

Macrofungi of Yahyalı (Kayseri) Province

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Abstract: Some macrofungi specimens were collected from Yahyalı (Kayseri) province in 2000-2001. As a result of field and laboratory studies, 94 taxa belonging to 28 families were identified. Nine species belong to *Ascomycotina* and 85 to *Basidiomycotina*. The distribution, habitat and collecting numbers of the identified species are given.

Key Words: Macrofungi, Biomass, Macrofungal distribution, Yahyalı (Kayseri), Turkey

Yahyalı (Kayseri) Yöresinin Makrofungusları

Özet: Bu çalışmada, 2000-2001 yılları arasında Yahyalı (Kayseri) yöresinden bazı makrofungus örnekleri toplanmıştır. Arazi ve laboratuvar çalışmaları sonucu 28 familya'ya ait 94 takson teşhis edilmiştir. Bu türlerden dokuzu *Ascomycotina* ve 85'i de *Basidiomycotina*'ya aittir. Belirlenen türlerin yayılışı, habitatu ve toplama numaraları verilmiştir.

Anahtar Sözcükler: Makrofunguslar, Biyomas, Makrofungus dağılımı, Yahyalı (Kayseri), Turkey

Introduction

Many studies on the macrofungi of Turkey have been conducted and some of them are continuing. However, the macrofungi flora of Turkey has not yet been completed.

Yahyalı, a town in the province of Kayseri, was chosen as the investigation area (Figure 1). After a review of the relevant literature, it appears that no previous macrofungi studies have been carried out in this area. The aim of this study was to determine the macrofungi of the province, to identify edible and poisonous species and to contribute to the macrofungi flora of Turkey.

According to Akman (1990), the study area has a typically continental or steppe climate. The climatic characteristics reflect the dominant vegetation of the province. The most widespread plants in the province are *Astragalus* L. sp., *Ferula* L. sp., *Styrax officinalis* L., *Salvia* L. sp., *Populus* L. sp., *Salix* L. sp. and *Tamarix* L. sp. In addition, *Pinus brutia* Ten., *Pinus nigra* J.F.Arn. subsp. *nigra* var. *caramanica* (Loud.) Reh., *Cedrus libani* A.Rich., *Abies cilicica* (Ant. & Kotschy) Carr subsp. *cilicica*,

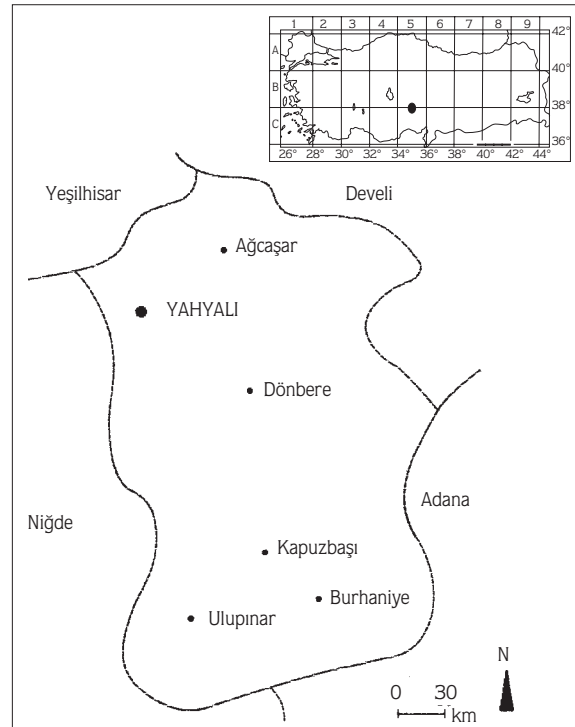


Figure 1. Collection areas.

Juniperus oxycedrus L., *Juniperus excelsa* Bieb. and *Quercus cerris* L. are very common in the southern districts of Yahyalı. The suitable climate and the type of vegetation make it a very favourable place for the growth of macrofungi.

Materials and Methods

Macrofungi were collected from Yahyalı province during field trips in 2000 and 2001. All species were photographed and their morphological and ecological features were noted in the field. The samples were then taken to the laboratory. Spore prints were obtained and spore dimensions were measured using an ocular micrometer. As a result of the field and laboratory studies, 94 taxa were identified. Identification and classification were carried out according to Breitenbach & Kränzlin (1984-1995), Bresinsky & Besl (1990), Dähncke (1993), Ellis & Ellis (1990), Gerhardt (1997), Grünert & Grünert (1984, 1991), Henning & Kreisel (1987), Moser (1983), Pace (1998); Pacioni (1993) and Phillips (1981).

All macrofungi samples were deposited at Selçuk University, Fungarium of the Mushroom Application and Research Centre, in Konya.

Results

The identified macrofungi consisted of 94 taxa belonging to 28 families. These taxa's localities, habitats, altitudes, collection dates, and accession numbers are listed below.

ASCOMYCETES

MORCHELLACEAE

1. *Mitrophora semilibera* (DC.: Fr.) Lév.

Ağcaşar, near the Ağcaşar dam, 1200 m, 02.05.2000, Türkoğlu 58, Hacer Forest, Soğuk Pınar district, on sandy soil amongst poplar trees, 1700 m, 29.04.2001, Türkoğlu 632.

