

Macrofungal Diversity of Belgrad Forest (İstanbul)

İlgaz AKATA

Ankara University, Faculty of Science, Department of Biology, 06100, Tandoğan, Ankara
Turkey

fungus@hotmail.com.tr

Received Date: 24.11.2016

Accepted Date: 22.02. 2017

Abstract: The study is based on macrofungi collected from Belgrad Forest between 2013 and 2015. As a result of the field and laboratory studies, 237 species of macrofungi were identified. Including 43 previously recorded species, 280 species belonging to 2 division, 18 order, 71 families and 150 genus were listed. Among them, 23 species belong to *Ascomycota*, 257 to *Basidiomycota*.

Keywords: Macrofungi, biodiversity, Belgrad Forest, İstanbul, Turkey

Belgrad Ormanı (İstanbul)'nın Makrofungus Çeşitliliği

Özet: Bu çalışma 2013 ve 2015 yılları arasında Belgrad Ormanı'ndan toplanan makrofungus örneklerine dayanmaktadır. Arazi ve Laboratuvar çalışmaları sonucunda 237 makrofungus türü tespit edilmiştir. Önceden bildirilen 43 tür de dahil olmak üzere, 2 divisio, 18 ordo, 71 familya ve 150 cinse ait 280 tür listelenmiştir. Belirlenen türlerden 23'ü *Ascomycota*, 257'si *Basidiomycota* bölümüne aittir.

Anahtar Kelimeler: Makrofunguslar, biyoçeşitlilik, Belgrad Ormanı, İstanbul, Türkiye

Introduction

Belgrad Forest is located in İstanbul province at the eastern part of the Thracian Peninsula. It covers 5441.71 hectares and it is situated in the A2 grid square according to the system adopted by Davis (1965) (Figure 1). The region has characteristics of an Euro-Siberian as well as Mediterranean climate features (Akman, 1999). The average annual precipitation is 1093.4 mm and approximately 70 % of the total rain falls in winter and autumn. Summers are relatively dry and the minimal amount of rain falls (about 8%) in July and August. The average annual temperature is 12.8 °C and the minimum average temperature is 9 °C while the maximum temperature is 17.8 °C. The average elevation is around 140 m and the lowest part of the area is Kurudere Creek (40 m), the highest part is Kartal Hill (230 m)

(Çobanoğlu, 2007; Demir et al., 2007; Cakir et al., 2010).

The forest vegetation is dominated by broadleaved trees such as oak (*Quercus petraea*, *Q. frainetto* Ten, *Q. cerris* L., *Q. robur* L. and *Q. infectoria* Oliver), beech (*Fagus orientalis* Lipsky), hornbeam (*Carpinus betulus* L.), chesnut (*Castanea sativa* Mill.), alder (*Alnus glutinosa* (L.) Gaertn.), poplar (*Populus tremula* L.), lime tree (*Tilia tomentosa* Moench), maple (*Acer trautvetteri* Medv. and *A. campestre* L.), and elm (*Ulmus campestris* L.). Planted coniferous trees such as fir (*Abies nordmanniana* subsp. *equi-trojani* (Asch. & Sint. ex Boiss.) Coode & Cullen), spruce (*Picea abies* (L.) Karst.), black pine (*Pinus nigra* J.F. Arnold), scots pine (*Pinus sylvestris* L.) and pseudomacchie can also be seen (Yaltırık, 1966; Cebeci and Acer, 2007).



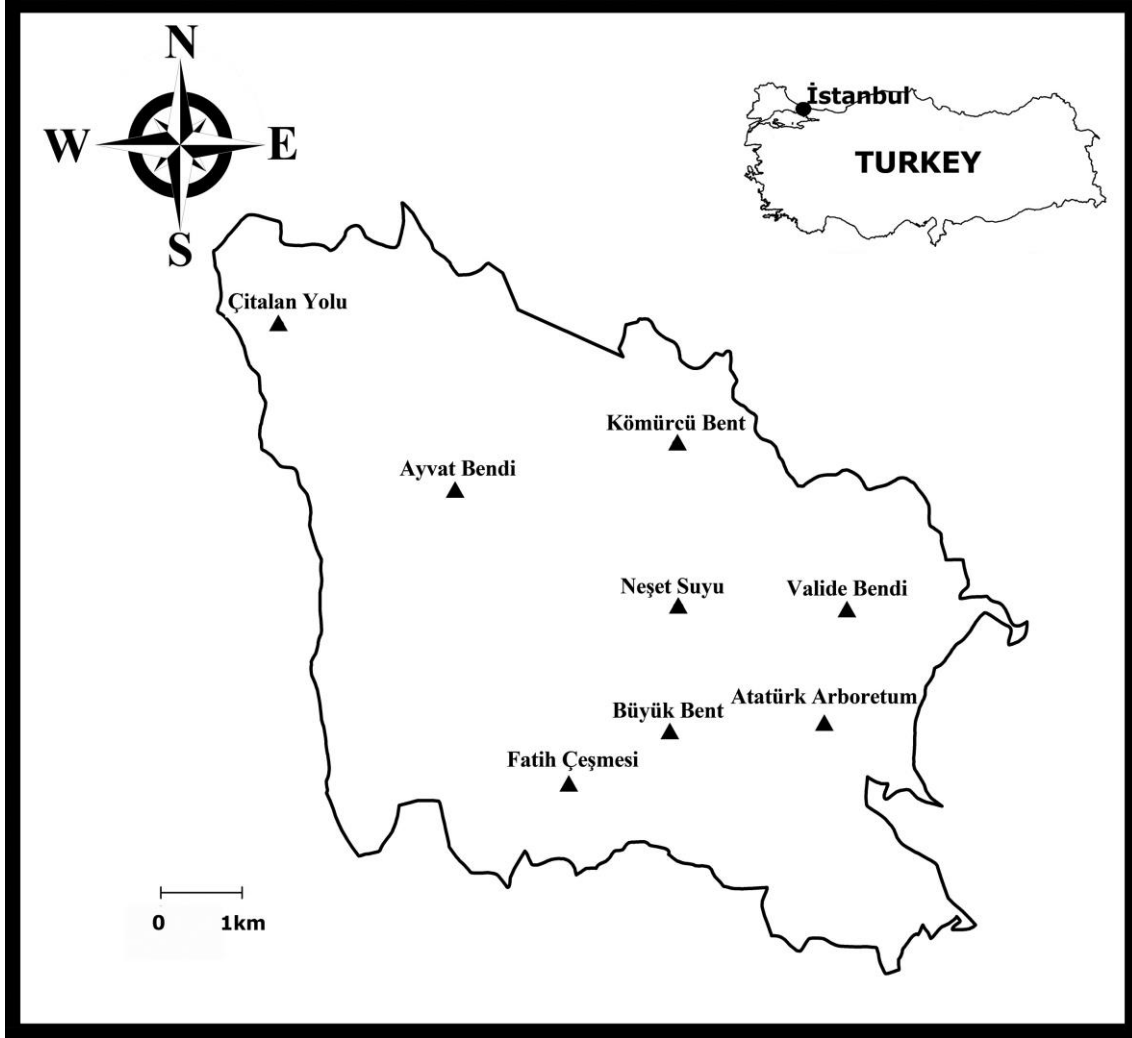


Figure1. Map of the study area

Attention to the investigations on mycobiota of Turkey has particularly increased over the last three decades and some researchs are still in progress (Solak et al., 2015; Sesli and Denchev, 2008; Akata and Doğan, 2015; Doğan and Akata, 2015; Doğan and Kurt, 2016; Akata et al., 2015a; 2016; Allı et al., 2016; Dülger and Akata, 2016). Some studies on macrofungal diversity around the region were conducted by Lohwag (1957, 1964), Selik (1965), Öner (1972), Solak et al. (2002, 2003), Stojchev et al. (1998) and Sümer (1976), some newly reported species were presented (Sümer, 1989; Akata and Kumbaşlı, 2014; Sesli et al., 2016; Akata, 2016; Akata and Gürkanlı, 2016). But there is not any detailed mycological study on Belgrad Forest.

