

Macrofungi of Derebucak district (Konya, Turkey)*

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Abstract: Macrofungi specimens were collected from different localities in Derebucak district (Konya province) between 2005 and 2007, particularly during the autumn and spring. As a result 134 species were identified. Thirteen of them belong to *Ascomycota*, and the other 121 belong to the division *Basidiomycota*. According to the present literature about the macrofungi of Turkey, 6 taxa are new records for Turkey. These are *Lachnellula calyciformis* (Willd.) Dharne of the division *Ascomycota*, and *Hebeloma stenocystis* J.Favre, *Cortinarius calochrous* var. *coniferarum* (M.M.Moser) Nezdobjm., *Cortinarius cupreorufus* Brandrud, *Inocybe ayeri* Furrer-Ziogas, and *Calocera pallidospathulata* D.A.Reid of the division *Basidiomycota*.

Key words: Macrofungi, new records, Derebucak, Konya, Turkey

Derebucak (Konya - Türkiye) ilçesi makrofungusları

Özet: Bu çalışmada, Derebucak (Konya) ilçesinde farklı lokalitelerden 2005–2007 yıllarında özellikle ilkbahar ve sonbahar aylarında makrofungus örnekleri toplanmıştır. Sonuçta 134 makrofungus türü belirlenmiştir. Bu türlerin 13'ü *Ascomycota*, 121'i *Basidiomycota* bölümüne aittir. Makrofunguslar ile ilgili mevcut literatüre göre, 6 türün Türkiye için yeni kayıt olduğu tespit edilmiştir. Bunlar: *Ascomycota* bölümünden *Lachnellula calyciformis* (Willd.) Dharne'dir, *Basidiomycota* bölümünden ise *Hebeloma stenocystis* J.Favre, *Cortinarius calochrous* var. *coniferarum* (M.M. Moser) Nezdobjm., *Cortinarius cupreorufus* Brandrud, *Inocybe ayeri* Furrer-Ziogas, *Calocera pallidospathulata* D.A.Reid'dir.

Anahtar sözcükler: Makrofunguslar, yeni kayıtlar, Derebucak, Konya, Türkiye

Introduction

Our study area, Derebucak, is 140 km west of the centre of the city of Konya. Derebucak district covers 483 km² (Figure 1).

Between 1852 and December 2008, 484 articles were published and approximately 2400 macrofungi taxa were reported from Turkey (Solak et al., 2007;

Sesli & Denchev, 2009). Except for our study there is no report in the literature on the macrofungi flora of Derebucak district (Konya).

The prevalent trees in Derebucak are *Pinus nigra* J.F.Arnold, *Juniperus communis* L. subsp. *alpina*, *J. oxycedrus* L. subsp. *oxycedrus*, *Quercus robur* L. subsp. *robur*, *Abies* Mill., and *Salix* L.

* These species, new records for Turkey, were presented as a poster at the XIXth National Biology Congress (Alkan et al., 2008).

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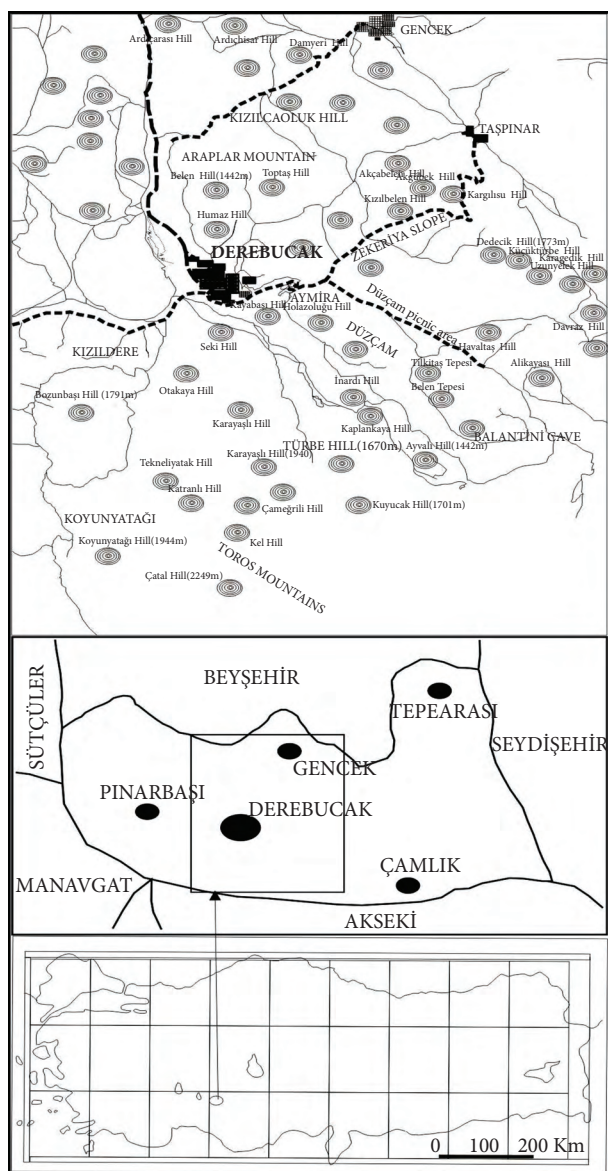


Figure 1. Map of Derebucak district (Konya).

There is no meteorological station in the study area. The nearest station is located in Beyşehir. According to measurements from this station, Derebucak province has a Mediterranean climate characterised by dry and warm summers, and cold and snowy winters. In this area annual rainfall is 1355.5 mm/m² (Meteoroloji Genel Müdürlüğü, 2005). Rainfalls are characterised by downpours.

The aim of our study was to determine the species of macrofungi in Derebucak's wild forest areas. Thus with this study we wanted to contribute to the macrofungi of Turkey.

Materials and methods

Macrofungi specimens were collected from different localities in Derebucak between 2005 and 2007, particularly during autumn and spring.

