



Research Article

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***Cantharellus minor* (Cantharellales), a New Record for  
Turkish Mycota**

İbrahim Türkecul <sup>1,\*</sup>, Ali Keleş <sup>2</sup>

<sup>1</sup>Department of Biology, Faculty of Science and Letters, Tokat Gaziosmanpaşa University, TR-60250, Tokat, Türkiye

<sup>2</sup> Department of Science and Mathematics Education, Faculty of Education, Van Yüzüncü Yıl University, TR-65090, Van, Türkiye

\*Correspondence: İbrahim Türkecul, [ibrahim.turkecul@gop.edu.tr](mailto:ibrahim.turkecul@gop.edu.tr)

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**Abstract**

*Cantharellus minor* in the *Cantharellus* genus is recorded for the first time from Rize Province, Türkiye. The identified samples are given with macroscopic and microscopic characters, colour photographs from their natural habitat, collector numbers, and line-drawings of microscopic features are presented..

**Keywords:** Biodiversity, *Cantharellus*, new record, Rize

***Cantharellus minor* (Cantharellales), Türkiye Mikotası İçin Yeni Bir Kayıt**

**Özet**

*Salsola crassa*, *Cantharellus* cinsine ait bir mantar türü olan *Cantharellus minor* Türkiye'nin Rize ilinde ilk kez kaydedilmiştir. Tanımlanan örneklerin makroskobik ve mikroskobik karakterleri, doğal ortamından renkli fotoğrafları, toplayıcı numaraları ve mikroskobik özelliklerin çizimleri sunulmaktadır.

**Anahtar kelimeler:** Biyoçeşitlilik, *Cantharellus*, Rize, yeni kayıt

**INTRODUCTION**

The genus *Cantharellus* Adans. ex Fr. (Fries, 1821) contains species of commercial, medicinal, and economic importance, and they are best known as edible ectomycorrhizal mushrooms. The yellowish lamellae are described as very narrow, distant, sparing branched, decurrent, concolourous, and fade to yellowish white in maturity. The pileus ranges from 0.5 cm to 3.0 cm wide, thin, convex, expanded, and depressed, becoming funnel-shaped in some. The stipe is less than 4 cm, base attenuated, central, solid, concolourous to the pileus, surface glabrous. They fruit in the summer and fall (Peck, 1872; Kuo, 2006).

In the studies conducted in Türkiye to date (Allı et al., 2017; Solak et al., 2007; Sesli and Denchev, 2008; Keleş et al., 2014; Akata and Kumbaşlı, 2014; Türkecul and Işık, 2016; Sesli et al., 2016; Bulam et al., 2018; Şengül et al., 2021), ten chanterelle species have been identified. As a result of the literature review (Sesli et al., 2020; Solak & Türkoğlu, 2022), the *Cantherellus minor* species was not found.

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In this study, we identified *Cantharellus minor* Peck (1872) from Rize Province, Türkiye, by morphological examination studies. This study presents a new *Cantharellus* species for Turkish mycological collections.

## MATERIAL AND METHOD

Numerous field trips were made for the collection of macrofungi to eight study sites in the Rize between March and September of 2013. During field studies, morphological and ecological characteristics of the mushroom samples were recorded, photographs were taken in their natural habitats and a mature sample was taken to obtain spore prints. Micro-morphological observations were done using dried samples and using Nikon Optiphot-2 light microscope. Some chemicals (such as 5% KOH, Melzer reagent, and Congo red) were used to rehydrate and dye dry samples during the studies.

The findings obtained in these studies were compared with the existing literature (Watling and Turnbull, 1998; Breitenbach and Kränzlin, 2000; Eyssartier and Buyck, 2000, 2001). The specimens are kept at Tokat Gaziosmanpaşa University, Science and Arts Faculty, Department of Biology, Tokat.

## RESULTS

The determined species are presented with their macroscopic and microscopic features, habitats, collection dates, and voucher numbers (e.g., A.K. 5533). Colour photographs of ascocarps and some microscopic features were also provided.