The purpose of this study was to make contribution to the Turkish mycobiota.

Materials and Methods

Samples were collected from Belgrad Forest (İstanbul) between 2013 and 2015. During field studies, macroscopic and ecological characteristics of the samples were noted and they were photographed in their natural habitats. In the herbarium, macroscopic and microscopic investigations and micro-chemical reactions were carried out. Reagents such as melzer's reagent, 5 % KOH, H₂O, H₂SO₄, congo red and cotton blue etc. were used. Identification of the specimens was performed according to literature (Bas et al. 1988-1999, Breitenbach & Kranzlin 1984-2000, Calogne, 1998, Hansen & Knudsen 1992-2000, Heilmann-Clausen et al., 1998, Kranzlin, 2005). The identified samples were deposited at the Ankara University Herbarium (ANK).

Results

The systematics of the taxa are given in accordance with Cannon and Kirk (2007), Kirk et al. (2008), and the Index Fungorum (www.indexfungorum.org; accessed 15 February 2017). The taxa are listed in alphabetical order with locality, notes on habitat, geographical position, collection date, and accession numbers (Akata).

Ascomycota

Helotiales

Arachnopezizaceae

1. *Arachnopeziza aurata* Fuckel: Sümer (1989).

Bulgariaceae

2. *Bulgaria inquinans* (Pers.) Fr.: Büyük Bent, on fallen oak branch, N 41° 10' - E 28° 57', 60 m, 29.10.2014, Akata 6164; Lohwag (1964).

Chlorociboriaceae

3. *Chlorociboria aeruginosa* (Oeder) Seaver ex C.S. Ramamurthi, Korf & L.R. Batra: Ayvat Bendi, on rotten beech branch, N 41° 12' - E 28° 56', 100 m, 09.11.2014, Akata 6223.

Helotiaceae

4. *Bisporella citrina* (Batsch) Korf & S.E. Carp.: Neşet Suyu, on fallen beech branch, N 41° 11' - E 28° 58', 80 m, 06.11.2014, Akata 6202.

5. *Cenangium ferruginosum* Fr.: Lohwag (1964).

Leotiaceae

6. *Leotia lubrica* (Scop.) Pers.: Kömürcü Bent, on roadside, among mosses, N 41° 12' - E 28° 57', 100 m, 23.10.2014, Akata 6135.

Hypocreales

Nectriaceae

7. *Nectria cinnabarina* (Tode) Fr. : Lohwag (1964).

Pezizales

Helvellaceae

8. *Helvella crispa* (Scop.) Fr.: Neşet Suyu, in beech forest, N 41° 11' -E 28° 58', 85 m, 04.10.2014, Akata 6099.

9. *Helvella elastica* Bull.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 100 m, 23.10.2014, Akata 6133.

10. *Helvella lacunosa* Afzel.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 100 m, 22.10.2013, Akata 5863.

Pezizaceae

11. *Sarcosphaera coronaria* (Jacq.) J. Schröt. : Lohwag (1964).

Pyronemataceae

12. *Aleuria aurantia* (Pers.) Fuckel: Büyük Bent, near oak forest, in grass, N 41° 10' - E 28° 57', 110 m, 23.10.2013, Akata 5889.

13. *Cheilymenia granulata* (Bull.) J. Moravec: Fidanlık, on cow dung, N 41° 11' - .E 28° 57', 80 m, 20.10.2013, Akata 5812.

14. *Humaria hemisphaerica* (F.H. Wigg.) Fuckel: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 90 m, 06.11.2014, Akata 6219.

Sarcoscyphaceae

15. *Sarcoscypha coccinea* (Gray) Boud.: Neşet Suyu, on fallen beech branch, N 41° 11' - E 28° 58', 80 m, 06.11.2014, Akata 6195; Lohwag (1964).

Rhytismatales

Rhytismataceae

16. *Colpoma quercinum* (Pers.) Wallr.: Lohwag (1957; 1964).

Xylariales

Diatrypidae

17. *Diatrype stigma* (Hoffm.) Fr.: Lohwag (1964).

Xylariaceae

18. *Biscogniauxia nummularia* (Bull.) Kuntze: Lohwag (1964).

19. *Daldinia concentrica* (Bolton) Ces. & De Not.: Ayvat Bendi, on beech trunk, N 41° 12' - E 28° 56', 100 m, 09.11.2014, Akata, 6227.

20. *Hypoxylon fragiforme* (Pers.) J. Kickx f.: Neşet Suyu, on fallen beech branch, N 41° 11' - E 28° 58', 85 m, 15.11.2014, Akata 6255.

21. *Hypoxylon howeanum* Peck: Lohwag (1964).

22. *Xylaria hypoxylon* (L.) Grev.: Ayvat Bendi, on beech stump, N 41° 12' - E 28° 56', 100 m, 09.11.2014, Akata, 6220.

23. *Xylaria polymorpha* (Pers.) Grev.: Kömürcü Bent, on beech stump, N 41° 12' - E 28° 57', 100 m, 05.10.2014, Akata 6107.

Basidiomycota

Agaricales

Agaricaceae

24. *Agaricus arvensis* Schaeff.: Atatürk Arboretum, on meadow, N 41° 10' - E 28° 59', 215 m, 29.10.2014, Akata 6159.