Two types of microscope (light microscopes and binocular microscopes) and reagents (Melzer's reagent, 3% KOH, 30% KOH, nitric acid, congo red, cotton blue, anilin, etc.) were used in the identification of macrofungi. Furthermore, we used a computer program (Leica Application Suite with Leica DM1000 microscope) to take photographs of the fungus spores, basidia, ascus, etc. for identification. The following literature was used for the identification of taxa: Watling (1973), Moser (1983), Breitenbach and Kränzlin (1984, 1986, 1991, 1995, 2000, 2005), Watling and Gregory (1989), Ellis and Ellis (1990), and Dähncke (1993). Sesli and Denchev (2009), Solak et al. (2007), and Doğan et al. (2005) were used to keep a check on taxa. The names of authors of macrofungus species were abbreviated according to Kirk and Ansell (1992). In the last 1 year, some new additions for Turkey's macrofungi have been given by Solak et al. (2009), Doğan and Karadelev (2009), Aktaş et al. (2009), Sermenli and Işiloğlu (2009), Kaya (2009), and Uzun et al. (2009).

After the macrofungi samples were identified and dried, we protected them in polyethylene bags along with their identity cards. All macrofungi samples are kept at Selçuk University, Fungarium of the Mushroom Application and Research Centre, in Konya.

Results

ASCOMYCOTA

LEOTIOMYCETES

HELOTIALES

HYALOSCYPHACEAE

1. * *Lachnellula calyciformis* (Willd.) Dharne

Fruiting body 1.5-3 mm, cup to saucer-shaped, with a short stalk. Hymenium smooth, orange-yellow. Outer surface and margin with white hairs (Figure 2).

Ascospores 4.5-7 × 2.5-3 μm, smooth, oval, hyaline. Ascus 8 spores, 40-60 × 4-5 μm. Paraphyses filiform or lanceolate.



Figure 2. *Lachnellula calyciformis*. a) dry sample from fungarium, b) ascus, paraphysis and hairs, c) hairs, d) spores.

Düzçam, picnic area, pine forest, 1450 m, 08.04.2006, *Alkan* 45; Çandır Mountain, Kızıldere, in fir forest, 1450 m, 04.11.2006, *Alkan* 302.

PEZIZOMYCETES

PEZIZALES

CALOSCYPHACEAE

2. *Caloscypha fulgens* (Pers.) Boud.

Düzçam, picnic area, in pine forest, 1450 m, 08.04.2006, *Alkan* 51; Türbe hill, in pine forest, 1650 m, 12.05.2006, *Alkan* 65.

DISCINACEAE

3. *Discina ancilis* (Pers.) Sacc.

Balatini Cave, pine, oak and fir forest, 1550 m, 08.04.2006, *Alkan* 50; Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 70; Koyun Yatağı, fir forest, 1800 m, 09.05.2007, *Alkan* 370.

4. *Gyromitra esculenta* (Pers.) Fr.

Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 60.

HELVELLACEAE

5. *Helvella lacunosa* Afzel.

Balatini Cave, in mixed forest (pine, oak, and fir), 1543 m, 28.10.2006, *Alkan* 181; Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 206.

6. *Helvella leucomelaena* (Pers.) Nannf.

Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 63; Düzçam, pine forest, 1500 m, 12.05.2006, *Alkan* 88; Zekerya Bayırı, pine forest, 1550 m, 12.05.2006, *Alkan* 99.

MORCHELLACEAE

7. *Morchella deliciosa* Fr.

Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 85.

8. *Morchella elata* Fr.

Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 86.

9. *Morchella esculenta* (L.) Pers.

Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 87.

PEZIZACEAE

10. *Peziza granulosa* Schumach.

Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 303.

11. *Sarcosphaera coronaria* (Jacq.) J. Schröt.

Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 81; Koyun Yatağı, fir forest, 1800 m, 09.05.2007, *Alkan* 372.

PYRONEMATACEAE

12. *Geopora sumneriana* (Cooke) M. Torre

Türbe hill, in pine forest, 1650 m, 12.05.2006, *Alkan* 69.

SARCOSYPHACEAE

13. *Pithya vulgaris* Fuckel

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 219.

BASIDIOMYCOTA

AGARICOMYCETES

AGARICALES

AGARICACEAE

14. *Agaricus aestivalis* var. *veneris* (R.Heim & G. Becker) Wasser

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 202.

15. *Agaricus bisporus* (J.E. Lange) Imbach

North of Araplar Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 12; Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 176.

16. *Agaricus bitorquis* (Quél.) Sacc.

Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 29.

17. *Agaricus campestris* var. *campestris* L.

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 201.

18. *Agaricus cupreobrunneus* (Jul. Schäff. & Steer) Pilát

North of Araplar Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 8; Düzçam, in pine forest, 1500 m, 28.10.2006, *Alkan* 111; Koyun Yatağı, in fir forest, 1800 m, 29.10.2006, *Alkan* 240.

19. *Agaricus macrocarpus* (F.H.Møller) F.H.Møller

Balatini Cave, in pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 179.

20. *Coprinus comatus* (O.F. Müll.) Pers.

Koyun Yatağı, in meadowland, 1800 m, 29.10.2006, *Alkan* 212.

21. *Crucibulum laeve* (Huds.) Kambly

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 119.

22. *Cyathus olla* (Batsch) Pers.

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 118.

23. *Cystoderma amianthinum* (Scop.) Fayod

Balatini Cave, pine, oak, and fir forest, 1550 m, 28.10.2006, *Alkan* 171; Düzçam, picnic area, pine forest, 1450 m, 04.11.2006, *Alkan* 317.

24. *Cystodermella granulosa* (Batsch) Harmaja

Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 33; Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 106; Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 193; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 253.

25. *Lepiota oreadiformis* Velen.

Koyun Yatağı, in fir forest, 1800 m, 29.10.2006, *Alkan* 217.

26. *Lepiota xanthophylla* P. D. Orton

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 210.

27. *Lycoperdon molle* Pers.

North of Araplar Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 4; Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 77; Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 121; Balatini Cave, pine, oak, and fir forest, 1550 m, 28.10.2006, *Alkan* 157; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 256.

28. *Lycoperdon perlatum* Pers.

Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 25; Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 110; Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 149; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 220.

29. *Lycoperdon pyriforme* Schaeff.

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 241.

30. *Macrolepiota excoriata* (Schaeff.) Wasser

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 109; 04.11.2006, *Alkan* 315. Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 184.