2. *Morchella conica* Pers. var. *conica*

Hacer Forest, in mixed black pine and cedar forest, 1600 m, 18.05.2000, Türkoğlu 96, 122, Ulupınar Village, in black pine forest, 1600 m, 19.05.2000, Türkoğlu, Doğan 124, Hacer Forest, Tuzak Plateau, in mixed black pine and cedar forest, 1650 m, 29.04.2001, Türkoğlu 628.

3. *Morchella elata* Fr.

Hacer Forest, Bozarmut district, mixed black pine and cedar forest, 1750 m, 19.05.2000, Türkoğlu, Doğan 110.

4. *Morchella esculenta* Pers.: St. Amans var. *vulgaris* Pers.

Hacer Forest, Tuzak Plateau, in cedar forest, 1650 m, 29.04.2001, Türkoğlu 624, 626.

HELVELLACEAE

5. *Helvella acetabulum* (L.) Quéf.

Syn: *Paxina acetabulum* (L.: S.T.Amans) O.Kuntze

Hacer Forest, Bozarmut district, amongst poplar and willow trees, 1750 m, 29.04.2001, Türkoğlu 619.

PEZIZACEAE

6. *Sarcosphaera crassa* (Santi: Steudel) Pouz.

Syn: *S. eximia* (Dur. & Lév.) R.Mre.; *S. coronaria* (Jacq.: Cke.) Boud.

Hacer Forest, Katran Korusu district, in black pine and cedar forest, 1800 m, 04.11.2000, Türkoğlu 251.

HUMARIACEAE

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

Hacer Forest, Soğuk Pınar district, in black pine and cedar forest, 1700 m, 29.04.2001, Türkoğlu 633, Mansurlu Village, Yukarı Burhaniye district, in black pine and cedar forest, 1550 m, 30.04.2001, Türkoğlu 655.

8. *Sepultaria arenosa* (Fuckel) Boud.

Mansurlu Village, Yukarı Burhaniye district, in black pine and cedar forest, 1500 m, 30.04.2001, Türkoğlu 674.

9. *Sepultaria sumneriana* (Cke.) Mass.

Mansurlu Village, Aşağı Burhaniye district, in black pine and cedar forest, 1650 m, 30.04.2001, Türkoğlu 658, 661.

BASIDIOMYCETES

CLAVARIACEAE

10. *Clavariadelphus truncatus* (Quéf.) Donk

Hacer Forest, Tuzak Plateau, in black pine forest, 1650 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 258.

RAMARIACEAE

11. *Ramaria flava* (Schff.: Fr.) Quél.

Syn: *Clavaria flava* Fr.

Mansurlu Village, Darboğaz district, in cedar forest, 1650 m, 28.05.2000, Türkoğlu 140, Mansurlu Village, Yukarı Burhaniye district, in cedar forest, 1500, 29.10.2000, Kaşık, Türkoğlu 202. Hacer Forest, Yelbeleni district, in cedar forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 249, 255.

THELEPHORACEAE

12. *Boletopsis leucomelaena* Pers.

Syn: *B. subsquamosa* (Fr.) Kotl. & Pouz.

Hacer Forest, Yelbeleni district, in cedar forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 232.

13. *Sarcodon glaucopus* Maas Geest. & Nannf.

Syn: *S. amarescens* (Quél.) Quél.

Mansurlu Village, Aşağı Burhaniye district, in black pine forest, 1650 m, 29.10.2000, Kaşık, Türkoğlu 205.

GANODERMATACEAE

14. *Ganoderma adspersum* (Schulz.) Donk

Ulupınar Village, on *Prunus* sp., 1600 m, 19.05.2000, Türkoğlu, Doğan 113.

HYMENOGASTRACEAE

15. *Inonotus rhodes* (Pers.) Karst.

Syn: *Polyporus vulpinus* Fr.

Mansurlu Village, on willow trees, 1500 m, 29.10.2000, Kaşık, Türkoğlu 210.

16. *Phellinus igniarius* (L.: Fr.) Quél.

Syn: *Polyporus igniarius* L.: Fr.; *Trametes igniarius* Karst.; *Fomes igniarius* (L.: Fr.) Fr.; *F. trivialis* Bres.

Dönbere district, on willow, poplar and cedar trees, 1300 m, 01.05.2000, Kaşık, Öztürk, Türkoğlu 12, Ulupınar Village, on willow trees, 1600 m, 19.05.2000, Türkoğlu, Doğan 94.

POLYPORACEAE

17. *Bjerkandera adusta* (Fr.) Karst.

Syn: *Gloeoporus adustus* (Willd.: Fr.) Pilát

Dönbere district, on willow trees, 1300 m, 01.05.2000, Kaşık, Öztürk, Türkoğlu 15, Ulupınar

Village, on willow trees, 1600 m, 19.05.2000, Türkoğlu, Doğan 114.

18. *Fomitopsis pinicola* (Fr.) Karst.

Syn: *Polyporus marginatus* Pers.: Fr.; *Ungulina marginata* (Pers.: Fr.) Fr.