25. **Agaricus sylvaticus** Schaeff.: Atatürk Arboretum, under pine, N 41° 10' - E 28° 59', 130 m, 27.09.2015, Akata 6276.
26. **Agaricus xanthodermus** Genev: Fidanlık, in meadow, N 41° 11' - E 28° 57', 80 m, 21.10.2013, Akata 5857.
27. **Bovista plumbea** Pers.: Fidanlık, in meadow, N 41° 11' - E 28° 57', 85 m, 21.10.2013, Akata 5843.
28. **Chlorophyllum rachodes** (Vittad.) Vellinga: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2015, Akata 6292.
29. **Coprinus comatus** (O. F. Müll.) Pers.: Fatih Çeşmesi, near oak forest, N 41° 10' - E 28° 56', 60 m, 03.11.2014, Akata 6181.
30. **Crucibulum laeve** (Huds.) Kambly: Büyük Bent, on oak stump, branch, N 41° 10' - E 28° 57', 65 m, 23.10.2013, Akata 5878.
31. **Cyathus olla** (Batsch) Pers.: Büyük Bent, near road, N 41° 10' - E 28° 57', 70 m, 24.10.2015, Akata 6334.
32. **Cyathus striatus** (Huds.) Willd.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 29.10.2014, Akata 6174.
33. **Cystoderma amianthinum** (Scop.) Fayod: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 90 m, 06.11.2014, Akata 6216.
34. **Cystoderma carcharias** (Pers.) Fayod: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2015, Akata 6286.
35. **Lepiota clypeolaria** (Bull.) P. Kumm.: Neşet Suyu, in beech forest, N 41° 11' - E 28° 58', 80 m, 22.10.2013, Akata 5866.
36. **Lepiota cristata** (Bolton) P. Kumm.: Büyük Bent, near oak forest, in grass, N 41° 10' - E 28° 57', 110 m, 23.10.2013, Akata 5888.
37. **Lepiota ignivolvata** Bousset & Joss. ex Joss.: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 105 m, 09.11.2014, Akata, 6228.
38. **Lycoperdon echinatum** Pers.: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 90 m, 09.11.2014, Akata, 6240.
39. **Lycoperdon molle** Pers.: Neşet Suyu, in beech forest, N 41° 11' - E 28° 58', 80 m, 06.11.2014, Akata 6194.
40. **Lycoperdon perlatum** Pers.: Atatürk Arboretum, under spruce, N 41° 10' - E 28° 59', 04.10.2014, Akata 6098; Öner (1972).
41. **Lycoperdon pyriforme** Schaeff.: Fidanlık, on fir stump, N 41° 11' - E 28° 57', 90 m, 06.11.2014, Akata 6210.
42. **Macrolepiota konradii** (Huijsman ex P.D. Orton) M.M. Moser: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 29.10.2014, Akata 6169.
43. **Macrolepiota mastoidea** (Fr.) Singer: Kömürcü Bent, in beech forest, N 41° 12' 34" E 28° 57' 60", 110m, 23.10.2015, Akata 6320.
44. **Macrolepiota procera** (Scop.) Singer: Ayvat Bendi, in beech forest, N 41° 12'. - E 28° 56', 95 m, 04.10.2014, Akata 6085; Selik (1965).
- Amanitaceae**
45. **Amanita caesarea** (Scop.) Pers.: Valide Bendi, in oak forest, N 41° 11' - E 28° 59', 150 m, 04.10.2014, Akata 6089; Selik (1965).
46. **Amanita ceciliae** (Berk. & Broome) Bas.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 04.10.2014, Akata 6058.
47. **Amanita citrina** Pers.: Fatih Çeşmesi, in oak forest, N 41° 10',- E 28° 56', 55 m, 23.10.2013, Akata 5912.
48. **Amanita gemmata** (Fr.) Bertill.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 29.10.2014, Akata 6166.
49. **Amanita fulva** Fr.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6317.
50. **Amanita muscaria** (L.) Lam.: Atatürk Arboretum, under pine, N 41° 10' - E 28° 59', 130 m, 27.09.2015, Akata 6274.
51. **Amanita ovoidea** (Bull.) Link: Valide Bendi, in oak forest, N 41° 11' - E 28° 59', 140 m, 22.10.2015, Akata 6302.
52. **Amanita pantherina** (DC.) Krombh.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 09.11.2014, Akata 6241.
53. **Amanita phalloides** (Vaill. ex Fr.) Link: Fatih Çeşmesi, in oak forest, N 41° 10' - E 28° 56', 60 m, 03.11.2014, Akata 6182.
54. **Amanita rubescens** Pers.: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 100 m, 04.10.2014, Akata 6090; Lohweg (1964).
55. **Amanita strobiliformis** (Paulet ex Vittad.) Bertill: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6315.

56. Amanita vaginata (Bull.) Lam.: Neşet Suyu, under hornbeam, N 41° 11' - E 28° 58', 95 m, 22.10.2013, Akata 5875; Lohwag (1957, 1964).

57. Amanita virosa Bertill.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6337; Lohwag (1957, 1964).

58. Aspidella solitaria (Bull.) E.-J. Gilbert: Atatürk Arboretum, on meadow, N 41° 10' - E 28° 59', 215 m, 29.10.2014, Akata 6175.

Bolbitiaceae

59. Conocybe apala (Fr.) Arnolds: Atatürk Arboretum, in meadow, N 41° 10' - E 28° 59', 200 m, 24.05.2015, Akata 6264.

Clavariaceae

60. Clavulinopsis corniculata (Schaeff.) Corner: Atatürk Arboretum, under pine, N 41° 10' - E 28° 59', 125 m, 27.09.2015, Akata 6281.

Cortinariaceae

61. Cortinarius humicola (Quél.) Maire: Sesli et al. (2015).

62. Cortinarius variicolor (Pers.) Fr.: Kömürcü Bent, in beech forest, N 41° 12' 34" E 28° 57' 60", 110m, 23.10.2015, Akata 6322.

Cyphellaceae

63. Chondrostereum purpureum (Pers.) Pouzar: Büyük Bent, on oak stump, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6331; Lohwag (1964).

Entolomataceae

64. Clitopilus prunulus (Scop.) P. Kumm.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 09.11.2014, Akata 6243.

65. Entoloma clypeatum (L.) P. Kumm.: Lohwag (1957, 1964).

66. Entoloma sinuatum (Bull.) P. Kumm.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6319; Lohwag (1957, 1964).

Fistulinaceae

67. Fistulina hepatica (Schaeff.) With.: Ayvat Bendi, on oak stump, N 41° 12' 38" - E 28° 56' 14", 120 m, 04.10.2014, Akata 6088.

Hydnangiaceae

68. Laccaria amethystina Cooke: Büyük Bent, in beech forest, N 41° 10' - E 28° 57', 60 m, 04.10.2014, Akata 6060.

69. Laccaria laccata (Scop.) Cooke: Neşet Suyu, in beech forest, N 41° 11' - E 28° 58', 80 m, 06.11.2014, Akata 6204; Lohwag (1964).

Hygrophoraceae

70. Cuphophyllus virgineus (Wulfen) Kovalenko: Fatih Çeşmesi, near oak forest, N 41° 10' - E 28° 56', 55m, 10.11.2015, Akata 6356.

71. Hygrocybe coccinea (Schaeff.) P. Kumm.: Büyük Bent, near oak forest, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6332.

72. Hygrophorus chrysodon (Batsch) Fr.: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 110 m, 12.11.2015, Akata, 6377.

73. Hygrophorus eburneus (Bull.) Fr.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6309.

74. Hygrophorus marzuolus (Fr.) Bres.: Atatürk Arboretum, under spruce, N 41° 10' - E 28° 59', 125 m, 20.04.2014, Akata 6015.

75. Hygrophorus poetarum R. Heim: Büyük Bent, on beech forest, N 41° 10' - E 28° 57', 60 m, 04.10.2014, Akata 6064.

76. Hygrophorus russula (Schaeff.) Kauffman: Fatih Çeşmesi, in oak forest, N 41° 10' - E 28° 56', 55 m, 23.10.2013, Akata 5908.

77. Gliophorus psittacinus (Schaeff.) Herink: Atatürk Arboretum, in meadow, N 41° 10' - E 28° 59', 215 m, 29.10.2014, Akata 6158.

Hymenogastraceae

78. Galerina marginata (Batsch) Kühner: Fidanlık, on fir stump, N 41° 11' - E 28° 57', 80 m, 29.09.2015, Akata 6293.

79. Gymnopilus junonius (Fr.) P.D. Orton: Neşet Suyu, on beech stump, N 41° 11' - E 28° 58', 95 m, 04.10.2014, Akata 6082.