31. *Macrolepiota konradii* (Huijsman ex P.D. Orton) M.M. Moser

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 196.

32. *Macrolepiota mastoidea* (Fr.) Singer

Düzçam, picnic area, pine forest, 1450 m, 04.11.2006, *Alkan* 313.

33. *Macrolepiota procera* var. *procera* (Scop.) Singer

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 235.

CORTINARIACEAE

34. **Cortinarius calochrous* var. *coniferarum* (M.M. Moser) Nezdobjm.

Pileus 40-70 mm, at first convex then plane. Surface dull when dry, lubricous when moist. Ochre-yellow colours, in the centre orange-yellow with darker brown squamules. Flesh whitish when dry, olive-grey when moist, thick in the centre of the pileus, thin toward the margin, pale grey-lilac in the stipe, odourless, taste mild, insipid. Lamellae pale lilac, soon rust-brown, broad, edges smooth to slightly crenate. Stipe 40-60 × 6-10 mm, cylindrical, solid, fragile, base with a marginate bulb. Surface grey-white, soon brownish. KOH on the flesh without a reaction, on the pileal surface pink to brown-red (Figure 3).

Spores 10-12 × 6-7 µm, elliptical to amygdaliform, yellow-brown, verrucose. Basidia clavate, 30-35 × 11-12 µm, with 4 sterigmata.

Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 40; Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 204; Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 153; Koyun Yatağı, in fir forest, 1800 m, 29.10.2006, *Alkan* 238.

35. * *Cortinarius cupreorufus* Brandrud

Pileus 40-70 mm, at first hemispherical, soon convex to plane. Surface smooth, dull when dry, shiny and lubricous when moist, grey-olive to copper-brown. Flesh whitish to light grey-green, pale wine-red in the base of the stipe, odourless, taste mild. Lamellae sulphur-yellow to olive-green when young, soon brown-olive, narrow, notched and attached, edges crenate. Stipe 30-70 × 12-20 mm, cylindrical with a marginate-bulbous base, solid, fragile and longitudinally fibrillose, pale yellow to light greenish-yellow. Flesh yellow at first, soon turning greenish and then red-brown or wine-brown with KOH (Figure 4).

Spores 9-12 × 5-7 µm, yellow-brown, strongly verrucose and amygdaliform to citriniform. Basidia clavate, 25-35 × 8-10 µm, with 4 sterigmata and a basal clamp.

Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 280.



Figure 3. *Cortinarius calochrous* var. *coniferarum*. a) dry sample from fungarium, b) basidium and spores, c) spores.

36. *Cortinarius orellanus* Fr.

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 200.

ENTOLOMATACEAE

37. *Entoloma hirtipes* (Schumach.) M.M. Moser

Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 39; Balatini Cave, pine, oak and fir forest, 1550 m, 08.04.2006, *Alkan* 58.

38. *Entoloma sinuatum* (Bull.) P. Kumm.

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 122.

HYDNANGIACEAE

39. *Laccaria laccata* (Scop.) Cooke

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 128.

HYGROPHORACEAE

40. *Hygrophorus chrysodon* (Batsch) Fr.

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 242; Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 286.

