastern Tunisia). Several specimens were collected from the two distant populations. Digital photographs of the plants were taken, and the geographical coordinates of their localities were recorded. Voucher specimens were deposited in the personal herbarium of the author (REM) and the Herbarium of the Faculty of Pharmacy, University of Monastir. This Herbarium has not yet been included in the Index Herbariorum (Thiers, 2024).

The collected plant specimens were identified according to morphological characters and compared to the characters of *Coleostephus myconis* subsp. *myconis* reported in the references (Costa, 1937; Quézel & Santa 1963; Pottier-Alapetite, 1981). During the field surveys, information was collected on the habitat and plant communities in which the studied taxon grew. The nomenclature of plant species was followed according to the main taxonomic databases (Arrigoni, 2006; WFO, 2024; IPNI, 2024). GBIF (2024) and POWO (2024) were used as sources of information for the chorology of *Coleostephus myconis* subsp. *discolor*.

RESULTS AND DISCUSSION

Coleostephus myconis (L.) Cass. ex Rchb. subsp. ***discolor*** (Guss.) Arrigoni in Parlatorea, 8: 55. 2006. – *Chrysanthemum hybridum* subsp. *discolor* (Guss.) Arcang. in Comp. Fl. Ital.: 351. 1882. – *Pyrethrum hybridum* var. *discolor* Guss. in Fl. Sicul. Syn., 2(1): 483. 1844. – *Pyrethrum myconis* var. *discolor* (Guss.) Moris in Fl. Sardoa, 2: 402. 1843.

Morphology. Annual plant with *stems* 20–40 (-45) cm, erect, glabrous or pubescent, often branched (Fig. 1, A). Leaves serrated or crenate, sessile, semi-

