



Research Article

<https://doi.org/10.53803/turvehab.1694684>

***Entoloma bloxamii*, a New Record for the Mycobiota of Türkiye**

Yasin Uzun ^{1,*}, Faruk Yeşilyurt ², Abdullah Kaya ³

¹Pharmacy Services Department, Ermenek Uysal and Hasan Kalan Health Services Vocational School, Karamanoğlu Mehmetbey University, TR-70400, Ermenek, Karaman, Türkiye

²Yenice Quarter, Yeşilyurt Street, No: 4, Trabzon, Türkiye

³Biology Department, Science Faculty, Gazi University, TR-06560, Ankara, Türkiye

*Correspondence: Yasin Uzun, yuclathrus@gmail.com

Received: 07.05.2025

Accepted: 23.05.2025

Published Online: 01.06.2025

Abstract

Entoloma bloxamii (Entolomataceae, Agaricales) was reported as a new record for the mycobiota of Türkiye, based on the specimens collected from the Akçaabat districts of Trabzon province. This species is the 74th member of the genus *Entoloma* in Türkiye. The identified specimen was described briefly, and the photographs related to its macro and micromorphologies are provided.

Keywords: Biodiversity, *Entoloma*, new record, Türkiye

***Entoloma bloxamii*, Türkiye Mikobiyotası İçin Yeni Bir Kayıt**

Özet

Entoloma bloxamii (Entolomataceae, Agaricales) Trabzon ilinin Akçaabat ilçesinden toplanan örneklerin teşhisine bağlı olarak, Türkiye mikobiyotası için yeni kayıt olarak rapor edilmiştir. Bu tür *Entoloma* cinsinin Türkiye'deki 74'üncü üyesidir. Teşhis edilen örnek kısaca betimlenmiş ve türün makro ve mikromorfolojisine ilişkin fotoğrafları verilmiştir.

Anahtar kelimeler: Biyoçeşitlilik, *Entoloma*, yeni kayıt, Türkiye

INTRODUCTION

Entoloma (Fr.) P. Kumm. is a genus of the family Entolomataceae, and is among the most species-rich genera of the order Agaricales (Kaygusuz et al., 2024). Index Fungorum contains 2832 entries with the name *Entoloma*, 1978, of which are listed as conformed species (Index Fungorum, 2025). Members of the genus are generally characterized by fruit bodies, mainly agaricoid and lamellate (occasionally secotoid, gasteroid, or pleurotoid), pinkish lamellae in age due to pink and angular basidiospores, cylindrical to the bulbous stem without an annulus.

Current literature on Turkish macromycota indicates that 173 reports have so far been presented related to *Entoloma* species, compiling the existence of 73 species in Türkiye, four of which, *Entoloma brunneofibrillosum* Kaya, Kaygusuz, Reschke, Noordel., Dima, Vrba & M.Piepenbr., *Entoloma humidiphilum* Kaygusuz, Reschke, Kaya, Noordel. & M.Piepenbr., *Entoloma ochraceodiscum* Kaygusuz, Reschke, Kleine, M.Carbone, A.Battaglini, Kaya & M.Piepenbr., and *Entoloma colchicum* Kaygusuz, Reschke, O.V.Morozova, Kaya, M. Piepenbr. & Rebriev, were presented as new species for science (Kaygusuz et al., 2024).

Suggested Citation:

Uzun, Y., Yeşilyurt, F. & Kaya, A. (2025). *Entoloma bloxamii*, a New Record for the Mycobiota of Türkiye. *Türler ve Habitatlar* 6(1): 41–45.

Here we present another *Entoloma* species, *Entoloma bloxamii* (Berk. & Broome) Sacc., which was not presented before (Sesli et al., 2020; Keleş & Kaya, 2023; Aslan et al., 2024; Dalkıran et al., 2024; Keleş et al., 2024; Uzun, 2024) from Türkiye, aiming to contribute to the mycobiota of Türkiye.