Hacer Forest, Katran Korusu district, on pine trunk, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 268.

19. *Polyporus brumalis* Fr.

Hacer Forest, Bozarmut district, on cedar trees, 1750 m, 19.05.2000, Türkoğlu, Doğan 112.

20. *Polyporus squamosus* Fr.

Dönbere district, on willow and apple trees, 1300 m, 01.05.2000, Kaşık, Öztürk, Türkoğlu 47.

21. *Trametes gibbosa* (Pers.: Fr.) Fr.

Ulupınar Village, on pine trunks, 1600 m, 29.04.2001, Türkoğlu 628.

22. *Trichaptum abietinum* (Fr.) Ryv.

Syn: *Hirschioporus abietinus* (Dicks.: Fr.) Donk

Ulupınar Village, on fir trunks, 1600 m, 29.10.2000, Kaşık, Türkoğlu 212.

GEASTRACEAE

23. *Geastrum sessile* (Sow.) Pouz.

Syn: *Geastrum fimbriatum* Fr.

Hacer Forest, İçeri Çukur district, in mixed pine forest, 1700 m, 19.05.2000, Türkoğlu, Doğan 106, Mansurlu Village, in black pine forest, 1600 m, 29.10.2000, Kaşık, Türkoğlu 203, Hacer Forest, İçeri Çukur district, in black pine and cedar forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 248.

LYCOPERDACEAE

24. *Langermannia gigantea* (Batsch: Pers.) Rost.

Syn: *Calvatia maxima* Morg.

Mansurlu Village, Yukarı Burhaniye district, on grass in pine forest, 1500 m, 27.05.2000, Türkoğlu 129, Mansurlu Village, Aşağı Burhaniye district, on grass, 1650 m, 30.04.2001, Türkoğlu 649.

25. *Lycoperdon molle* Pers.: Pers.

Hacer Forest, Yelbeleni district, on grass in pine forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 271.

26. *Lycoperdon perlatum* Pers.

Syn: *L. gemmatum* Batsch: Schum.

Mansurlu Village, Yukarı Burhaniye district, on grass in pine forest, 1500 m, 29.11.2000, Türkoğlu 211.

RHIZOPOGONACEAE

27. *Rhizopogon luteolus* Fr.

Hacer Forest, Soğuk Pınar district, in mixed black pine and cedar forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 272, Hacer Forest, Tuzak Plateau, in mixed black pine and cedar forest, 1650 m, 29.04.2001, Türkoğlu 621.

BOLETACEAE

28. *Boletus erythropus* (Fr.: Fr.) Pers.

Syn: *B. luridiformis* Rost.; *B. miniatoporus* Seer.

Mansurlu Village, Aşağı Burhaniye district, in black pine and oak forest, 1650 m, 30.04.2001, Türkoğlu 668, Mansurlu Village, Yukarı Burhaniye district, in black pine forest, 1500 m, 30.04.2001, Türkoğlu 682.

29. *Suillus grevillei* (Klot.: Fr.) Sing.

Syn: *S. flavus* (With.) Sing.; *Boletus elegans* Schum.: Fr.

Mansurlu Village, Aşağı Burhaniye district, in cedar and black pine forest, 1650 m, 27.05.2000, Türkoğlu 130, Hacer Forest, Katran Korusu district, in cedar forest, 1750 m, 29.04.2001, Türkoğlu 613, Hacer Forest, Çatalçam Plateau, in black pine forest, 1600 m, 29.04.2001, Türkoğlu 639, 641, Mansurlu Village, Yukarı Burhaniye district, in black pine forest, 1500 m, 30.04.2001, Türkoğlu 667.

30. *Suillus luteus* (L.) S.F.Gray

Hacer Forest, Soğuk Pınar district, in black pine forest, 1700 m, 19.05.2000, Türkoğlu, Doğan 107, Mansurlu Village, Yukarı Burhaniye district, in black pine forest, 1500 m, 29.10.2000, Kaşık, Türkoğlu 215, Bozarmut district, in black pine forest, 1750 m, 29.04.2001, Türkoğlu 627, Mansurlu Village, district, in black pine forest, 1600 m, 30.04.2001, Türkoğlu 660.

PAXILLACEAE

Omphalotus olearius (DC.: Fr.) Sing.

Mansurlu Village, Yukarı Burhaniye district, on black pine trunk, 1500 m, 29.10.2000, Kaşık, Türkoğlu 223.

GOMPHIDIACEAE

32. *Chroogomphus rutilus* (Schff.: Fr.) O.K.Mill.

Syn: *Gomphidius rutilus* (Schff.: Fr.) Lund. & Nanff.

Hacer Forest, Tuzak Plateau, in black pine forest, 1650 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 233, 236, 266.

PLEUROTACEAE

33. *Pleurotus eryngii* (DC.: Fr.) Quéf.

Syn: *P. fuscus* (Batt.) Bres.

Dönbere district, 1500 m, under *Ferula* sp., 29.04.2000, Türkoğlu 2, 3, Hacer Forest, Yelibelen district, under *Ferula* sp., 1750 m, 18.05.2000, Türkoğlu 97, 99, 102.

34. *Pleurotus ostreatus* (Jacq.: Fr.) Kumm.