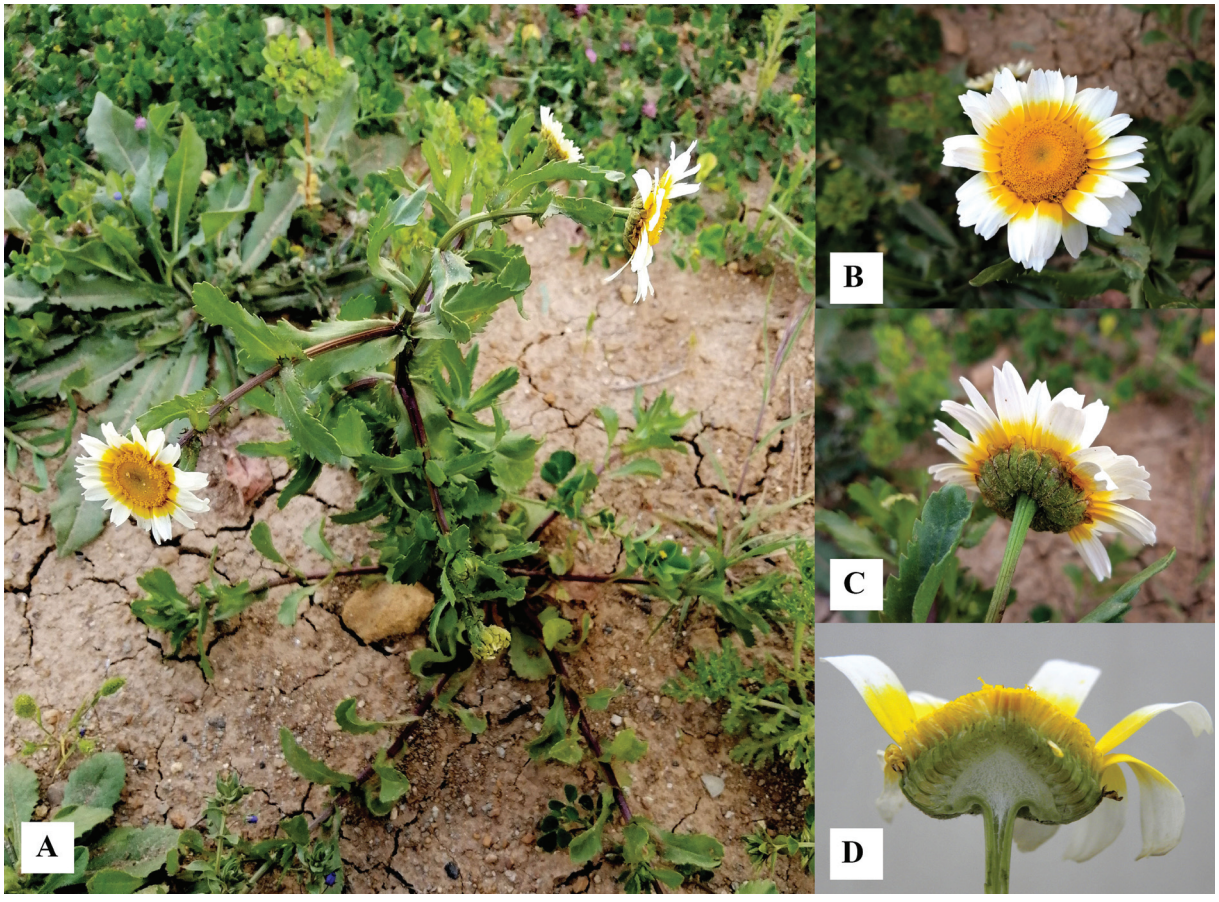

Fig. 1. *Coleostephus myconis* subsp. *discolor*. A – flowering plant in its habitat; B – typical capitulum with bicoloured ray florets; C – details of the involucre with hairy oblong linear bracts, a blackish marginal band and a narrow yellowish scarious margin; D – longitudinal section of a capitulum with details of the cypselae (Bizerta, Sidi-Salem, north-eastern Tunisia, 9 April 2021). Photographs by R.El Mokni.

amplexicaule, auriculate at the base, the lower ones obovate-spatulate, narrowed at the base, the following ones obovate-elliptic or elliptic (Fig. 1, A). Involucre with oblong-linear, hairy bracts, very obtuse, with a blackish marginal band and a narrow, yellowish scarious margin (Fig. 1, C). Capitula solitary on unthickened branches. Ray florets ligulate, yellow at the base and white distal limbs (Fig. 1, B; Fig. 2, A). Disk florets are yellow with a flat tube ending with four or five teeth (Fig. 2, B). Cypselae curved, those of the periphery oblong, provided with two lateral wings and surmounted by a long tubular crown, those of the centre with a smaller crown, extending into a fimbriate tongue at the top (Fig. 1, D). Seeds sometimes have a small cylindrical membranous crown, those of disc florets with 6–10 cylindrical ribs, about 2 mm in diameter.

Phenology. In Tunisia, flowering and fruiting occur from March to May, sometimes in June.

Native range and actual distribution area. *Coleostephus myconis* subsp. *discolor* has a restricted distribution in the north-eastern Mediterranean (GBIF, 2024; POWO, 2024), where it has only been reported from Italy (including Sardinia, Sicily and Pantellaria). It is reported for the first time to the south-eastern Mediterranean coast from North Africa (Tunisia).

Occurrence and habit in Tunisia. *Coleostephus myconis* subsp. *discolor* in Tunisia grows on open clayey soils in communities of thermophilous herbs near the coast. Its presence is limited to two localities (one in Tabarka at 1–2 m above sea level and one in Bizerta at 5–10 m above sea level). Historically, the taxon has never been reported in or around these localities before 2013.

The discovery of this taxon in Tunisia and North Africa is the result of the extended floristic field studies of the last two decades, which have led to the discovery and (or) rediscovery of several native and non-native vascular plants (El Mokni et al., 2022, 2023; Iamonico & El Mokni, 2018; El Mokni & Peruzzi, 2019; El Mokni & Domina, 2020; Kreutz et al., 2023). We firmly believe that North Africa is part of the native range of this taxon, which is thought to have been poorly distinguished and (or) misidentified as *Glebionis discolor* (d'Urv.) Cano, Musarella, Cano-Ortiz, Piñar Fuentes, Spamp. & Pinto Gomes (Cano et al., 2017).

Fig. 2. *Coleostephus myconis* subsp. *discolor*. A – flowering plant in its habitat; B – details of yellow disc florets with a flat tube ending in 4 or 5 teeth (Tabarka, north-western Tunisia, 8 May 2013). Photographs by R.El Mokni.