*Basidiomycota* R.T.Moore

*Hydnaceae* Chevall. 1826

*Cantharellus* Lam

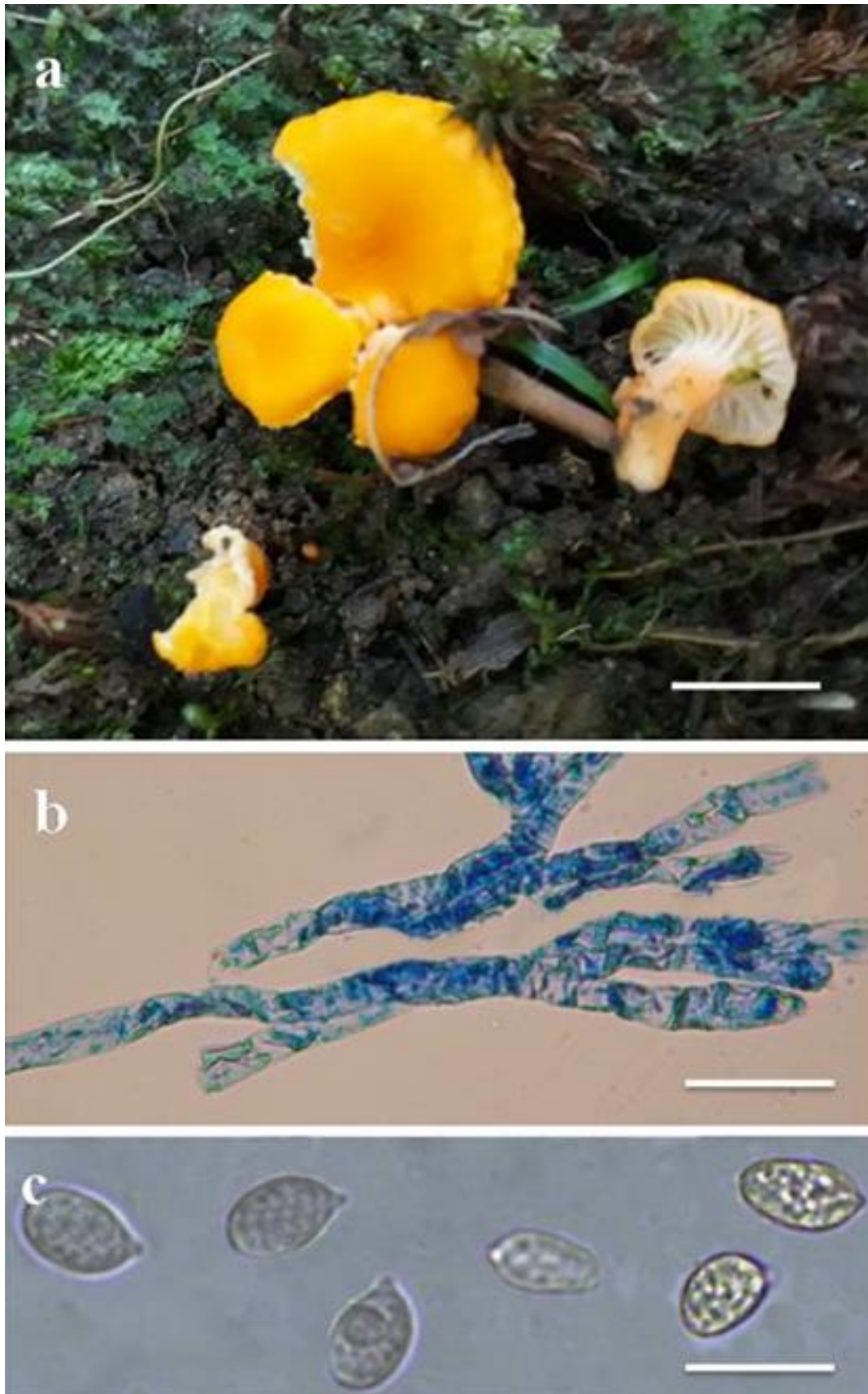
*Cantharellus minor* Peck

**Descriptions.** Pileus 5-25 mm across; broadly convex when young, becoming planoconvex or shallowly depressed, margin incurved, wavy-liked margin; not developing a central perforation; dry or slightly moist. Lamellae: distant, decurrent, not intervenose, concolorous to pileus. Stipe: cylindrical shape, surface smooth, concolourous to pileus, 1-2 × 20-50 mm length (Figure 1a). Flesh insubstantial; yellowish to orangish. Taste not