Syn: *Pleurotus columbinus* Quéf.

Yahyalı Ulupınar Village, on willow trees, 1600 m, 18.05.2000, Türkoğlu 95, 109, Mansurlu Village, Yukarı Burhaniye district, on poplar trees, 1550 m, 29.10.2000, Kaşık, Türkoğlu 227.

35. *Lentinus lepideus* Fr.

Syn: *Panus lepideus* (Fr.: Fr.) Corn.

Hacer Forest, Yelibelen district, on fir trunk, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 253.

HYGROPHORACEAE

36. *Hygrocybe nigrescens* (Quéf.) Kühn.

Mansurlu Village, Yukarı Burhaniye district, on grass in mixed black pine and cedar forest, 1500 m, 29.10.2000, Kaşık, Türkoğlu 208.

37. *Hygrophorus agathosmus* Fr.: Fr.

Hacer Forest, Bozarmut district, in mixed black pine and cedar forest, 1750 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 288.

38. *Hygrophorus chrysodon* (Batsch: Fr.) Fr.

Syn: *Limacium chrysodon* (Batsch: Fr.) Kumm.

Hacer Forest, Soğuk Pınar district, in cedar forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 259.

TRICHOLOMATACEAE

39. *Omphalina oniscus* (Fr.: Fr.) Quéf.

Çatalçam Plateau, on grass near the stream, 1600 m, 29.04.2001, Türkoğlu 638.

40. *Clitocybe candicans* (Pers.: Fr.) Kumm.
Hacer Forest, Katran Korusu district, on grass in mixed black pine and cedar forest,
1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 235.
41. *Clitocybe dealbata* (Sow.: Fr.) Kumm.
Hacer Forest, Soğuk Pınar district, on grass in mixed black pine and cedar forest and stream, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 284.
42. *Clitocybe odora* (Bull.: Fr.) Kumm.
Hacer Forest, Tuzak Plateau, in cedar forest, 1650 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 263.
43. *Clitocybe phyllophila* (Fr.) Kumm.
Syn: *C. cerussata* (Fr.) Kumm.; *C. pithyophila* (Fr.) Gill.
Hacer Forest, Katran Korusu district, in cedar forest, 1700 m, 29.04.2001, Türkoğlu 610.
44. *Lepista nuda* (Bull.: Fr.) Cke.
Syn: *Tricholoma nudum* (Bull.: Fr.) Kumm.; *Rhodopaxillus nudus* (Bull.: Fr.) Mre.
Hacer Forest, Katran Korusu district, in mixed black pine and cedar forest, 1750 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 280, Taşoluk district, in mixed black pine and cedar forest, 1600 m, 29.04.2001, Türkoğlu 636, Mansurlu Village, Aşağı Burhaniye district, in mixed black pine and cedar forest, 1650 m, 30.04.2001, Türkoğlu 676, 681
45. *Tricholoma imbricatum* (Fr.: Fr.) Kumm.
Mansurlu Village, Aşağı Burhaniye district, in mixed black pine and cedar forest, 1650 m, 27.05.2000, Türkoğlu 132, Hacer Forest, Soğuk Pınar district, in mixed black pine and cedar forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 234, Mansurlu Village, Yukarı Burhaniye district, in mixed black pine and cedar forest, 1500 m, Türkoğlu 672.
46. *Tricholoma terreum* (Schff.: Fr.) Kumm.
Mansurlu Village, Yukarı Burhaniye district, in black pine forest, 1550 m, 27.05.2000, Türkoğlu 131, Hacer Forest, Yelbeleni district, in black pine forest, 1650 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 276, Hacer Forest, Soğuk Pınar district, in black pine forest, 1700 m, 29.04.2001, Türkoğlu 625.
47. *Tricholoma virgatum* (Fr.: Fr.) Kumm.
Mansurlu Village, Aşağı Burhaniye district, in cedar forest, 1650 m, 30.04.2001, Türkoğlu 642, 583.
48. *Lyophyllum connatum* (Schum.: Fr.) Sing.
Mansurlu Village, Yukarı Burhaniye district, in black pine forest, 1500 m, 30.04.2001, Türkoğlu 648.
49. *Lyophyllum transforme* (Britz.) Sing.
Syn. *Tricholoma trigonosporum* (Bres.) Rick.
Mansurlu Village, Yukarı Burhaniye district, in mixed black pine and cedar forest, 1500 m, 29.10.2000, Kaşık, Türkoğlu 221.
50. *Melanoleuca cognata* (Fr.) Konr. & Maubl. var. *cognata* Kühn.
Syn: *Tricholoma cognatum* (Fr.) Gill.
Hacer Forest, Katran Korusu district, in black pine forest, 1750 m, 29.04.2001, Türkoğlu 631.
51. *Melanoleuca cognata* (Fr.) Konr. & Maubl. var. *typica* Konr. & Maubl.
Syn: *M. arcuata* (Bull.: Fr.) Quél.
Mansurlu Village, Yukarı Burhaniye district, on grass in mixed black pine and cedar forest, 1550 m, 30.04.2001, Türkoğlu 671.
52. *Melanoleuca excissa* (Fr.) Sing.
Syn: *M. cinerascens* Reid
Hacer Forest, Yelbelen district, in mixed black pine and cedar forest, 1700 m, 13.05.2000, Türkoğlu 93.
53. *Melanoleuca graminicola* (Vel.) Kühn. & Mre.
Hacer Forest, Bozarmut district, on grass in black pine forest, 1750 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 239, 29.04.2001, Türkoğlu 626, Mansurlu Village, Yukarı Burhaniye district, on grass in black pine forest, 30.04.2001, Türkoğlu 652.
54. *Melanoleuca stridula* (Fr.) Sing.
Ulupınar Village, in mixed black pine and cedar forest, 1600 m, 19.05.2000, Türkoğlu, Doğan 120, Hacer Forest, Tuzak Plateau, in mixed black pine and cedar forest, 1650 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 257, Taşoluk district, in mixed black pine and cedar forest, 1600 m, 29.04.2001, Türkoğlu 634, Mansurlu Village, Yukarı Burhaniye district, in mixed black pine and cedar forest, 1500 m, 30.04.2001, Türkoğlu 646.