MATERIAL AND METHOD

Entoloma specimens were found during a routine field trip in the Akçaabat (Trabzon) district. First of all, the basidiomata were photographed in their natural habitat. After the collection of the fruit bodies, they were transferred to the fungarium within a paper box and dried in an air-conditioned room. Macromorphological parameters are based on fresh material. Microscopic investigations were carried out from dry material under a Leica DM 2500 trinocular light microscope, and the images related to micromorphology were taken by a Risincam Sony imx sensored 20 MP camera. Lactophenol Cotton Blue and 5% KOH are used for rehydration. Comparing the obtained data about macro and micromorphology of the investigated specimen with related literature (Breitenbach & Kränzlin, 1995; Buczacki, 2012; Morgado et al., 2013; Desjardin et al., 2014; Kuo, 2014; Siegel & Schwarz, 2016; Ainsworth et al., 2018; Læssøe & Petersen, 2019; Goodwin, 2025), the identification was performed. The specimens are kept at the Biology Department, Kamil Özdağ Science Faculty, Karamanoğlu Mehmetbey University.

RESULTS AND DISCUSSION

Basidiomycota R.T.Moore

Agaricales Underw.

Entolomataceae Kotl. & Pouzar

Entoloma bloxamii (Berk. & Broome) Sacc. [as 'bloxami'], Syll. fung. (Abellini) 5: 684 (1887).

Synonyms. *Agaricus bloxamii* Berk. & Broome, *Entoloma bloxamii* var. *triste* Boud., *Entoloma madidum* var. *bloxamii* (Berk. & Broome) Largent.

Macroscopic features. Pileus 35–70 mm in diameter, conic when young, conic-campanulate, conico-convex to broadly convex in age, usually with a broadly umbonate center, and incurved to decurved margin, some with wrinkled disc, surface subviscid when moist, smooth or radially appressed-fibrillose, some radially splitted when dry, dark violet-blue when young, bluish gray to bluish gray-brown at maturity. Flesh white, thick in the center, thin towards the margin. Taste and odor subfarinaceous. Lamellae crowded, adnate-emerginate, white to whitish when young later cream-pink to light pink-brown with a serrulate edge. Stipe 45–75 × 14–21 mm, cylindrical, some slightly tapered towards the apex, solid at first, hollow at maturity, surface blue with whitish longitudinal fibrils, brownish blue to whitish towards the base (Figure 1).

Microscopic features. Basidia 35–55 × 9.5–13.5 µm, cylindrical to clavate, 2 and 4 spored and with a basal clamp. Hymenial cystidia not observed. Basidiospores (8–)8.3–9.9(–10.3) × (6.6–)7.2–8.3(–8.7) µm, ovoid-angular, 6–9 angled in side-view. Pileipellis, an ixocutis, composed of 2–6 µm wide elements with abundant clamp connections (Figure 2).

Ecology. *Entoloma* species are commonly found in various habitats, including forests, grasslands, and disturbed areas. *Entoloma bloxamii* are generally reported to grow as solitary to gregariously in meadows, dry lawns, alpine meadows or in mixed hardwood-conifer forests (Breitenbach & Kränzlin, 1995; Morgado et al., 2013; Kuo, 2014; Ainsworth et al., 2018).

Turkish name. The suggested Turkish name for this species is “**Mavili kıvrıkbaş**”.

Specimen examined. Trabzon, Akçaabat, Kayabaşı High Plateau, on soil among grass in mixed forest clearing, 40.8323 N, 39.4592 E, 1650 m, 19.09.2024, FYF 418.



Figure 1. Basidiocarps of *Entoloma bloxamii*.

Entoloma bloxamii was reported as the 74th member of the genus *Entoloma* in Türkiye. Macro and micromorphological parameters of the investigated specimens are generally in agreement with Morgado et al. (2013), Kuo (2014), Desjardin et al. (2014) and Ainsworth et al. (2018).