distinctive; odor not distinctive, or slightly sweet and fragrant. Basidiospores 8-10 × 5-6.5 µm; ovoid-ellipsoid with smooth surface (Figure 1c). Basidia 2-6-sterigmate; 55-75 µ long. 75-85 × 7-9 µm, and clamp (Figure 2a-c). Spore Print: Pale yellowish.

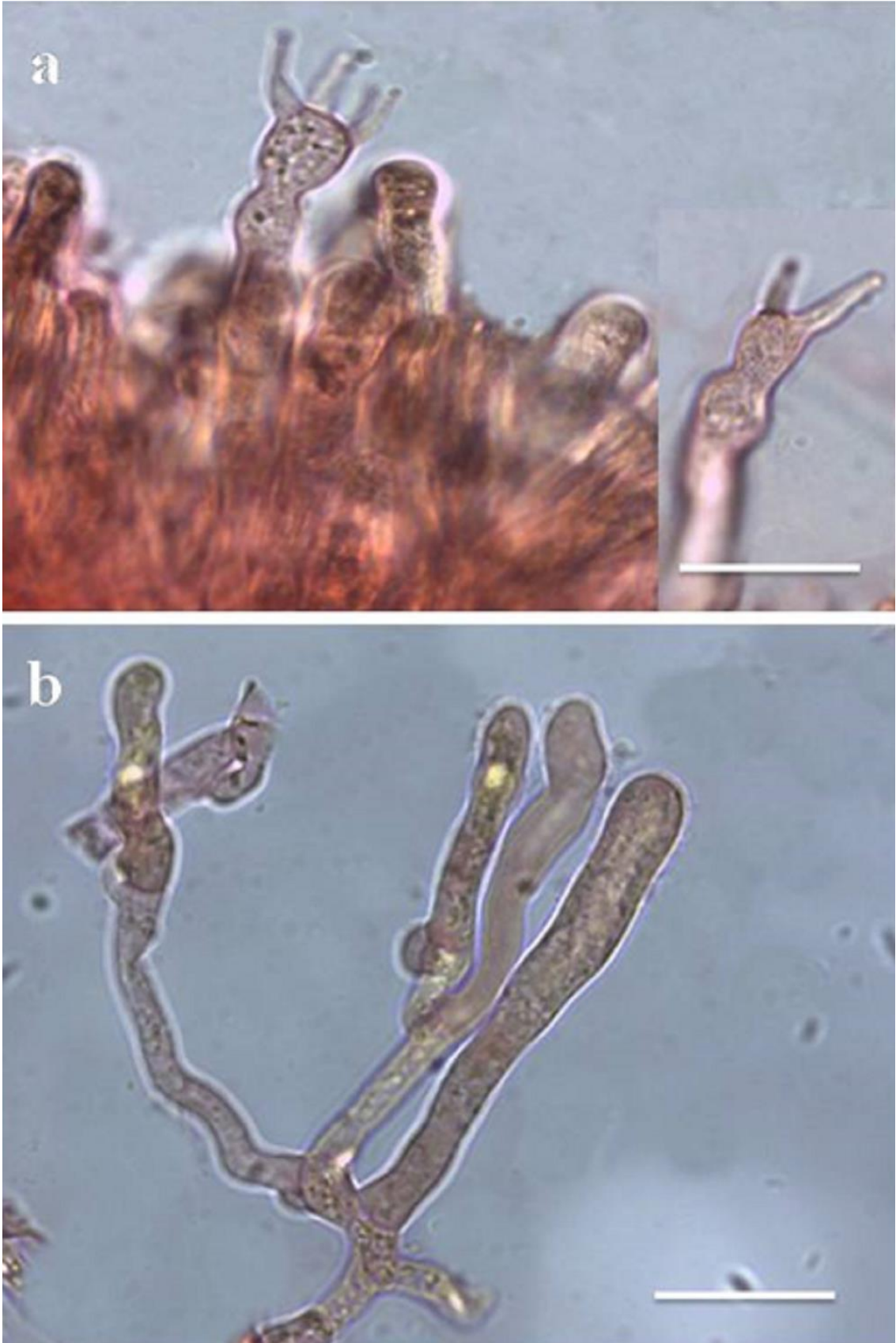
**Ecology.** Mycorrhizal with oaks and other hardwoods; growing alone, scattered, or occasionally gregariously in moss; late spring through fall; widely distributed east of the Rocky Mountains. The illustrated and described collections are from Illinois, Indiana, and Québec. (Bhatt et al., 2016)