55. *Melanoleuca substrictipes* Kühn.

Mansurlu Village, on grass in black pine forest, 1550 m, 27.05.2000, Türkoğlu 135, Çatalçam Plateau, on grass, 1600 m, 29.04.2001, Türkoğlu 640, Mansurlu Village, Aşağı Burhaniye district, on grass, 1650 m, 30.04.2001, Türkoğlu 651.

56. *Collybia dryophila* (Bull.: Fr.) Kumm.

Mansurlu Village, Yukarı Burhaniye district, in black pine forest, 1500 m, 27.05.2000, Türkoğlu 126.

57. *Oudemansiella melanotricha* (Dörf.) Mos.

Syn: *Xerula melanotricha* Dörf.; *Collybia longipes* (Bull.) Quél.

Mansurlu Village, under fir trees, 1600 m, 29.10.2000, Kaşık, Türkoğlu 224, Hacer Forest, Yelbeleni district, under fir trees, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 270.

58. *Mycena polygramma* (Bull.: Fr.) S.F.Gray

Mansurlu Village, Aşağı Burhaniye district, 1650 m, 29.10.2000, Kaşık, Türkoğlu 217.

59. *Xeromphalina campanella* (Batsch: Fr.) Mre.

Syn: *Omphalina campanella* Fr.

Hacer Forest, ?nlik district, on cedar trunk, 1700 m, 29.04.2001, Türkoğlu 618, Mansurlu Village, Yukarı Burhaniye district, on cedar trunk, 1550 m, 30.04.2001, Türkoğlu 657.

60. *Cystoderma granulorum* (Batsch: Fr.) Fay.

Hacer Forest, ?nlik district, in black pine forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 243.

61. *Panellus stypticus* (Bull.: Fr.) Karst.

Ulupınar Village, on fir trunk, 1600 m, 19.05.2000, Türkoğlu, Doğan 115.

ENTOLOMATACEAE

62. *Entoloma sinuatum* (Pers.: Fr.) Kumm.

Syn: *E. lividum* (Bull.) Quél.

Mansurlu Village, under poplar and willow trees near the stream in black pine forest, 1600 m, 27.05.2000, Türkoğlu 133.

AMANITACEAE

63. *Amanita vaginata* (Bull.: Fr.) Vitt.

Mansurlu Village, Aşağı Burhaniye district, in black pine forest, 1650 m, 27.05.2000, Türkoğlu 125, 136,

Hacer Forest, Katran Korusu district, in black pine forest, 1750 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 261.

LEPIOTACEAE

64. *Lepiota clypeolaria* (Bull.: Fr.) Kumm.

Syn: *L. colubrina* (Pers.) Gray

Dönbere district, in black pine forest, 1300 m, 29.04.2000, Türkoğlu 5, Hacer Forest, Bozarmut district, in black pine forest, 1750 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 279.

65. *Macrolepiota heimii* Locq.: Bon

Mansurlu Village, Yukarı Burhaniye district, in black pine, cedar and fir forest, 1550, 29.10.2000, Kaşık, Türkoğlu 206, Hacer Forest, Yelbeleni district, in cedar forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 278.

66. *Macrolepiota procera* (Scop: Fr.) Sing.

Hacer Forest, Soğuk Pınar district, in black pine forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 243, 262.

AGARICACEAE

67. *Agaricus campestris* L.: Fr.

Mansurlu Village, Yukarı Burhaniye district, on grass, manure and dung, 1550 m, 28.05.2000, Türkoğlu 137, Ulupınar Village, on grass, 1600 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 254, 275, Mansurlu Village, Aşağı Burhaniye district, on manure, 1650, 30.04.2001, Türkoğlu 654.

68. *Agaricus essettei* Bon

Syn: *A. abruptibulbus* Peck.; *Psalliota silvicola* Lge.

Burhaniye Village, 1550 m, on grass, 27.05.2000, Türkoğlu 134, Erciyes Dağı, on grass, 2300 m, 10.06.2000, Türkoğlu 181-198, Hacer Forest, Soğuk Pınar district, on grass, 1700 m, 29.04.2001, Türkoğlu 617.