Notes on the main associated species. Reported populations of more than a hundred individuals were observed growing in the wild over an area of about 3000 m^2 (for Bizerta) and an area of about 1000 m^2 (for Tabarka), together with several species, characteristic of sandy or clayey soils, ruderal thermophilous herbs and grasses, mainly: *Anagallis arvensis* L., *Biscutella raphanifolia* Poir., *Crepis vesicaria* L., *Echium plantagineum* L., *Euphorbia helioscopia* L., *Glebionis coronaria* (L.) Cass. ex Spach, *Hor-*

deum murinum L., *Lotus ornithopodioides* L., *Medicago truncatula* Gaertn., *Ochlopoa infirma* (Kunth) H. Scholz, *Plantago lagopus* L., *Plantago lanceolata* L., *Rostraria cristata* (L.) Tzvelev, *Trifolium tomentosum* L. It should be noted that *Biscutella raphanifolia* (Brassicaceae) is an endemic species found in the northern Mediterranean in Italy (including Sicily) and in the southern Mediterranean in Algeria and Tunisia. Therefore, this species and *Coleostephus myconis* subsp. *discolor* have similar ranges.

Examined specimens. Bizerta North, Sidi-Salem, along the edges of waterways, some temporary ponds and grassy wetlands, 37.2875 N, 9.869167 E, 8–10 m a.s.l., 26 March 2013. Bizerta North, Sidi-Salem, along the edges of waterways, some temporary ponds and grassy wetlands, 23 March 2018, El Mokni (Herb. Univ. Monastir); 37°17′16″ N, 009°52′11″ E, 6–10 m a.s.l., 17 March 2019, El Mokni (Herb. Univ. Monastir). Bizerta North, Sidi-Salem, along the edges of waterways, some temporary ponds and grassy wetlands, 1 April 2020, El Mokni (Herb. Univ. Monastir); 37°17′16″ N, 009°52′12″ E, 5–10 m a.s.l., 9 April 2021, El Mokni (Herb. Univ. Monastir). Jendouba, Tabarka, 36°56’58” N, 008°46’19” E, on roadsides within ruderal chenopodiaceous communities, about 1–2 m a.s.l., 8 May 2013, El Mokni s. n. (Herb. R.El Mokni).

Coleostephus myconis subsp. *discolor*, as a distinct taxon, is mainly reported and documented from the southern Mediterranean coast. Its occurrence is confirmed in two coastal regions of northern Tunisia bordering the Mediterranean Sea. Further records in other localities in neighbouring countries in North Africa are highly probable.

Author contribution. The author conducted all the research, analysed the data and wrote the text.

REFERENCES

APD, 2024: African Plant Database (version 3.4.0). *Coleostephus myconis* (L.) Rchb. f.– Genève: Conservatoire et Jardin botaniques de la Ville de Genève; Pretoria: South African National Biodiversity Institute. – http://www.ville-ge.ch/musinfo/bd/cjb/africa/index.php [accessed 17 January 2024].

Arrigoni P.V., 2006: Note tassonomiche e corologiche sulla flora Sarda. – Parlatorea, 8: 53–62.

Cano E., Musarella C.M., Cano-Ortiz A., Piñar Fuentes J.C., Spampinato G., Pinto Gomes C.J., 2017: Morphometric analysis and bioclimatic distribution of *Glebionis coronaria* s.l. (Asteraceae) in the Mediterranean area. – PhytoKeys, 81: 103–126. https://doi.org/10.3897/phytokeys.81.11995

Costa A.H., 1937: Flore descriptive et illustrée de la France, de la Corse et des contrées limitrophes (2eme ed.), 2. Paris.

Dobignard A., Chatelain C., 2011: Index synonymique de la flore d’Afrique du Nord. 2. Dicotyledoneae: Acanthaceae–Asteraceae. Genève.