## Specimens examined

Türkiye: Rize, İyidere, Fıçıtaşı Neighborhood, mixed forest area, 40°00.003'N-40°21.068'E, 5 m., 24.10.2015, A.K. 5533.



**Figure 1.** *Cantharellus minor*. a. Basidiomata in situ, b. Hyphae of pileipellis, c. Basidiospores (scale bars: a = 20 mm; b = 30  $\mu$ m, c = 10  $\mu$ m).



**Figure 2.** *Cantharellus minor*. a. Basidia and basidiol, b. Basidioles and clamp (scale bars: 10 µm).



## DISCUSSION

The traditional taxonomy of fungi emphasizes the morphology, including macro- and micromorphology features to delimit a taxon. *Cantharellus minor* was originally described by Peck (1872). *Cantharellus minor* has been reported as one of the smallest of the *Cantharellus*, found on soil, forming an ectomycorrhizal association with the tree of *Cedrus deodara* (Roxb. ex D. Don) G. Don, *Quercus robur* L. subsp. *robur*, etc. The yellowish lamellae are described as very narrow, distant, sparing branched, decurrent, concolourous, and fade to yellowish white in maturity. The pileus ranges from 5 mm to 20 mm wide, thin, convex, expanded, and depressed, becoming funnel-shaped in some. The stipe is less than 4 cm, base attenuated, central, solid, concolours to the pileus, surface glabrous (Peck, 1872; Kuo, 2006).

It is commonly called Small Chanterelle. Local villagers cannot distinguish this mushroom from *Cantharellus cibarius* Fr. 1821 and collect this mushroom along with the fruiting bodies of *C. cibarius*. This mushroom is commonly called the Golden Chanterelle. Local villagers easily identify this mushroom by its funnel-shaped structure and egg yolk colour (Bhatt et al., 2016).

*Cantharellus minor* has an aromatic taste and a smooth cylindrical stem (12 × 20-50 mm). The pileus surface is smooth, scaleless, and yellowish (5-15 mm), unlined and wavy-edged, funnel-shaped yellowish-orange. It is distinguished from other chanterelle species by its characteristic features such as basidiospores 6-11.5 × 4-6.5 µm, smooth surface, oval-ellipsoid, basidium 4-5 horned spore (Lao, 2019). At the end of the study, thorough macro- and micro- morphological characters of the collected specimens indicated that the specimens represent *C. minor* for the first time from Türkiye.

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## AUTHOR CONTRIBUTION STATEMENT

In this study; the study idea and design, data collection, analysis and interpretation of the results, and drafting of the article were done by the authors.

## REFERENCES

- Akata, I. & Kumbaşlı, M. (2014). A new and rare record for Turkish *Cantharellus*. *Biological Diversity and Conservation* 7(3): 143-145.
- Allı, H., Candar, S.S. & Akata, I. (2017). Macrofungual diversity of Yalova province. *The Journal of Fungus* 8(2): 76-84.
- Bhatt, R.P., Singh, U. & Stephenson, S.L. (2016). Wild edible mushrooms from high elevations in the Garhwal Himalaya-I. *Current Research in Environmental & Applied Mycology* 6(2): 118-131
- Breitenbach, J. & Kränzlin, F. (2000). Fungi of Switzerland. Vol.5. Verlag Mykologia, Lucerne.