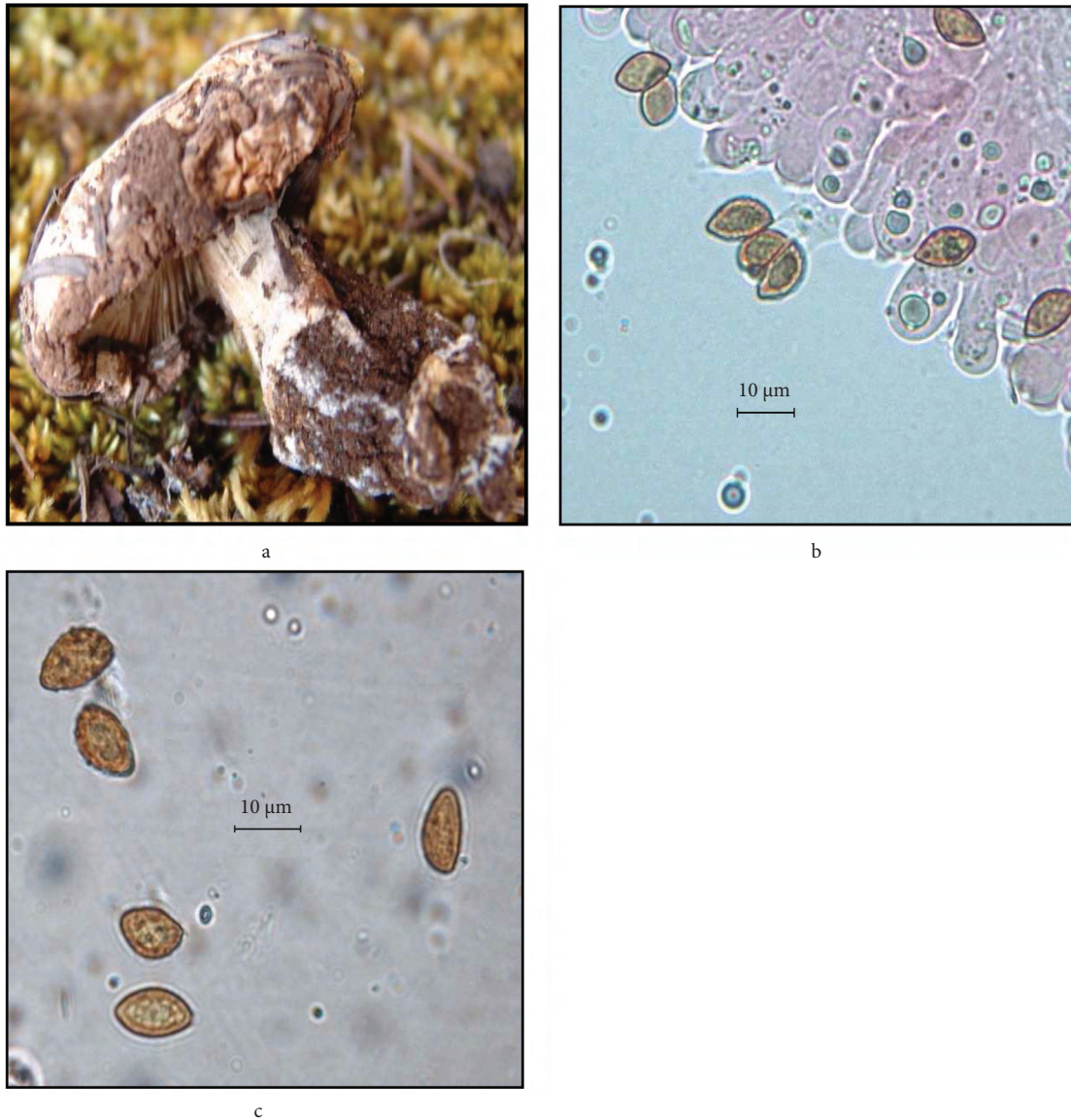


Figure 4. *Cortinarius cupreorufus*. a) dry sample from fungarium, b) basidium and spores, c) spores.

41. *Hygrophorus speciosus* Peck

Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 279.

INOCYBACEAE

42. * *Inocybe ayeri* Furrer-Ziogas

Pileus 20-50 mm across, at first hemispherical, soon convex to plane, surface woolly-fibrillose when young, cream-ochre to light grey-ochre. Flesh whitish, thin, odour spermatic, taste mild. Lamellae grey-

white, soon light brown, broad, edges white-ciliate. Stipe 20-50 × 5-10 mm, cylindrical, solid, fragile, surface brownish with white woolly or white-fibrillose (Figure 5).

Spores 8-11 × 4-6 µm, thick-walled, elliptical to phaseoliform, smooth, light ochre-yellow. Basidia clavate, 25-30 × 6-9 µm, with 2 or 4 sterigmata and a basal clamp.

Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 73.

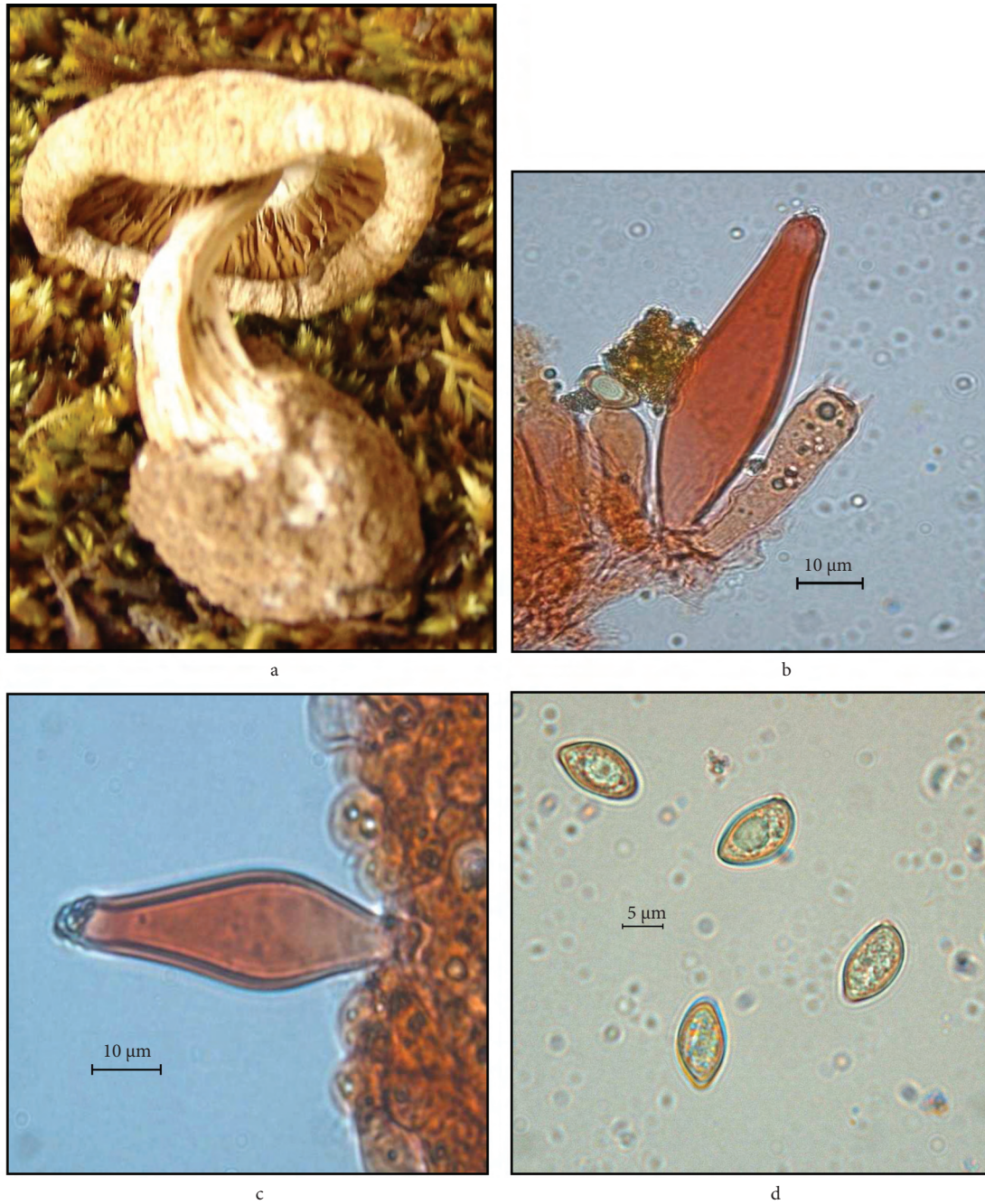


Figure 5. *Inocybe ayeri*. a) dry sample from fungarium, b) basidium and cheilocystidia, c) cheilocystidia, d) spores.

43. *Inocybe catalaunica* Singer

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 216; Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 275.

44. *Inocybe cervicolor* (Pers.) Quel.

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10. 2006, *Alkan* 189.

45. *Inocybe dulcamara* (Alb. & Schwein.) P. Kumm.