80. Hebeloma sinapizans (Paulet) Gillet: Fatih Çeşmesi, under hornbeam, N 41° 10' - E 28° 56', 50 m, 10.11.2015, Akata 6358.

Inocybaceae

81. Crepidotus caspari Velen.: Fatih Çeşmesi, on fallen oak branch, N 41° 10' 13" E 28° 56' 46", 65 m, 23.10.2013, Akata 5906.

82. Crepidotus mollis (Schaeff.) Staude: Lohwag (1957, 1964).

83. *Inocybe asterospora* Quél.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 100 m, 22.10.2013, Akata 5862.

84. *Inocybe bongardii* (Weinm.) Quél.: Çiftalan Yolu, in beech forest, N 41° 13' - E 28° 55', 140 m, 11.11.2015, Akata, 6361.

85. *Inocybe cincinnata* (Fr.) Quél.: Büyük Bent, on oak stump, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6333.

86. *Inocybe geophylla* (Bull.) P. Kumm.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110 m, 23.10.2013, Akata 5900.

87. *Inocybe godeyi* Gillet: Akata (2015).

88. *Inocybe obsoleta* Romagn: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 100 m, 22.10.2013, Akata 5858.

89. *Inocybe rimosa* (Bull.) P. Kumm.: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 85 m, 21.10.2013, Akata 5838.

90. *Inocybe whitei* (Berk. & Broome) Sacc.: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2015, Akata 6289.

Lyophyllaceae

91. *Asterophora lycoperdoides* (Bull.) Ditmar: Büyük Bent, in oak forest, on *Russula nigricans*, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6340.

92. *Rugosomyces ionides* (Bull.) Bon: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6326.

Marasmiaceae

93. *Marasmius bulliardii* Quél.: Kömürcü Bent, on beech leaves, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6313.

94. *Marasmius oreades* (Bolton) Fr.: Atatürk Arboretum, in meadow, N 41° 10' - E 28° 59', 140 m, 27.09.2015, Akata 6277; Öner (1972).

95. *Megacollybia platyphylla* (Pers.) Kotl. & Pouzar: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 04.10.2014, Akata 6051.

Mycenaceae

96. *Hemimycena immaculata* (Peck) Watling: Öner (1972).

97. *Mycena crocata* (Schrad.) P. Kumm.: Neşet Suyu, in beech forest, N 41° 11' - E 28° 58', 80 m, 06.11.2014, Akata 6192.

98. *Mycena epipterygia* (Scop.) Gray: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2014, Akata 6290.

99. *Mycena pura* (Pers.) P. Kumm.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6321; Öner (1972).

100. *Mycena renati* Quél.: Kömürcü Bent, in beech forest, N 41° 12' E 28° 57', 100m, 02.09.2015, Akata 6270.

101. *Mycena rosea* Gramberg: Kömürcü Bent, in beech forest, N 41° 10' - E 28° 57', 60 m, 03.10.2014, Akata 6030.

102. *Mycena sanguinolenta* (Alb. & Schwein.) P. Kumm.: Atatürk Arboretum, under spruce, N 41° 10' - E 28° 59', 120 m, 24.10.2013, Akata 5953.

103. *Panellus mitis* (Pers.) Singer: Fidanlık, on fir stump, N 41° 11' - E 28° 57', 80 m, 29.09.2014, Akata 6285.

104. *Panellus stipticus* (Bull.) P. Karst.: Büyük Bent, on oak stump, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6328.

Omphalotaceae

105. *Gymnopus dryophilus* (Bull.) Murrill.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 100 m, 22.10.2013, Akata 5859.

106. *Marasmiellus candidus* (Fr.) Singer: Neşet Suyu, on beech branch, N 41° 11' -E 28° 58', 85 m, 04.10.2014, Akata 6099.

107. *Mycetinis alliaceus* (Jacq.) Earle ex A.W. Wilson & Desjardin: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6318.

108. *Rhodocollybia butyracea* (Bull.) Lennox: Fatih Çeşmesi, near oak forest, N 41° 10' - E 28° 56', 55m, 10.11.2015, Akata 6349.

Physalacriaceae

109. *Armillaria mellea* (Vahl) P. Kumm.: Fatih Çeşmesi, on oak stump, N 41° 10' - E 28° 56', 65 m, 23.10.2013, Akata 5909; Lohwag (1964).

110. *Armillaria tabescens* (Scop.) Emel: Fidanlık, on oak root N 41° 11' - E 28° 57', 80 m, 21.10.2013, Akata 5849; Lohwag (1957).

111. *Flammulina velutipes* (Curtis) Singer: Kömürcü Bent, on beech stump, N 41° 12'- E 28° 57', 100 m, 22.10.2013, Akata 5867.

112. *Hymenopellis radicata* (Relhan) R.H. Petersen: Neşet Suyu, in beech forest, N

41° 11' - E 28° 58', 80 m, 05.10.2014, Akata 6114; Lohwag (1957, 1964).

113. *Mucidula mucida* (Schrad.) Pat.: Büyük Bent, on beech stump, N 41° 10' - E 28° 57', 60 m, 04.10.2014, Akata 6053.

114. *Strobilurus esculentus* (Wulfen) Singer: Atatürk Arboretum, on spruce cone, N 41° 10' - E 28° 59', 120 m, 24.05.2015, Akata 6265.

Pleurotaceae

115. *Pleurotus dryinus* (Pers.) P. Kumm.: Neşet Suyu, on oak stump, N 41° 11' - E 28° 58', 80 m, 04.10.2014, Akata 6046.

116. *Pleurotus ostreatus* (Jacq.) P. Kumm.: Kömürcü Bent, on beech stump, N 41° 12' - E 28° 57', 100 m, 04.10.2014, Akata 6076.

Pluteaceae

117. *Pluteus cervinus* (Schaeff.) P. Kumm.: Kömürcü Bent, on beech stump, N 41° 12' - E 28° 57' 62", 110 m, 04.10.2014, Akata 6071; Lohwag (1964).

118. *Pluteus romellii* (Britzelm.) Sacc.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6316.

Psathyrellaceae

119. *Coprinellus disseminatus* (Pers.) J.E. Lange: Büyük Bent, on oak stump, N 41° 10' - E 28° 57', 65 m, 04.10.2014, Akata 6055; Lohwag (1957, 1964).

120. *Coprinellus micaceus* (Bull.) Vilgalys, Hopple & Jacq. Johnson: Büyük Bent, on oak stump, N 41° 10' - E 28° 57', 65 m, 04.10.2014, Akata 6062.

121. *Coprinellus silvaticus* (Peck) Gminder: Neşet Suyu, in beech forest, N 41° 11' - E 28° 58', 80 m, 06.11.2014, Akata 6197.

122. *Coprinopsis cinerea* (Schaeff.) Redhead, Vilgalys & Moncalvo: Fatih Çeşmesi, near oak forest, N 41° 10' - E 28° 56', 55m, 10.11.2015, Akata 6344.

123. *Coprinopsis atramentaria* (Bull.) Redhead, Vilgalys & Moncalvo: Atatürk Arboretum, in grass, N 41° 10' - E 28° 59', 150 m, 24.10.2013, Akata 5946.

124. *Coprinopsis marcescibilis* (Britzelm.) Örstadius & E. Larss.: Valide Bendi, near oak forest, N 41° 11' - E 28° 59', 140 m, 22.10.2015, Akata 6306.