- Bulam, S., Üstün, N.Ş. & Pekşen, A. (2018). The most popular edible wild mushrooms in Vezirköprü district of Samsun province. *Turkish Journal of Agriculture-Food Science and Technology* 6(2): 189-194.
- Eyssartier, G. & Buyck, B. (2000). Le genre *Cantharellus* en Europe. Nomenclature et taxonomie. *Bulletin Trimestriel de la Société Mycologique de France* 116(2): 91-138.
- Eyssartier, G. & Buyck, B. (2001). Note nomenclaturale et systématique sur le genre *Cantharellus*. *Documents Mycologiques* 121: 55-56.
- Fries, E.M. (1821). *Systema Mycologicum: Sistens Fungorum Ordines, Genera et Species, huc usque cognitae, quas ad normam methodi naturalis determinavit, disposuit atque descripsit*. Vol. II. Geneva Botanical Garden, Geneva.
- Keleş, A., Demirel, K., Uzun, Y. & Kaya, A. (2014). Macrofungi of Ayder (Rize/Turkey) high plateau. *Biological Diversity and Conservation* 7(3): 177-183.
- Kuo, M. (2006). *Cantharellus minor*. MushroomExpert.Com. Retrieved 2011-03-24.
- Lao, T.D., Van Ngo, T., Truong, N.B., Vu, LT. & Le, T.A.H. (2019). First record of *Cantharellus minor* from Vietnam with identification support from a combination of nrLSU and nrSSU phylogenetic analysis. *Advancements in Life Sciences* 6(3): 125-130.
- Peck, C.H. (1872). Report of the Botanist (1869). *Annual Report on the New York State Museum of Natural History* 23: 27-135.
- Sesli, E. & Denchev, C.M. (2012). Checklists of the myxomycetes, larger Ascomycetes, and larger Basidiomycetes in Turkey. [online]. Website: <http://www.mycotaxon.com> [21.11.2012].
- Sesli E., Akata, I., Denchev, T.T. & Denchev, C.M. (2016). Myxomycetes in Turkey - A Checklist. *Mycobiota* 6: 1-20.
- Sesli, E., Asan, A. & Selçuk, F. (2020). Abacı Günyar, Ö., Akata, I., Akgül, H., Aktaş, S., Alkan, S., Allı, H., Aydoğdu, H., Berikten, D., Demirel, K., Demirel, R., Doğan, H.H., Erdoğan, M., Ergül, C.C., Eroğlu, G., Giray, G., Halikî Uztan, A., Kabaktepe, Ş., Kadaifçiler, D., Kalyoncu, F., Karaltı, İ., Kaşık, G., Kaya, A., Keleş, A., Kırbacı, S., Kıvanç, M., Ocak, İ., Ökten, S., Özkale, E., Öztürk, C., Sevindik, M., Şen, B., Şen, İ., Türkekul, İ., Ulukapı, M., Uzun, Ya., Uzun, Yu. & Yoltaş, A. *Türkiye Mantarları Listesi*. Ali Nihat Gökyiğit Vakfı Yayını, İstanbul.
- Solak, M.H., Işıloğlu, M., Kalmış, E. & Allı, H. (2007). Macrofungi of Turkey Checklist. Üniversiteler Ofset, İzmir.
- Solak, M.H. & Türkoğlu, A. (2022). Macrofungi of Turkey, Checklist. Vol. III. Kanyılmaz Matbaacılık, İzmir.
- Şengül, M.Ş., Türkekul, Ö.F. & Türkekul, İ. (2021). Molecular and morphological identification of *Cantharellus pallens* Pilát 1959 (Cantharellales, Basidiomycota), a new record for Turkey. *KSU Journal of Agriculture and Nature* 24(6): 1145-1153.
- Türkekul, İ. & Işık, H. (2016). Bozatalan (Tokat) yöresi makrofungusları. *Kafkas Üniversitesi Fen Bilimleri Enstitüsü Dergisi* 9(1): 5-11.
- Watling, R. & Turnbull, E. (1998). British fungus flora: agarics and boleti. 8/Cantharellaceae, Gomphaceae and amyloid-spored and xeruloid members of Tricholomataceae (excl. Mycena). Royal Botanic Garden, Edinburgh.