Düzçam, picnic area, pine forest, 1450 m, 04.11.2006, *Alkan* 322.

46. *Inocybe flocculosa* (Berk.) Sacc.

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 130; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 218.

47. *Inocybe fuscidula* var. *fuscidula* Velen.

North of Araplar Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 14; Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 83; Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 190.

48. *Inocybe rimosa* var. *rimosa* (Bull.) P. Kumm

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 215; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 251. Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 270.

49. *Inocybe splendens* var. *phaeoleuca* (Kühner) Kuyper

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 131.

50. *Inocybe splendens* var. *splendens* R. Heim

Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 44.

51. *Tubaria furfuracea* (Pers.) Gillet

Zekerya Bayırı, pine forest, 1550 m, 12.05.2006, *Alkan* 104; Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 125.

LYOPHYLLACEAE

52. *Lyophyllum decastes* (Fr.) Singer

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 186; 04.11.2006, *Alkan* 299; Düzçam, picnic area, pine forest, 1450 m, 04.11.2006, *Alkan* 319.

MARASMIACEAE

53. *Gymnopus dryophilus* (Bull.) Murrill

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 145.

MYCENACEAE

54. *Mycena amicta* (Fr.) Quél.

Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 41.

55. *Mycena pura* (Pers.) P. Kumm.

Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 169.

56. *Mycena stipata* Maas Geest. & Schwöbel

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 207; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 213.

57. *Panellus mitis* (Pers.) Singer

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 133; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 226.

58. *Panellus violaceofulvus* (Batsch) Singer

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 248.

59. *Xeromphalina campanella* (Batsch) Maire

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 113; Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 183; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 250.

PHYSALACRIACEAE

60. *Xerula pudens* (Pers.) Singer

Balatini Cave, pine, oak, and fir forest, 1550 m, 28.10.2006, *Alkan* 161; Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 188; 04.11.2006, *Alkan* 267.

61. *Strobilurus stephanocystis* (Kühner & Romagn. ex Hora) Singer

Balatini Cave, pine, oak, and fir forest, 1550 m, 08.04.2006, *Alkan* 53; Aymiyarı, pine forest, 1500 m, 12.05.2006, *Alkan* 96.

PLEUROTACEAE

62. *Hohenbuehelia semi-infundibuliformis* (P. Karst.) Singer

North of Araplar Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 11.

63. *Pleurotus ostreatus* (Jacq.) P. Kumm.

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 198; 04.11.2006, *Alkan* 300.

PLUTEACEAE

64. *Volvariella gloiocephala* (DC.) Boekhout & Enderle

Düzçam, pine forest, 1500 m, 12.05.2006, *Alkan* 90.

PSATHYRELLACEAE

65. *Coprinellus flocculosus* (DC.) Vilgalys, Hopple & Jacq. Johnson

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 141.

66. *Coprinellus micaceus* (Bull.) Vilgalys, Hopple & Jacq. Johnson

Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 59.

67. *Panaeolus papilionaceus* var. *papilionaceus* (Bull.) Quél.

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 214.

SCHIZOPHYLLACEAE

68. *Schizophyllum commune* Fr.

Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 162.

STROPHARIACEAE

69. *Agrocybe praecox* (Pers.) Fayod

Düzçam, in pine forest, 1500 m, 28.10.2006, *Alkan* 135.

70. *Galerina badipes* (Fr.) Kühner

Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 71; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 255.

71. *Galerina paludosa* (Fr.) Kühner

Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 274.

72. *Galerina sphagnum* (Pers.) Kühner

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 246.

73. *Gymnopilus penetrans* (Fr.) Murrill

Balatini Cave, in pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 172; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 222.

74. *Hebeloma crustuliniforme* (Bull.) Quél.

Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 43.

75. *Hebeloma longicaudum* (Pers.) P. Kumm.

North of Araplar Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 10; Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 38; Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 282.

76. *Hebeloma sinapizans* (Fr.) Sacc.

North of Araplar Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 9; Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 34; Düzçam, pine forest, 1500 m, 12.05.2006, *Alkan* 95; Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 278.

77. * *Hebeloma stenocystis* J. Favre

Pileus 40-60 mm, firstly conical to campanulate. Later convex to plane with umbo. Surface smooth, dull, lubricous and shiny when moist. Yellowish-beige to light ochre-brown. Marginal zone whitish. Flesh whitish, thin, odour raphanoid, taste bitter. Lamellae whitish when young, later ochre-brown and dark-brown. Punctate, broad, notched and attached edges white-ciliate. Stipe 40-60 × 6-8 mm, cylindrical, solid. Hollow when old, fragile. Surface whitish with whitish-floccose squamose, fibrillose, apex floccose (Figure 6).

Spores 10-13 × 6-8 µm, elliptical to amygdaliform, weakly verrucose, light yellow, dextrinoid. Basidia slenderly clavate to ventricose 25-35 × 8-10 µm. Basidia has 4 sterigmata and a basal clamp. Cheilocystidia cylindrical to slightly clavate, 50-135 × 7-11 µm. Pleurocystidia not seen. Caulocystidia present at stipe apex.

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 259.

78. *Pholiota populnea* (Pers.) Kuyper & Tjall.-Beuk.

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 244.

79. *Stropharia semiglobata* (Batsch) Quél.

Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 175.