69. *Agaricus romagnesii* Wass.

Syn: *A. radicans* (Vitt.) Romagn.; *A. bresadolianus* Bohus

Ağcaşar Dam, on grass, 1200 m, 01.05.2000, Kaşık, Öztürk, Türkoğlu 55, 57, Ulupınar Village, near the stream, 1600 m, 19.05.2000, Türkoğlu, Doğan 121, Mansurlu Village, Darboğaz district, on lawn, 1600 m,

28.05.2000, Türkoğlu 139, Hacer Forest, Yelbeleni district, on grass, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 277.

70. *Agaricus xanthodermus* Gen.

Near the Ağcaşar Dam, on grass, 1200 m, 01.05.2000, Kaşık, Öztürk, Türkoğlu 56.

COPRINACEAE

71. *Coprinus comatus* (Muell.: Fr.) Pers.

Dönbere district, path side, 1300 m, 29.04.2001, Türkoğlu 8, Ağcaşar, at the Dam side, 1200 m, 01.05.2000, Kaşık, Öztürk, Türkoğlu 51, Mansurlu Village, Yukarı Burhaniye district, path side, 1550 m, 30.04.2001, Türkoğlu 664.

72. *Coprinus micaceus* (Bull.: Fr.) Fr.

Dönbere district, on willow and poplar trunks near the stream, 1300 m, 29.04.2000, Türkoğlu 6, 11, Ulupınar Village, on poplar trees, 1600 m, 29.04.2001, Türkoğlu 612.

73. *Panaeolus fimicola* (Fr.) Gill.

Syn: *P. dunensis* Bon & Courtec.

Mansurlu Village, Yukarı Burhaniye district, on grass, 1500 m, 30.04.2001, Türkoğlu 650.

74. *Panaeolus olivaceus* Møll.

Mansurlu Village, Aşağı Burhaniye district, on dung, 1650 m, 30.04.2001, Türkoğlu, 653, Mansurlu Village, Yukarı Burhaniye district, on dung, 1500 m, 30.04.2001, Türkoğlu 666.

75. *Panaeolus papilionaceus* (Bull.: Fr.) Quéf.

Syn: *P. campanulatus* (Bull.: Fr.) Quéf.; *P. retirugis* (Fr.) Quéf.; *P. sphinctrinus* (Fr.) Quéf.

Ulupınar Village, on manure, 1600 m, 19.05.2000, Türkoğlu 119,

76. *Psathyrella candolleana* (Fr.: Fr.) Mre

Syn: *P. appendiculata* (Bull.) Mre.; *Hypholoma egenulum* (Berk. & Br.) Sacc.

Ağcaşar, at the dam side, 1200 m, 01.05.2000, Kaşık, Öztürk, Türkoğlu 46, 54, Hacer Forest, Soğuk Pınar district, at the stream side, 1700 m, 19.05.2000, Türkoğlu, Doğan 104.

BOLBITIACEAE

77. *Conocybe aporos* Kits van Wav.

Syn: *Pholiotina aporos* (Kits van Wav.) Clç.

Hacer Forest, Tuzak Plateau, in black pine forest, 1650 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 250.

78. *Agrocybe cylindracea* (DC: Fr.) Mre.

Syn: *A. aegerita* (Brig.) Sing.

Dönbere district, on poplar trees, 1300 m, 01.05.2000, Kaşık, Öztürk, Türkoğlu 9, Ağcaşar, on poplar trees at the dam side, 1200 m, 15.05.2000, Türkoğlu 53.

79. *Agrocybe dura* (Bolt.) Sing.

Syn: *A. molesta* (Lasch) Sing.

Ağcaşar, on grass at the dam side, 1200 m, 01.05.2000, Kaşık, Öztürk, Türkoğlu 48, 59, Mansurlu Village, Yukarı Burhaniye district, on grass, 1500 m, 28.05.2000, Türkoğlu 128, 141.

80. *Agrocybe paludosa* (Lge.) Kühn. & Romagn.

Syn: *Pholiota praecox* var. *paludosa* Lge.

Dönbere district, near the stream in black pine forest, 1300 m, 29.04.2000, Türkoğlu 4, Mansurlu Village, Yukarı Burhaniye district, near the stream in black pine forest, 1500 m, 30.04.2000, Türkoğlu 663.

81. *Agrocybe semiorbicularius* (Bull.: St.Am.) Fay.

Syn: *A. arenaria* (Peck.) Sing.; *A. arenicola* (Berk.) Sing.; *A. pediades* (Fr.) Fay.

Mansurlu Village, Darboğaz district, on grass in black pine forest, 1650 m, 20.05.2000, Türkoğlu 138.

STROPHARIACEAE

82. *Stropharia coronilla* (Bull.: Fr.) Quéf.

Mansurlu Village, Yukarı Burhaniye district, on grass and lawn, 1500 m, 30.04.2001, Türkoğlu 662.

83. *Tubaria furfuracea* (Pers.: Fr.) Gill.

Syn: *T. pellucida* Romagn.

Hacer Forest, Katran Korusu district, in cedar forest, 1750 m, 19.05.2000, Türkoğlu, Doğan 108.