El Mokni R., 2022: *Allium elaounii*: a new species of *A.* sect. *Pseudoscorodon* (Amaryllidaceae, Allioideae, Allieae) from Kroumirian mountains, Tunisia. – Phytotaxa, 533(4): 205–215. https://doi.org/10.11646/phytotaxa.533.4.3

El Mokni R., 2023: New and confirmed species of operculate cup fungi (Ascomycota, Pezizomycotina) in Tunisia. – Botanica, 29(2): 50–58. https://doi.org/10.35513/Botlit.2023.2.2

El Mokni R., Iamonico D., 2018: Three new records of *Senecioneae* (*Asteraceae*) for the allochthonous Tunisian flora: occurrence and taxonomic notes. – Flora Mediterranea, 28: 385–392. https://doi.org/10.7320/FlMedit28.385

El Mokni R., Peruzzi L., 2019: Rediscovery and conservation of *Linaria cossonii* Bonnet & Barratte (Plantaginaceae) in Tunisia. – Phytotaxa, 423(5): 284–288. https://doi.org/10.11646/phytotaxa.423.5.2

El Mokni R., Domina G., 2020: Additions to terrestrial flora of Tunisia: occurrence and taxonomic notes. – Check List 16(3): 553–561. https://doi.org/10.15560/16.3.553

El Mokni R., Iamonico D., Véla E., Verloove F., Domina G., 2022: New records of *Asteraceae* for the non-native flora of Tunisia and north Africa with some nomenclatural remarks. – Mediterranean Botany, 43(e73688): 1–19. https://doi.org/10.5209/mbot.73688

El Mokni R., Domina G., Barone G., 2023: New records of the genus *Orobanche* L. (Orobanchaceae) to the Tunisian flora with lectotypification of the name O. rapum-genistae Thuill. – Adansonia, Sér. 3, 45(5): 73–81. https://doi.org/10.5252/adansonia2023v45a5. http://adansonia.com/45/5

GBIF, 2024: Global Biodiversity Information Facility. *Coleostephus myconis* subsp. *discolor* Guss.) Arrigoni.–https://www.gbif.org/species/4213592 [accessed 17 January 2024].

Greuter, W. 2006+ [continuously updated]: *Compositae* (pro parte majore). – In: Greuter W. & Raab-Straube E. von (ed.): *Compositae*. Euro+Med PlantBase – the information resource for Euro-Mediterranean plant diversity. – https://europlusmed.org/cdm_dataportal/taxon/599e0bdb-a2e8-49b9-9907-5398259c4f00 [accessed 23 Jul 2023].

Iamonico D., El Mokni R., 2018: *Amaranthus tunetanus* (Amaranthaceae), a new species from Tunisia and a diagnostic key to the North African taxa in subgen. *Albersia*. – South African Journal of Botany, 114: 78–83. https://doi.org/10.1016/j.sajb.2017.10.011

IPNI, 2024: International Plant Names Index. *Coleostephus myconis* subsp. *discolor* (Guss.) Arrigoni. – https://www.ipni.org/n/77080422-1 [accessed 17 January 2024].

Kreutz K., Campo V., El Mokni R., 2023: *Ophrys punica*, a new species of the *Ophrys scolopax* aggregate in Tunisia. – GIROS Orchidee Spontanee d'Europa, 66: 226–253.

Le Floc'h É., Boulos L., Véla E., 2010: Catalogue synonymique commenté de la Flore de Tunisie. Tunis.

Pottier-Alapetite G., 1981: Flore de la Tunisie. Angiospermes-Dicotylédones. Gamopétales. Imprimerie Officielle, Tunis.

POWO, 2024: Plants of the World Online. *Coleostephus myconis* subsp. *discolor* (Guss.) Arrigoni. – https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:77080422-1 [accessed 17 January 2024].

Quézel P., Santa S., 1963: Nouvelle flore de l'Algérie et des régions désertiques méridionales, 2. Paris.

Thiers B., 2024: Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. – http://sweetgum.nybg.org/ih/ [accessed 17 January 2024].

WFO, 2024: World Flora Online. *Coleostephus myconis* subsp *discolor* (Guss.) Arrigoni. – https://wfoplantlist.org/taxon/wfo-0001361024-2023-12?page=1 [accessed 17 January 2024].

REM https://orcid.org/0000-0003-3849-1039