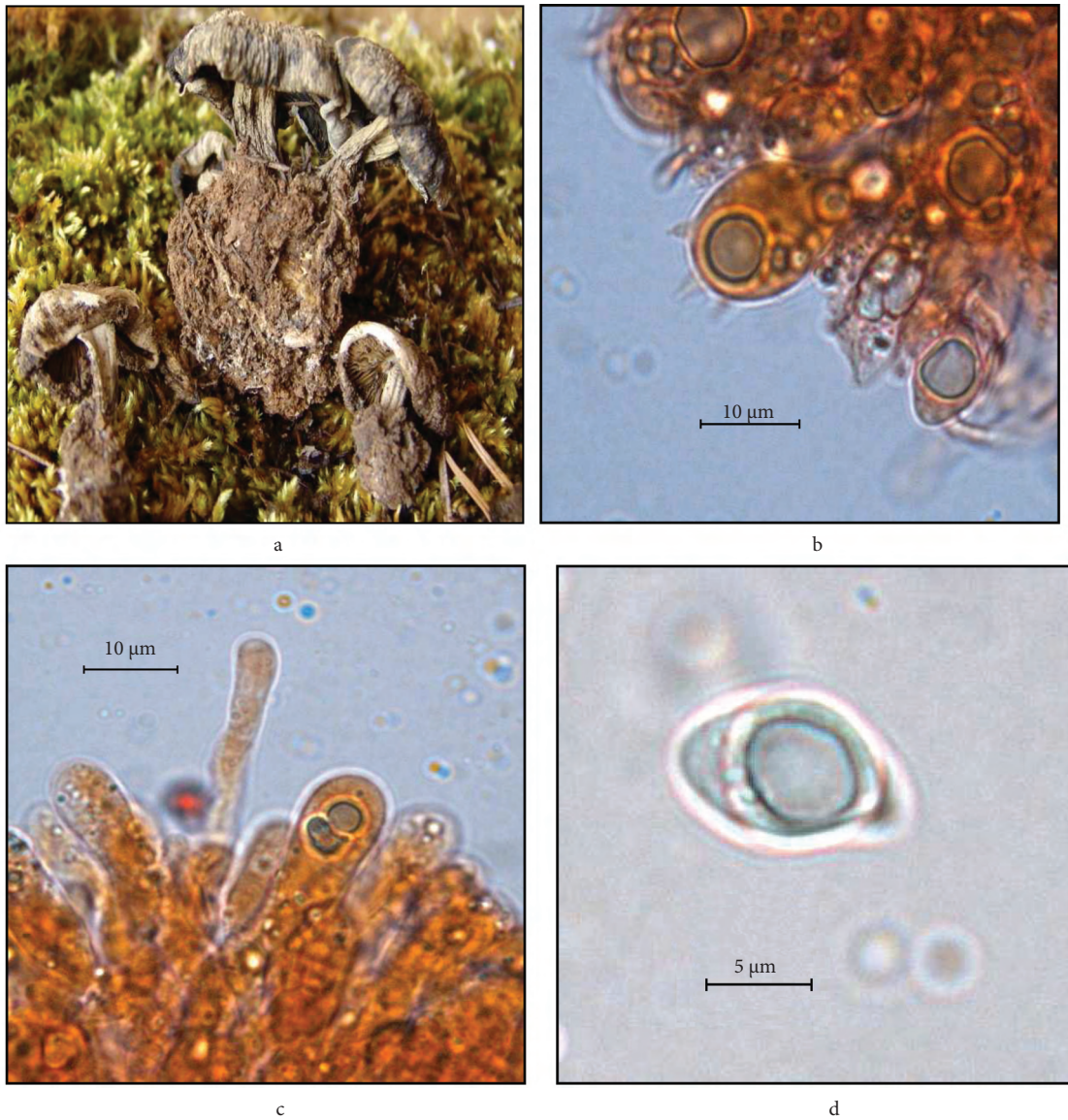


Figure 6. *Hebeloma stenocystis*. a) dry sample of fungarium, b) basidium, c) cheilocystidia, d) spore.

TRICHOLOMATACEAE

80. *Arrhenia onisca* (Fr.) Redhead, Lutzoni, Moncalvo & Vilgalys

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 139.

81. *Arrhenia velutipes* (P.D. Orton) Redhead, Lutzoni, Moncalvo & Vilgalys Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 136.

82. *Clitocybe brumalis* (Fr.) Quél.

North of Araplar Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 16.

83. *Clitocybe candida* Bres.

Balatini Cave, pine, oak, and fir forest, 1550 m, 28.10.2006, *Alkan* 160; Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 185.

- 84. *Clitocybe costata*** Kühner & Romagn.
North of Araplars Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 17.
- 85. *Clitocybe dealbata*** (Sowerby) Gillet
North of Araplars Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 19; Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 105.
- 86. *Clitocybe fragrans*** (With.) P. Kumm.
Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 148.
- 87. *Clitocybe gibba*** (Pers.) P. Kumm.
Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 277.
- 88. *Clitocybe odora*** (Bull.) P. Kumm.
Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 261.
- 89. *Clitocybe vibecina*** (Fr.) Quél.
Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 37.
- 90. *Melanoleuca cognata*** var. *cognata* (Fr.) Konrad & Maubl.
Türbe hill, pine forest, in meadows, 1650 m, 12.05.2006, *Alkan* 82.
- 91. *Melanoleuca graminicola*** (Velen.) Kühner & Maire
North of Araplars Mountain, pine and oak forest, in grasses, 1300 m, 01.11.2005, *Alkan* 20.
- 92. *Melanoleuca schumacheri*** (Fr.) Singer
Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 156.
- 93. *Melanoleuca stridula*** (Fr.) Singer
Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 167.
- 94. *Phyllotopsis nidulans*** (Pers.) Singer
Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 230.
- 95. *Tricholoma fracticum*** (Britzelm.) Kreisel
Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 30; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 245; Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 284.

- 96. *Tricholoma myomyces*** (Pers.) J.E. Lange
North of Araplars Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 5; Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 23; Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 260.
- 97. *Tricholoma orirubens*** Quél.
Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 140; Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 273.
- 98. *Tricholomopsis rutilans*** (Schaeff.) Singer
Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 223.

AURICULARIALES

EXIDIACEAE

- 99. *Pseudohydnum gelatinosum*** (Scop.) P. Karst.
Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 237; Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 304.

BOLETALES

DIPLOCYSTIDIACEAE

- 100. *Astraeus hygrometricus*** (Pers.) Morgan
Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 31.

GOMPHIDIACEAE

- 101. *Gomphidius glutinosus*** (Schaeff.) Fr.
Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 163.

RHIZOPOGONACEAE

- 102. *Rhizopogon luteolus*** Fr. & Nordholm
Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 26; Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 115.
- 103. *Rhizopogon roseolus*** (Corda) Th. Fr.
Zekerya Bayırı, pine forest, 1550 m, 12.05.2006, *Alkan* 103; Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 151; Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 269.