125. *Coprinopsis picacea* (Bull.) Redhead, Vilgalys & Moncalvo: Kömürcü

Bent, in beech forest, N 41° 12' - E 28° 57', 100 m, 22.10.2013, Akata 5868.

126. *Coprinopsis radiata* (Bolton) Redhead, Vilgalys & Moncalvo: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6330.

127. *Panaeolina foenicicii* (Pers.) Maire: Atatürk Arboretum, on meadow, N 41° 10' - E 28° 59', 190 m, 23.06.2015, Akata 6268.

128. *Psathyrella candolleana* (Fr.) Maire: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6338.

129. *Psathyrella piluliformis* (Bull.) P.D. Orton: Kömürcü Bent, on beech stump, N 41° 12' - E 30° 57', 100 m, 22.10.2013, Akata 5871.

130. *Psathyrella umbonata* (Peck) A.H. Sm.: Öner (1972).

Schizophyllaceae

131. *Schizophyllum commune* Fr.: Kömürcü Bent, on fallen beech branch, N 41° 12' - E 28° 57', 100 m, 23.10.2013, Akata 5907; Lohwag (1964).

Strophariaceae

132. *Hypholoma fasciculare* (Huds.) P. Kumm. : Fatih Çeşmesi, on oak stump, N 41° 10' - E 28° 56', 65 m, 23.10.2013, Akata 5910; Lohwag (1964).

133. *Hypholoma lateritium* (Schaeff.) P. Kumm.: Fatih Çeşmesi, on oak stump, N 41° 10' - E 28° 56', 65 m, 23.10.2013, Akata 5913; Lohwag (1957, 1964).

134. *Protostropharia semiglobata* (Batsch) Redhead, Moncalvo & Vilgalys: Öner (1972).

135. *Stropharia aeruginosa* (Curtis) Qué.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 105 m, 05.10.2014, Akata 6108; Lohwag (1957, 1964).

136. *Stropharia caerulea* Kreisel: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6325.

Tricholomataceae

137. *Clitocybe gibba* (Pers.) P. Kumm.: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2015, Akata 6287.

138. *Clitocybe infundibuliformis* (Schaeff.) Qué.: Lohwag (1964).

139. *Clitocybe nebularis* (Batsch) P. Kumm.: Neşet Suyu, in oak forest, N 41° 11' - E 28° 58', 80 m, 22.10.2013, Akata 5870.

- 140. *Clitocybe odora*** (Bull.) P. Kumm.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6314.
- 141. *Lepista nuda*** (Bull.) Cooke. Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 100 m, 23.10.2013, Akata 5899.
- 142. *Leucocortinarius bulbiger*** (Alb. & Schwein.) Singer: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2014, Akata 6291.
- 143. *Melanoleuca exscissa*** (Fr.) Singer: Fidanlık, in meadow, N 41° 11' - E 28° 57', 85 m, 21.10.2013, Akata 5844.
- 144. *Paralepista flaccida*** (Sowerby) Vizzini: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 85 m, 21.10.2013, Akata 5842.
- 145. *Pseudoclitocybe cyathiformis*** (Bull.) Singer: Fidanlık, near fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2014, Akata 6284.
- 146. *Tricholoma atosquamosum*** Sacc.: Fatih Çeşmesi, in oak forest, N 41° 10' - E 28° 56', 65 m, 23.10.2013, Akata 5932.
- 147. *Tricholoma colossus*** (Fr.) Quél.: Atatürk Arboretum, under pine, N 41° 10' - E 28° 59', 130 m, 11.11.2015, Akata 6266.
- 148. *Tricholoma fracticum*** (Britzelm.) Kreisel: Atatürk Arboretum, under pine, N 41° 10' - E 28° 59', 130 m, 27.09.2015, Akata 6275
- 149. *Tricholoma orirubens*** Quél.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6327.
- 150. *Tricholoma portentosum*** (Fr.) Quél.: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2014, Akata 6299.
- 151. *Tricholoma saponaceum*** (Fr.) P. Kumm.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110 m, 03.10.2014, Akata 6029.
- 152. *Tricholoma sejunctum*** (Sowerby) Quél.: Büyük Bent, in beech forest, N 41° 10' - E 28° 57', 65 m, 04.10.2014, Akata 6075.
- 153. *Tricholoma sulphureum*** (Bull.) P. Kumm.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6341.
- 154. *Tricholoma terreum*** (Schaeff.) P. Kumm.: Atatürk Arboretum, under spruce, N 41° 10' - E 28° 59', 125 m, 24.10.2013, Akata 5945; Lohwag (1964).
- 155. *Tricholoma vaccinum*** (Schaeff.) P. Kumm.: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2014, Akata 6297.
- 156. *Tricholomopsis rutilans*** (Schaeff.) Singer: Atatürk Arboretum, on pine stump, N 41° 10' - E 28° 59', 135 m, 04.10.2014, Akata 6097
- Tubariaceae**
- 157. *Tubaria furfuracea*** (Pers.) Gillet: Lohwag (1964).
- Typhulaceae**
- 158. *Macrotyphula juncea*** (Alb. & Schwein.) Berthier: Sesli et al. (2015).
- Auriculariales**
- Auriculariaceae**
- 159. *Auricularia auricula-judae*** (Bull.) Quél.: Fatih Çeşmesi, on hornbeam stump, N 41° 10' - E 28° 56', 60 m, 23.10.2013, Akata 5934.
- 160. *Auricularia mesenterica*** (Dicks.) Pers.: Kömürcü Bent, on beech stump, N 41° 12' - E 28° 57', 95 m, 25.10.2013, Akata 5962; Lohwag (1957, 1964).
- 161. *Exidia glandulosa*** (Bull.) Fr.: Lohwag (1964).
- 162. *Pseudohydnum gelatinosum*** (Scop.) P. Karst.: Fidanlık, on fir stump, N 41° 11' - E 28° 57', 80 m, 29.09.2014, Akata 6298.
- Boletales**
- Boletaceae**
- 163. *Boletus edulis*** Bull.: Lohwag, (1957, 1964); Selik (1965).
- 164. *Boletus erythropus*** Pers.: Çiftalan Yolu, in beech forest, N 41° 13' - E 28° 55', 140 m, 11.11.2015, Akata, 6360.
- 165. *Boletus rhodopurpureus*** Smotl.: Fatih Çeşmesi, in oak forest, N 41° 10' - E 28° 56', 55m, 10.11.2015, Akata 6345.
- 166. *Boletus satanas*** Lenz: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6310.
- 167. *Boletus subtomentosus*** L.: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 100 m, 12.11.2015, Akata, 6375.
- 168. *Butyriboletus regius*** (Krombh.) D. Arora & J.L. Frank: Fatih Çeşmesi, near oak forest, N 41° 10' - E 28° 56', 55m, 10.11.2015, Akata 6350.
- 169. *Imleria badia*** (Fr.) Vizzini: Selik (1965).
- 170. *Leccinum pseudoscabrum*** (Kallenb.) Šutara: Valide Bendi, in oak forest, N 41° 11' - E 28° 59', 140 m, 22.10.2015, Akata 6305.

171. *Leccinum scabrum* (Bull.) Gray: Lohwag (1957, 1964).

172. *Suillus luridus* (Schaeff.) Murrill: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 100 m, 12.11.2015, Akata, 6379.

173. *Xerocomellus chrysenteron* (Bull.) Šutara: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 65 m, 23.10.2013, Akata 5880.