CORTINARIACEAE

84. *Inocybe geophylla* (Sow.: Fr.) Kumm.

Hacer Forest, Katran Korusu district, on grass, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 282.

85. *Inocybe lanuginella* (Schroet.) Konr. & Maubl.

Syn: *I. decipientoides* Peck

Hacer Forest, Yelbeleni district, near the stream in black pine forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 246, Hacer Forest, Bozarmut district, near the stream in black pine forest, 1750 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 291, Mansurlu Village, Yukarı Burhaniye district, near the stream in black pine forest, 1550 m, 30.04.2001, Türkoğlu 644.

86. *Inocybe obscuroides* Orton

Hacer Forest, Bozarmut district, in black pine and cedar forest, 1750 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 290, 295, Ulupınar Village, 1600 m, in black pine and cedar forest, 29.04.2001, Türkoğlu 622, Mansurlu Village, Aşağı Burhaniye district, in black pine and cedar forest, 1650 m, 30.04.2001, Türkoğlu 670, 673, 678, Mansurlu Village, Yukarı Burhaniye district, in black pine and cedar forest, 1500 m, 30.04.2001, Türkoğlu 679.

87. *Inocybe rimosa* (Bull.: Fr.) P.Kumm.

Syn: *I. fastigiata* (Schff.: Fr.) Quéf.

Mansurlu Village, Yukarı Burhaniye district, in cedar and black pine forest, 1500 m, 30.04.2001, Türkoğlu 645, 676.

88. *Hebeloma eburneum* Mal.

Mansurlu Village, Aşağı Burhaniye district, in black pine forest, 1650 m, 29.10.2000, Kaşık, Türkoğlu 204, 226, 269, Hacer Forest, Yelbeleni district, in black pine forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 237, 269, 287, 294, Hacer Forest, Tuzak Plateau, in black pine and cedar forest, 1650 m, 29.04.2001, Türkoğlu 620, Mansurlu Village, Yukarı Burhaniye district, in black pine forest, 1500 m, 30.04.2001, Türkoğlu 665, 667.

89. *Hebeloma mesophaeum* (Pers.: Fr.) Quéf.

Hacer Forest, Yelbeleni district, in black pine forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 273, Mansurlu Village, in black pine forest, 1550 m, 30.04.2001, Türkoğlu 643.

90. *Gymnopilus penetrans* (Fr.: Fr.) Murr.

Ulupınar Village, on black pine trunks, 1600 m, 19.05.2000, Türkoğlu, Doğan 116, 118, Hacer Forest, Yelbeleni district, on black pine trunks, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 262.

91. *Cortinarius saginus* (Fr.: Fr.) Fr.

Syn: *C. subvalidus* Henry; *C. subtriumphans* Mos; *C. triumphans* Rick

Mansurlu Village, in cedar forest, 1550 m, 29.10.2000, Kaşık, Türkoğlu 225.

RUSSULACEAE

92. *Russula delica* Fr.

Mansurlu Village, Yukarı Burhaniye district, in black pine and oak forest, 1550 m, 29.10.2000, Kaşık, Türkoğlu 207, 222, Hacer Forest, Tuzak Plateau, 1650 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 238.

93. *Russula grisea* (Pers.: Secr.) Fr.

Mansurlu Village, Darboğaz district, in black pine forest, 1550 m, 28.05.2000, Türkoğlu 142, Hacer Forest, Bozarmut district, in black pine forest, 1750 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 265.

94. *Lactarius deliciosus* Fr.

Mansurlu Village, Aşağı Burhaniye district, in black pine forest, 1650 m, 29.10.2000, Kaşık, Türkoğlu 219, Hacer Forest, Katran Korusu district, in black pine forest, 1700 m, 04.11.2000, Kaşık, Öztürk, Türkoğlu 241, 247.

Discussion and Conclusion

In this study, 94 macrofungi taxa belonging to 28 families collected in Yahyalı province were identified. Nine of these belong to *ascomycotina* and 85 to *basidiomycotina*. The distribution of the 94 species into families is as follows: *Tricholomataceae* 22, *Cortinariaceae* 8, *Coprinaceae* 6, *Polyporaceae* 6, *Bolbitiaceae* 5, *Agaricaceae* 5, *Morchellaceae* 4, *Lepiotaceae* 3, *Boletaceae* 3, *Lycoperdaceae* 3, *Russulaceae* 3, *Humariaceae* 3, *Pleurotaceae* 3, *Hygrophoraceae* 3, *Thelephoraceae* 2, *Hymenochaetaceae* 2, *Strophariaceae* 2, *Helvellaceae* 1, *Pezizaceae* 1, *Ramariaceae* 1, *Clavariaceae* 1, *Ganodermataceae* 1, *Geastraceae* 1, *Rhizopogonaceae* 1, *Paxillaceae* 1 and *Gomphidiaceae* 1. Twenty-five percent of the macrofungi we found belong to *Tricholomataceae*. Pine, cedar and mixed forests and meadows are very favourable conditions for members of *Tricholomataceae*.