SUILLACEAE

104. *Suillus grevillei* (Klotzsch) Singer

Kızılca Oluk, pine forest, 1300 m, 01.11.2005, *Alkan* 27; Düzçam, pine forest, 1500 m, 12.05.2006, *Alkan* 92; Zekerya Bayırı, pine forest, 1550 m, 12.05.2006, *Alkan* 101; Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 263.

105. *Suillus luteus* (L.) Roussel

Aymiyarı, pine forest, 1500 m, 12.05.2006, *Alkan* 97; Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 120; Düzçam, picnic area, pine forest, 1450 m, 04.11.2006, *Alkan* 320.

GEASTRALES

GEASTRACEAE

106. *Geastrum fimbriatum* Fr.

Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 177.

107. *Geastrum pectinatum* Pers.

Balatini Cave, pine, oak and fir forest, 1550 m, 08.04.2006, *Alkan* 46; 28.10.2006, *Alkan* 150; Düzçam, pine forest, 1500 m, 12.05.2006, *Alkan* 89; Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 208; 04.11.2006, *Alkan* 268; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 249.

108. *Geastrum triplex* Jungh.

North of Araplar Mountain, pine and oak forest, 1300 m, 01.11.2005, *Alkan* 2.

GOMPHALES

CLAVARIADELPHACEAE,

109. *Clavariadelphus truncatus* (Quél.) Donk

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 209; 04.11.2006, *Alkan* 265; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 221.

GOMPHACEAE

110. *Ramaria flaccida* (Fr.) Bourdot

Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 289.

111. *Ramaria flava* (Schaeff.) Quél.

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 203; 04.11.2006, *Alkan* 290.

HYMENOGYSALES

HYMENOGYSALEACEAE

112. *Phellinus pomaceus* (Pers.) Maire

Türbe hill, pine forest, 1650 m, 12.05.2006, *Alkan* 80.

POLYPORALES

FOMITOPSIDACEAE

113. *Antrodia juniperina* (Murrill) Niemelä & Ryvardeen

Balatini Cave, pine, oak and fir forest, 1550 m, 08.04.2006, *Alkan* 49.

POLYPORACEAE

114. *Fomes fomentarius* (L.) J. Kickx f.

Düzçam, pine forest, on hardwoods tree, 1500 m, 28.10.2006, *Alkan* 116.

115. *Lentinus tigrinus* (Bull.) Fr.

Çandır Mountain, Kızıldere, fir forest, on dead *Salix* branches, 1450 m, 28.10.2006, *Alkan* 199.

116. *Pyrofomes demidoffii* (Lév.) Kotl. & Pouzar

Düzçam, picnic area, pine forest, on conifer, 1450 m, 08.04.2006, *Alkan* 47.

117. *Trametes hirsuta* (Wulfen) Lloyd

Türbe hill, pine forest, on conifer wood, 1650 m, 12.05.2006, *Alkan* 78; Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 117.

118. *Trametes versicolor* (L.) Lloyd

Türbe hill, pine forest, on conifer wood, 1650 m, 12.05.2006, *Alkan* 66.

119. *Trichaptum abietinum* (Dicks.) Ryvardeen

Koyun Yatağı, fir forest, on fir wood, 1800 m, 29.10.2006, *Alkan* 228.

RUSSULALES

RUSSULACEAE

120. *Lactarius salmonicolor* R.Heim & Leclair

Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 309.

121. *Lactarius sanguifluus* (Paulet) Fr.

Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 310; Düzçam, pine forest, 1500 m, 04.11.2006, *Alkan* 351.

122. *Russula atrorubens* Quél.

Düzçam, pine forest, 1500 m, 04.11.2006, *Alkan* 345.

123. *Russula cavipes* Britzelm.

Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 306; Düzçam, pine forest, 1500 m, 04.11.2006, *Alkan* 335.

124. *Russula delica* Fr.

Düzçam, picnic area, pine forest, 1450 m, 04.11.2006, *Alkan* 325; Düzçam, pine forest, 1500 m, 04.11.2006, *Alkan* 332.

125. *Russula ochroleuca* (Pers.) Fr.

Balatini Cave, pine, oak and fir forest, 1550 m, 28.10.2006, *Alkan* 182; Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 308; Düzçam, pine forest, 1500 m, 04.11.2006, *Alkan* 348.

126. *Russula paludosa* Britzelm.

Düzçam, pine forest, 1500 m, 04.11.2006, *Alkan* 344.

127. *Russula silvestris* (Singer) Reumaux

Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 311.

128. *Russula queletii* Fr.

Çandır Mountain, Kızıldere, fir forest, 1450 m, 04.11.2006, *Alkan* 305; Düzçam, picnic area, pine forest, 1450 m, 04.11.2006, *Alkan* 327; Düzçam, pine forest, 1500 m, 04.11.2006, *Alkan* 340.

129. *Russula torulosa* Bres.

Düzçam, picnic area, pine forest, 1450 m, 04.11.2006, *Alkan* 330; Düzçam, pine forest, 1500 m, 04.11.2006, *Alkan* 355.

STEREACEAE

130. *Stereum hirsutum* (Willd.) Pers.

Balatini Cave, pine, oak and fir forest, on oak branches, 1550 m, 08.04.2006, *Alkan* 55; Çandır Mountain, Kızıldere, fir forest, on fir branches, 1450 m, 04.11.2006, *Alkan* 294.

THELEPHORALES

BANKERACEAE

131. *Boletopsis leucomelaena* (Pers.) Fayod

Çandır Mountain, Kızıldere, fir forest, 1450 m, 28.10.2006, *Alkan* 195; Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 236.

DACRYMYCETES

DACRYMYCETALES

DACRYMYCETACEAE

132. * *Calocera pallidospathulata* D.A. Reid

Fruitbodies 1 cm, with cylindrical, whitish stalk, upper part clavate, whitish or pale yellowish. Basidia 25-40 × 3-4 µm. Spores hyaline, 10-15 × 3-4 µm, ellipsoid or somewhat allantoid, when mature with 1-3 rather thin transverse septa. On wood of conifers (Figure 7).

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 231.

133. *Dacrymyces stillatus* Nees

Koyun Yatağı, fir forest, 1800 m, 29.10.2006, *Alkan* 233.