Diplocystidiaceae

174. *Astraeus hygrometricus* (Pers.) Morgan: Fatih Çeşmesi, near oak forest, N 41° 10' - E 28° 56', 55m, 10.11.2015, Akata 6348; Lohwag (1964).

Gomphidiaceae

175. *Chroogomphus rutilus* (Schaeff.) O.K. Mill: Atatürk Arboretum, under pine, N 41° 10' - E 28° 59', 130 m, 27.09.2015, Akata 6271.

Hygrophoropsidaceae

176. *Hygrophoropsis aurantiaca* (Wulfen) Maire: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2015, Akata 6300; Öner (1972).

Paxillaceae

177. *Paxillus involutus* (Batsch) Fr.: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 105 m, 04.10.2014, Akata 6079.

Sclerodermataceae

178. *Scleroderma areolatum* Ehrenb.: Ayvat Bendi, near beech forest, N 41° 12' - E 28° 56', 100 m, 12.11.2015, Akata, 6376.

179. *Scleroderma citrinum* Pers.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 100 m, 22.10.2013, Akata 5864.

180. *Scleroderma polyrhizum* (J.F. Gmel.) Pers.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6311.

181. *Scleroderma verrucosum* (Bull.) Pers.: Fatih Çeşmesi, near oak forest, N 41° 10' - E 28° 56', 50 m, 10.11.2015, Akata 6351.

182. *Pisolithus arhizus* (Scop.) Rauschert: Fatih Çeşmesi, near oak forest, N 41° 10' - E 28° 56', 55m, 10.11.2015, Akata 6347

Suillaceae

183. *Suillus bovinus* (L.) Roussel: Atatürk Arboretum, under pine, N 41° 10' - E 28° 59', 130 m, 27.09.2015, Akata 6280; Selik (1965).

184. *Suillus granulatus* (L.) Roussel: Atatürk Arboretum, under pine, N 41° 10' - E 28° 59', 140 m, 27.10.2015, Akata 6342.

185. *Suillus grevillei* (Klotzsch) Singer: Lohwag (1957, 1964); Selik

186. *Suillus luteus* (L.) Roussel: Atatürk Arboretum, under pine, N 41° 10' - E 28° 59', 140 m, 29.10.2014, Akata 6149.

Cantharellales

Cantharallaceae

187. *Cantharellus cibarius* Fr.: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 110 m, 09.11.2014, Akata, 6233; Selik (1965).

188. *Cantharellus cinereus* (Pers.) Fr.: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 100 m, 12.11.2015, Akata, 6381

189. *Cantharellus melanoxeros* Desm.: Kömürcü Bent, in beech forest, N 41° 10' - E 28° 57', 60 m, 03.10.2014, Akata 6032; Akata and Kumbaşlı (2014).

190. *Craterellus cornucopioides* (L.) Pers.: Büyük Bent, in beech forest, N 41° 10' - E 28° 57', 80 m, 10.11.2013, Akata 6007.

191. *Craterellus lutescens* (Fr.) Fr.: Valide Bendi, in oak forest, N 41° 11' - E 28° 59', 150 m, 04.10.2014, Akata 6083.

192. *Craterellus tubaeformis* (Fr.) QuéL.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6323; Öner (1972).

Gomphales

Clavariadelphaceae

193. *Clavariadelphus truncatus* Donk: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 90 m, 06.11.2014, Akata 6213.

Clavulinaceae

194. *Clavulina cinerea* (Bull.) J. Schröt.: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2015, Akata 6288.

195. *Clavulina coralloides* (L.) J. Schröt.: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2015, Akata 6301.

196. *Clavulina rugosa* (Bull.) J. Schröt.: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 90 m, 06.11.2014, Akata 6211.

Hydnaceae

197. *Hydnum repandum* L.: Neşet Suyu, in oak forest, N 41° 11' - E 28° 58', 95 m, 22.10.2013, Akata 5869; Selik (1965).

Gomphaceae

198. Ramaria fennica (P. Karst.) Ricken: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6324.

199. Ramaria flava (Schaeff.) Quél.: Selik (1965).

200. Ramaria formosa (Pers.) Quél.: Çiftalan Yolu, in beech forest, N 41° 13' - E 28° 55', 140 m, 11.11.2015, Akata, 6362.

201. Ramaria stricta (Pers.) Quél.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 110 m, 23.10.2013, Akata 5897.

Dacrymycetales

Dacrymycetaceae

202. Calocera cornea (Batsch) Fr.: Fatih Çeşmesi, on oak stump, N 41° 10' - E 28° 56', 55m, 23.10.2013, Akata 5911.

203. Calocera viscosa (Pers.) Fr.: Fidanlık, on fir stump, N 41° 11' - E 28° 57', 85 m, 21.10.2013, Akata 5836.

Geastrales K. Hosaka & Castellano

Geastraceae Corda

204. Geastrum fimbriatum Fr.: Fidanlık, near fir forest, N 41° 11' - E 28° 57', 80 m, 29.09.2015, Akata 6283.

Hymenochaetales

Hymenochaetaceae

205. Inonotus hispidus (Bull.) P. Karst.: Büyük Bent, on oak tree, N 41° 10' - E 28° 57', 65 m, 04.10.2014, Akata 6052; Lohwag (1964).

206. Fomitiporia punctata (P. Karst.) Murrill: Lohwag (1964).

207. Fomitiporia robusta (P. Karst.) Fiasson & Niemelä: Lohwag (1964).

208. Fuscoporia torulosa (Pers.) T. Wagner & M. Fisch: Bourdot & Galzin): Neşet Suyu, on beech stump, N 41° 11' - E 28° 58', 85 m, 15.11.2014, Akata 6256; Lohwag (1964).

209. Hymenochaete mougeotii (Fr.) Cooke: Lohwag (1964).

210. Hymenochaete rubiginosa (Dicks.) Lév.: Lohwag (1957, 1964).

211. Phellinus igniarius (L.) Quél.: Öner (1972).

212. Phylloporia ribis (Schumach.) Ryvarden: Kömürcü Bent, on beech, N 41° 12' - E 28° 57', 100 m, 22.10.2013, Akata 5865.

213. Pseudoinonotus dryadeus (Pers.) T. Wagner & M. Fisch.: Lohwag (1957, 1964).

214. Xanthoporia radiata (Sowerby) Tura, Zmitr., Wasser, Raats & Nevo: Lohwag (1957, 1964).

Incerti cedis

215. Trichaptum biforme (Fr.) Ryvarden: Atatürk Arboretum, on oak trunk, N 41° 10' - E 28° 59', 215m, 29.10.2014, Akata 6150; Lohwag (1957, 1964).

Phallales

Phallaceae

216. Clathrus ruber P. Micheli ex Pers.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 29.10.2014, Akata 6165.

217. Mutinus caninus (Huds.) Fr.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 29.10.2014, Akata 6167.

218. Phallus impudicus L.: Kömürcü Bent, in beech forest, N 41° 10' - E 28° 57', 60 m, 03.10.2014, Akata 6031; Öner (1972).

Polyporales

Fomitopsidaceae

219. Daedalea quercina (L.) Pers.: Büyük Bent, on oak stump, N 41° 10' - E 28° 57', 60 m, 29.10.2014, Akata 6163; Lohwag (1957, 1964).