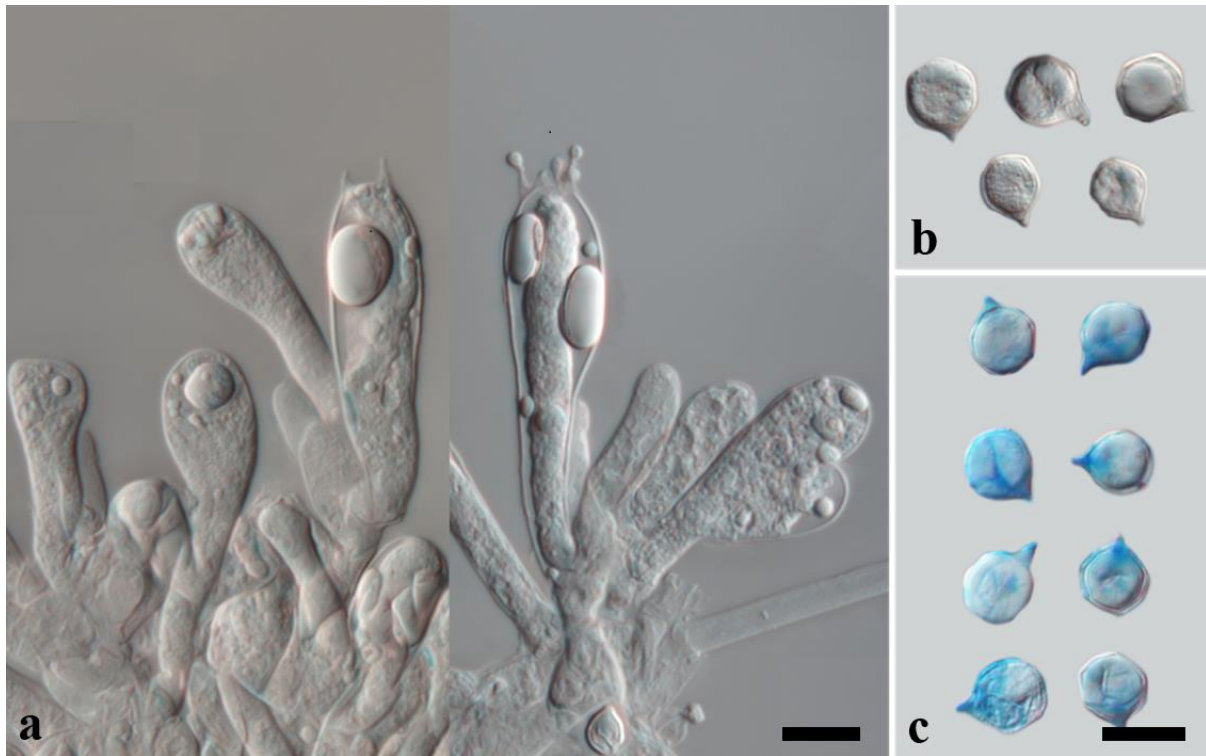


Figure 2. Basidia (a) and basidiospores (b & c) of *Entoloma bloxamii* (bars: 10 µm), (a: in 5% KOH, b: in KOH 5%, c: in Lactophenol Cotton Blue).

Entoloma bloxamii and look-alikes are characterized by tricholomatoid and blue pigmented fruit bodies. *Entoloma bloxamii* is somewhat similar to *E. madidum* Gillet in general appearance, but the latter species may easily be distinguished from *E. bloxamii* by its smaller basidiospores and the pure blue colored appearance, especially when young (Ainsworth et al., 2018). *Arrhenia chlorocyanea* (Pat.) Redhead, Lutzoni, Moncalvo & Vilgalys also has blue-colored fruit bodies and decurrent gills, but the smaller fruit bodies, white spore deposit and non-angular basidiospores easily distinguish it from *E. bloxamii* (Læssøe & Petersen, 2019).

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

- Ainsworth, A.M., Douglas, B. & Suz, L.M. (2018). Big Blue Pinkgills, formerly known as *Entoloma bloxamii* in Britain: *E. bloxamii* s. str., *E. madidum*, *E. ochreoprunuloides* forma *hyacinthinum* and *E. atromadidum* sp. nov. *Field Mycology* 19(1): 5-14. DOI: <https://doi.org/10.1016/j.fldmyc.2018.01.004>.
- Aslan, A.M., Uzun, Y. & Kaya, A. (2024). Macrofungi Determined in Aluçdağı Nature Park (Çamlıdere, Ankara) and its Close Environs. *Türler ve Habitatlar* 5(2): 48-63. DOI: <https://doi.org/10.53803/turvehab.1528292>.