Tricholomataceae, *Cortinariaceae* and *Coprinaceae* are similar to those of earlier studies carried out near our research area (Kaşık & Öztürk, 1995; Işiloğlu & Öder, 1995; Öztürk & Kaşık, 1996; Kaşık et al., 2001) (Table 1). This may be because of similarities in vegetation, climate and plant flora.

Nine species of edible macrofungi are known and *Morchella conica*, *M. elata*, *M. esculanta*, *Pleurotus eryngii*, *Amanita vaginata*, *Agaricus romagnesii*, *A. campestris*, *A. essettei* and *Lactarius deliciosus* are eaten by the local people.

The poisonous species are 12: *Omphalotus olearius*, *Hygrocybe nigrescens*, *Clitocybe candicans*, *C. dealbata*, *C. phyllophila*, *Lyophyllum connatum*, *Entoloma sinuatum*, *Agaricus xanthodermus*, *Panaeolus olivaceus*, *P. papilionaceus*, *I. rimosus* and *I. geophylla*. There have been no reports of deaths from mushroom poisoning in this area, because local people collect only well-known mushrooms.

With this study on the macrofungi flora of Yahyalı, we have added macrofungi species to the Turkish macrofungi flora.

Table 1. Distribution of families.

FAMILIES	Kaşık & Öztürk 1995	Işiloğlu & Öder 1995	Öztürk & Kaşık 1996	Kaşık et al. 200	Yahyalı Province
<i>Morchellaceae</i>		3	1	2	4
<i>Helvellaceae</i>		3	2	1	1
<i>Pezizaceae</i>		1		2	1
<i>Humariaceae</i>					3
<i>Clavariaceae</i>		1			1
<i>Ramariaceae</i>					1
<i>Thelephoraceae</i>		2			2
<i>Ganodermataceae</i>		1		1	1
<i>Hymenochaetaceae</i>				3	2
<i>Polyporaceae</i>	3	5	3	4	6
<i>Gaeastraceae</i>	1				1
<i>Lycoperdaceae</i>	2	3	2	1	3
<i>Rhizopogonaceae</i>		2			1
<i>Boletaceae</i>		11	1	1	3
<i>Paxillaceae</i>		3		1	1
<i>Gomphidiaceae</i>		1			1
<i>Pleurotaceae</i>		3		2	3
<i>Hygrophoraceae</i>		4			3
<i>Tricholomataceae</i>	1	25	7	4	22
<i>Entolomataceae</i>		1		1	1
<i>Amanitaceae</i>		8			1
<i>Lepiotaceae</i>		7		1	3
<i>Agaricaceae</i>	4	4	2	6	5
<i>Coprinaceae</i>	4	9		5	6
<i>Bolbitiaceae</i>	1	3		2	5
<i>Strophariaceae</i>				3	2
<i>Cortinariaceae</i>		4			8
<i>Russulaceae</i>		16			3
Total	16	125	18	40	94

References

- Akman Y (1990). *İklim ve Biyoiklim*. Ankara: Palme Yay.
- Breitenbach J & Kränzlin F (1984-1995). *Fungi of Switzerland* (Volume 1-4) Luzern: Verlag Mykologia.
- Bresinsky A & Besl H (1990). *A Colour Atlas of Poisonous Fungi*. London: Wolf Publishing.
- Dähncke RM (1993). *1200 Pilze*. Stuttgart: AT Verlag Aarau.
- Ellis MB & Ellis JP (1990). *Fungi without Gills (Hymenomyces and Gasteromyces)*. London: Chapman and Hill.
- Gerhardt E (1997). *Der große BLV Pilzfürer für Unterwegs*. München: Verlagsgesellschaft mbH.
- Grunert H & Grunert R (1984). *Pilze*. München: Mosaik Verlag, Gmbh.
- Grunert H & Grunert R (1991). *Field Guide to Mushrooms of Britain and Europe*. München: The Crowood Press Ltd.
- Hennig B & Kreisel H (1987). *Taschenbuch für Pilzfreunde*. München: Gustav Fischer Verlag Jena.
- Işiloğlu M & Öder N (1995). Contributions to the Macrofungi of Mediterranean Turkey. *Tr. J. of Botany*. 19: 603-609.
- Kaşık G & Öztürk C (1995). Aksaray İlinde Tesbit Edilen Yenen Zehirli ve Yenmez Durumda Olan Bazı Makromantarlar. *Tr. J. of Botany*. 19: 401-403.
- Kaşık G, Öztürk C & Toprak E (2001). Macrofungi of Niğde province (Turkey). *Ot Sistematiik Botanik Dergisi*. 8, 2: 137-142.
- Moser M (1983). *Keys to Agarics and Boleti*. Stuttgart: Gustav Fischer Verlag.
- Öztürk C & Kaşık G (1996). Ürgüpte Yetişen Bazı Makrofunguslar. *S.Ü. Fen-Edb. Fak. Fen Dergisi*. 13: 50-55.
- Pace G (1998). *Mushrooms of the World*. Ontario: Firefly Books Ltd.
- Pacioni G (1993). *Mushrooms and Toadstools*: London, MacDonald and Co Ltd.
- Phillips R (1981). *Mushrooms and Other Fungi of Great Britain and Europe*. London: Pan Books Ltd.