220. Fomitopsis pinicola (Sw.) P. Karst.: Fidanlık, on fir stump, N 41° 11' - E 28° 57', 85 m, 21.10.2013, Akata 5835.

221. Laetiporus sulphureus (Bull.) Murrill: Fatih Çeşmesi, in oak forest, N 41° 10' - E 28° 56', 50 m, 10.11.2015, Akata 6352; Lohwag (1964); Selik, (1965).

222. Postia caesia (Schrad.) P. Karst. : Fidanlık, on fir stump, N 41° 11' - E 28° 57', 85 m, 21.10.2013, Akata 5841.

223. Postia floriformis (Quél.) Jülich: Lohwag (1964).

224. Postia stiptica (Pers.) Jülich: Kömürcü Bent, on beech stump, N 41° 12' - E 28° 57', 100 m, 22.10.2013, Akata 5872.

Ganodermataceae Donk

225. Ganoderma adspersum (Schulzer) Donk.: Fatih Çeşmesi, on oak tree, N 41° 10' - E 28° 56', 50 m, 10.11.2015, Akata 6355.

226. Ganoderma applanatum (Pers.) Pat: Lohwag (1957,1964).

227. Ganoderma lucidum (Curtis) P. Karst.: Kömürcü Bent, on beech root, N 41° 12' - E 28° 57', 100 m, 22.10.2013, Akata 5861; Lohwag (1957, 1964).

228. Ganoderma resinaceum Boud.: Fatih Çeşmesi, on oak tree, N 41° 10' - E 28° 56', 50 m, 10.11.2015, Akata 6346.

Meripilaceae

229. Meripilus giganteus (Pers.) P. Karst.: Kömürcü Bent, on beech stump, N 41° 12' - E 28° 57', 95 m, 25.10.2013, Akata 5969.

230. Rigidoporus ulmarius (Sowerby) Imazeki: Lohwag (1964).

Meruliaceae

231. Bjerkandera adusta (Willd.) P. Karst.: Ayvat Bendi, on beech stump, N 41° 12' - E 28° 56', 100 m, 09.11.2014, Akata, 6229; Lohwag (1964).

232. Merulius tremellosus Schrad.: Fatih Çeşmesi, on oak stump, N 41° 10' - E 28° 56', 65 m, 23.10.2013, Akata 5929; Lohwag (1964).

233. Sarcodontia crocea (Schwein.) Kotl.: Büyük Bent, on fallen apple branch, N 41° 10' - E 28° 57', 70 m, 29.10.2014, Akata 6172.

234. Sarcodontia spumea (Sowerby) Spirin: Lohwag (1964).

235. Stecherinum ochraceum (Pers.) Gray: Kömürcü Bent, , on beech stump, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6307

Phanerochaetaceae

236. Terana coerulea (Lam.) Kuntze: Lohwag (1964).

Polyporaceae

237. Cerrena unicolor (Bull.) Murrill: Kömürcü Bent, on beech stump, N 41° 12' - E 28° 57', 100 m, 22.10.2013, Akata 5860; Lohwag (1964).

238. Fomes fomentarius (L.) Gillet: Neşet Suyu, on beech trunk, N 41° 11' - E 28° 58', 80m, 06.11.2014, Akata 6207; Lohwag (1964).

239. Fomes fulvus (Scop.) Gillet: Lohwag (1964).

240. Hapalopilus nidulans (Fr.) P. Karst.: Valide Bendi, on oak stump , N 41° 11' - E 28° 59', 140m, 22.10.2015, Akata 6303.

241. Lentinus arcularius (Batsch) Zmitr.:Lohwag (1964).

242. Lenzites betulina (L.) Fr.: Ayvat Bendi, on fallen beech branch, N 41° 12' - E 28° 56', 120m, 04.10.2014, Akata 6081; Lohwag (1964).

243. Neolentinus lepideus (Fr.) Redhead & Ginns: Fidanlık, on pine stump, N 41° 11' - E 28° 57', 80m, 12.11.2015, Akata 6385.

244. Polyporus tuberaster (Jacq. ex Pers.) Fr.: Büyük Bent, on fallen oak branch, N 41° 10' - E 28° 57', 60m, 29.10.2014, Akata 6173.

245. Polyporus umbellatus (Pers.) Fr.: Kömürcü Bent, on beech root, N 41° 12' - E 28° 57', 110m, 23.10.2015, Akata 6308.

246. Trametes gibbosa (Pers.) Fr. : Kömürcü Bent, on beech stump, N 41° 12' - E 28° 57', 95m, 25.10.2013, Akata 5976; Lohwag (1957, 1964).

247. Trametes hirsuta (Wulfen) Lloyd: Fidanlık, on fallen oak branch N 41° 11' - E 28° 57', 80m, 21.10.2013, Akata 5850; Lohwag (1964).

248. Trametes tenuis (Berk.) Justo: Lohwag (1964).

249. Trametes versicolor (L.) Lloyd: Kömürcü Bent, on beech stump, N 41° 12' - E 28° 57', 95m, 25.10.2013, Akata 5966; Lohwag (1964).

Sparassidaceae Herter

250. Sparassis crispa (Wulfen) Fr.: Fidanlık, in fir forest, N 41° 11' - E 28° 57', 90 m, 06.11.2014, Akata 6217.

Russulales

Auriscalpiaceae

251. Auriscalpium vulgare Gray: Atatürk Arboretum, on pine cone, N 41° 10' - E 28° 59', 130 m, 27.09.2015, Akata 6273.

Hericiaceae Donk

252. Hericium erinaceus (Bull.) Pers.: Fatih Çeşmesi, on oak stump, N 41° 10',- E 28° 56', 65 m, 23.10.2013, Akata 5901.

253. Hericium coralloides (Scop.) Pers.: Fidanlık, in fir trunk, N 41° 11' - E 28° 57', 85 m, 21.10.2013, Akata 5840.

Peniophoraceae

254. Peniophora quercina (Pers.) Cooke: Lohwag (1964).

Russulaceae

255. Lactarius azonites (Bull.) Fr.: Valide Bendi, in oak forest, N 41° 11' - E 28° 59', 140 m, 22.10.2015, Akata 6304.

256. Lactarius blennius (Fr.) Fr.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 100 m, 05.10.2014, Akata 6106.

257. Lactarius deliciosus (L.) Gray: Atatürk Arboretum, under pine, N 41° 10' - E 28° 59', 130 m, 27.09.2015, Akata 6272; Selik (1965).

258. *Lactarius controversus* Pers.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 09.11.2014, Akata 6248.

259. *Lactarius fuliginosus* (Fr.) Fr.: Fatih Çeşmesi, in oak forest, N 41° 10' - E 28° 56', 60 m, 03.11.2014, Akata 6185.

260. *Lactarius helvus* (Fr.) Fr.: Büyük Bent, in beech forest, N 41° 10' - E 28° 57', 60 m, 04.10.2014, Akata 6067.

261. *Lactarius quietus* (Fr.) Fr.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 29.10.2014, Akata 6170.

262. *Lactarius semisanguifluus* R. Heim & Leclair: Atatürk Arboretum, under pine, N 41° 10' - E 28° 59', 125 m, 27.09.2015, Akata 6282.

263. *Lactarius vellereus* (Fr.) Fr.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 95m, 25.10.2013, Akata 5964.

264. *Lactarius violascens* (J. Otto) Fr.: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 100 m, 12.11.2015, Akata, 6373.