- Breitenbach, J. & Kränzlin, F. (1995). *Fungi of Switzerland*. Vol. 4, Agarics (2nd Part), Entolomataceae, Pluteaceae, Amanitaceae, Agaricaceae, Coprinaceae, Strophariaceae. Verlag Mykologia, Luzern.
- Buczacki, S. (2012). *Collins Fungi Guide*. Harper Collins Publishers, London.
- Dalkıran, A., Türkekul, İ. & Işık, H. (2024). Macromycetes determined in Yıldız Mountain (Sivas). *Anatolian Journal of Botany* 8(2):128-33. DOI: <https://doi.org/10.30616/ajb.1454882>.
- Desjardin, D.E., Wood, M.G. & Stevens, F.A. (2014). *California Mushrooms, The Comprehensive Identification Guide*. Timber Press, London.
- Goodwin, L. (2025). *Entoloma bloxamii*. <http://www.englishfungi.org/Species/Entoloma%20bloxamii> [07.05.2025].
- Index Fungorum (2025). Index Fungorum, Search <http://www.indexfungorum.org/Names/Names.asp>. [20.04.2025].
- Kaygusuz, O., Reschke, K., Kaya, A., Dima, B., Morozova, O., Noordeloos, M.E. & Piepenbring, M. (2024). Morphology and molecular phylogeny of four new species of *Entoloma* (Entolomataceae, Agaricales) from Europe and Western Eurasia. *Mycological Progress* 23(1): 34. DOI: <https://doi.org/10.1007/s11557-024-01972-2>
- Keleş, A. & Kaya, A. (2023). Macromycetes determined in Çamlı (Of-Trabzon) village and its environs. *Anatolian Journal of Botany* 7(2):146-53. DOI: <https://doi.org/10.30616/ajb.1342763>.
- Keleş, A., Akçay, M.E., Uzun, Y., Sadullahoğlu, C. & Kesici, S. (2024). Macromycetes determined in Baykan (Siirt) District. *Anatolian Journal of Botany* 8(1): 77-83. DOI: <https://doi.org/10.30616/ajb.1451545>.
- Kuo, M. (2014). *Entoloma bloxamii*. Retrieved from the MushroomExpert.Com. Web site: http://www.mushroomexpert.com/entoloma_bloxamii.html [07.05.2025].
- Læssøe, T. & Petersen, J.H. (2019). *Fungi of Temperate Europe*. Vol. 1, Princeton University Press, Princeton.
- Morgado, L.N., Noordeloos, M.E., Lamoureux, Y. & Geml, J. (2013). Multi-gene phylogenetic analyses reveal species limits, phylogeographic patterns, and evolutionary histories of key morphological traits in *Entoloma* (Agaricales, Basidiomycota), *Persoonia* 31: 159-178. DOI: <http://dx.doi.org/10.3767/003158513X673521>.
- Sesli, E., Asan, A., Selçuk, F. (eds), Abacı Günyar, Ö., Akata, I., Akgül, H., Aktaş, S., Alkan, S., Allı, H., Aydoğdu, H., Berikten, D., Demirel, K., Demirel, R., Doğan, H.H., Erdoğdu, 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., Kırbağ, 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., and Yoltaş, A. (2020). *Türkiye Mantarları Listesi*. Ali Nihat Gökyiğit Vakfı Yayını, İstanbul.
- Siegel, N. & Schwarz, C. (2016). *Mushrooms of the Redwood Coast*. Ten Speed Press, Berkeley.
- Uzun, Y. (2024). The checklist of macrofungi of Karaman province. *Anatolian Journal of Botany* 8(2): 157-167. DOI: <https://doi.org/10.30616/ajb.1524720>.