134. *Dacrymyces variisporus* McNabb

Düzçam, pine forest, 1500 m, 28.10.2006, *Alkan* 138; Balatini Cave, pine, oak, and fir forest, 1550 m, 28.10.2006, *Alkan* 155.

Discussion

We collected macrofungus specimens from areas of Derebucak (Konya) district. As a result of the field and laboratory studies, 134 species belonging to 71 genera of 2 divisions, 12 orders, and 39 families were identified. Thirteen of them belong to *Ascomycota*, and the other 121 species belong to *Basidiomycota*.

In this study 13 taxa were collected from the division *Ascomycota*. These species comprised 9.7% of all taxa. From the division *Basidiomycota* 121 species were collected. Thus these species comprised 90.3% of all taxa. Furthermore, 37.31% of all species consisted of *Agaricaceae*, *Strophariaceae*, and *Tricholomataceae*.

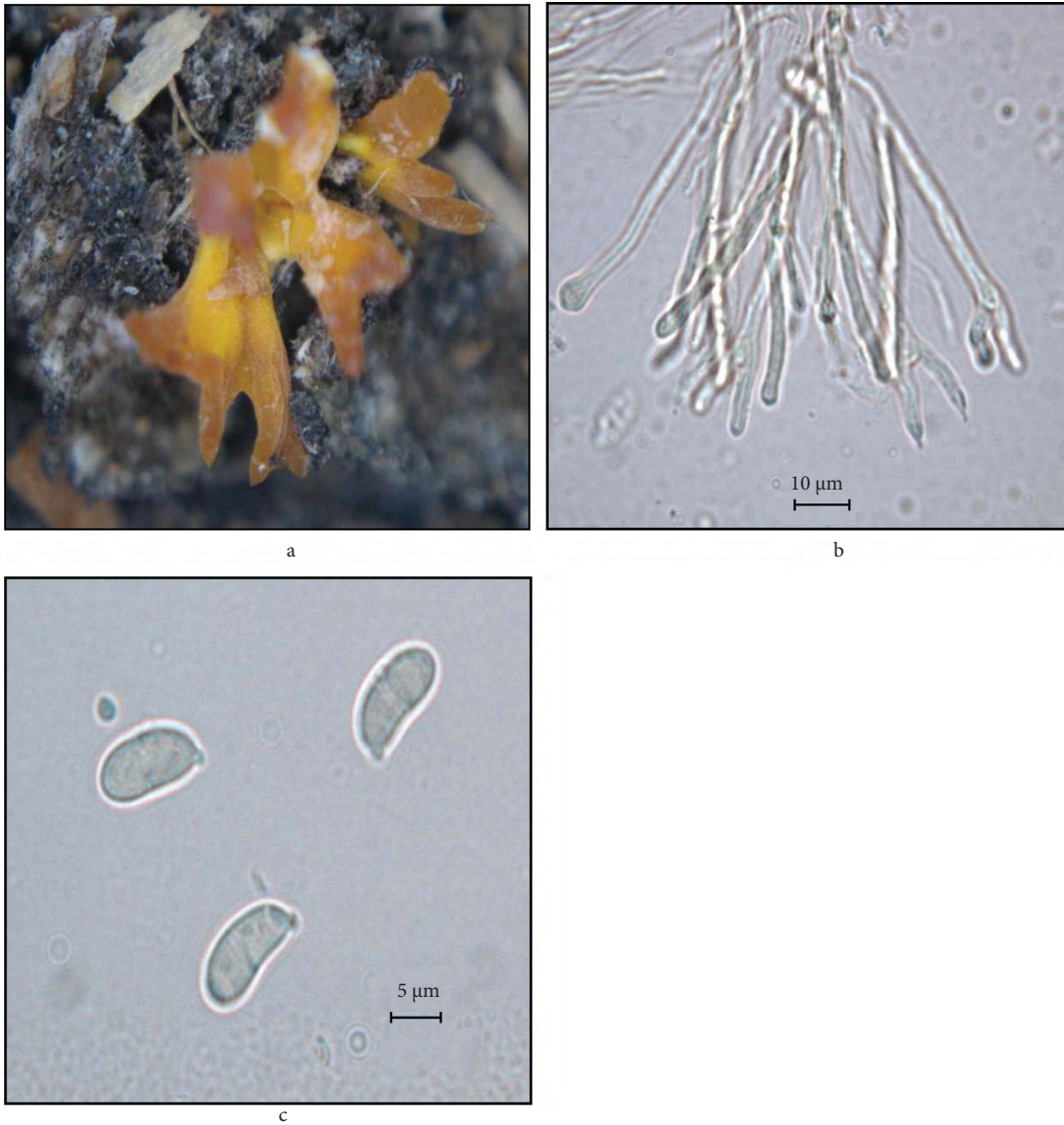


Figure 7. *Calocera pallidospathulata*. a) dry sample from fungarium, b) basidium, c) spores.

According to the present literature about the macrofungi of Turkey, 6 taxa are new records for Turkey. These are *Lachnellula calyciformis* (Willd.) Dharne of the division *Ascomycota*, and *Hebeloma stenocystis* J. Favre, *Cortinarius calochrous* var. *coniferarum* (M.M. Moser) Nezdobjm., *Cortinarius cupreorufus* Brandrud, *Inocybe ayeri* Furrer-Ziogas, and *Calocera pallidospathulata* D. A. Reid of the division *Basidiomycota*.

Both edible and poisonous specimens always grow in Derebucak's wild areas. Fifty macrofungi have been identified "edible" according to the present literature

and 6 of them belong to *Ascomycota* and the other 44 species belong to the division *Basidiomycota*. However, people in the vicinity know only 16 macrofungus as edible.

Furthermore, *Lactarius* species known as kanlıca, çıntar, espit, and melki have been eaten by local people because of their colours. Therefore, during field studies, we explained to people that they are edible.

Nineteen specimens of all taxa have been identified as poisonous macrofungi.

In conclusion, we have contributed 134 macrofungi taxa from different localities in Derebucak's forests to the macromycota of Turkey. Six of these taxa are new records.

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