265. *Lactarius volemus* (Fr.) Fr.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 100 m, 23.10.2014, Akata 6134.

266. *Lactarius zonarius* (Bull.) Fr.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 29.10.2014, Akata 6161.

267. *Russula chloroides* (Krombh.) Bres.: Kömürcü Bent, in beech forest, N 41° 12' - E 28°, 110 m, 23.10.2013, Akata 5895.

268. *Russula delica* Fr.: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 100 m, 12.11.2015, Akata, 6380

269. *Russula foetens* Pers.: Ayvat Bendi, in beech forest, N 41° 12' - E 28° 56', 110 m, 09.11.2014, Akata, 6235.

270. *Russula nigricans* Fr.: Büyük Bent, in oak forest, N 41° 10' - E 28° 57', 60 m, 24.10.2015, Akata 6339.

271. *Russula virescens* (Schaeff.) Fr.: Kömürcü Bent, in beech forest, N 41° 12' - E 28° 57', 100 m, 05.10.2014, Akata 6104.

Stereaceae

272. *Stereum gausapatum* (Fr.) Fr.: Lohwag (1964).

273. *Stereum hirsutum* (Willd.) Pers.: Fatih Çeşmesi, on oak trunk, N 41° 10' - E 28° 56', 60 m, 23.10.2013, Akata 5914; Lohwag (1964).

274. *Stereum ostrea* (Blume & T. Nees) Fr.: Kömürcü Bent, , in beech forest, N 41°

12' - E 28° 57', 110m, 23.10.2015, Akata 6312.

275. *Xylobolus frustulatus* (Pers.) P. Karst.: Lohwag (1957, 1964).

Thelephorales

Bankeraceae

276. *Phellodon tomentosus* (L.) Banker: Öner (1972).

Thelephoraceae

277. *Thelephora anthocephala* (Bull.) Fr.: Büyük Bent, in oak forest, branch, N 41° 10' - E 28° 57', 70 m, 23.10.2013, Akata 5884.

278. *Tomentella bryophila* (Pers.) M.J. Larsen: Akata and Gürkanlı (2016).

Tremellales

Tremellaceae

279. *Tremella foliacea* Pers.: Neşet Suyu, on beech trunk, N 41° 11' - E 28° 58', 80 m, 06.11.2014, Akata 6196.

280. *Tremella mesenterica* Retz.: Fatih Çeşmesi, on fallen oak branch, N 41° 10' - E 28° 56', 55 m, 23.10.2013, Akata 5915.

Discussion

As a result of this study, 280 species belong to 2 division, 18 order, 71 families and 150 genus were listed. The list contains 23 *Ascomycota* (8 *Pezizales*, 7 *Xylariales*, 6 *Helotiales*, 1 *Hypocreales* and 1 *Rhytismatales*) and 257 *Basidiomycota* (135 *Agaricales*, 32 *Polyporales*, 25 *Russulales*, 24 *Boletales*, 11 *Hymenochaetales*, 9 *Gomphales*, 6 *Cantharellales*, 4 *Auriculariales*, 3 *Thelephorales*, 3 *Phallales* 2 *Dacrymycetales*, and 2 *Tremellales* and 1 *Geastrales*).

In the research area, 174 macrofungi species were terricolous, 104 lignicolous, 1 fungicolous (*Asterophora lycoperdoides*) and 1 coprophilous (*Cheilymenia granulata*). The most widespread terricolous macrofungi were *Amanita citrina*, *A. rubescens*, *Cantharellus cibarius*, *Entoloma sinuatum*, *Hydnum repandum*, *Laccaria laccata*, *Lactarius vellereus*, *Lepista nuda*, *Lycoperdon perlatum*, *Macrolepiota procera*, *Russula delica*, *R. virescens* and *Xerocomellus chrysenteron*. Nine lignicolous species (*Armillaria mellea*, *Bjerkandera adusta*, *Hypholoma fasciculare*, *Mucidula mucida*, *Postia stiptica* *Schizophyllum commune*, *Stereum hirsutum* and *Trametes*

versicolor) were also very common in the study area.

Seventy four of 280 species were edible but only 14 species (*Agaricus arvensis*, *Amanita caesarea*, *Cantharellus cibarius*, *Craterellus cornucopioides*, *Lactarius deliciosus*, *L. volemus*, *Lepista nuda*, *Macrolepiota. procera*, *Marasmius oreades*, *Pleurotus ostreatus*, *Russula chloroides*, *R. delica* and *T. terreum*) are commonly eaten by local people. There were also 42 poisonous species reported in the research area. These are; *Agaricus xanthodermus*, *Amanita gemmata*, *A. muscaria*, *A. ovoidea*, *A. pantherina*, *A. phalloides*, *A. virosa*, *Boletus erythropus*, *B. satanas*, *Clitocybe nebularis*, *Coprinopsis atramentaria*, *Entoloma clypeatum*, *E. sinuatum*, *Galerina marginata*, *Gymnopilus junonius*, *Hapalopilus nidulans*, *Hebeloma sinapizans*, *Helvella crispa*, *H. lacunosa*, *Hypholoma fasciculare*, *H. lateritium*, *Hygrophoropsis*

aurantiaca, *Inocybe asterospora*, *I. bongardii*, *I. geophylla*, *I. godeyi*, *I. rimosa*, *Lactarius helvus*, *Lepiota clypeolaria*, *L. cristata*, *Leucocortinarius bulbiger*, *Mycena pura*, *M. rosea*, *Panaeolina foenicicii*, *Paxillus involutus*, *Ramaria formosa*, *Sarcosphaera coronaria*, *Scleroderma areolatum*, *S. citrinum*, *S. verrucosum*, *Suillellus luridus* and *Tricholoma sulphureum*. Among them, *Amanita phalloides*, *A. virosa* and *Galerina marginata* are deadly poisonous species that include alpha-amanitin (Akata et al., 2015b).

The species of macrofungi determined in the research area reflect similarity with those of the other investigations on macrofungal taxonomy carried out in its close environs (Table 1). The reason of this similarity may be the common vegetation and climate.

Table1. Similarity percentages of neighboring investigations with Belgrad Forest

Investigations	Total species	Identical species	Similarity (%)
Stojchev et al,1998 (European Part of Turkey)	67	32	47.76
Solak et al., 2002 (Balıkesir)	200	77	38.50
Solak et al., 2003 (Çanakkale)	70	39	55.71

Acknowledgements

Author would like to thank Ankara University Research Fund (Project no: 15H0430001) for its financial support. Jilber Barutçıyan and Onur Akata are also thanked for their valuable contributions in the field.

References

- Akata I. 2016. The first record of *Inocybe godeyi* in Turkey. *Ot Sistematik Botanik Dergisi*, 22 (accepted).
- Akata I., Kumbaşlı M. 2014. A New and Rare Record for Turkish *Cantharellus*. *Biological Diversity and Conservation*, 7 (3): 143-145.
- Akata I., Gürkanlı C.T. 2014. A Note on Turkish *Tomentella*. *International Forestry Symposium 2017 (IFS 2017)*, Proceedings Book, 57-59.
- Akata I., Doğan H.H. 2015. *Orbiliaceae* for Turkish *Ascomycota*: Three new records. *Bangladesh Journal of Botany*, 44: 91-95.
- Akata I., Kabaktepe Ş., Akgül, H. 2015a. *Cortinarius caperatus* (Pers.) Fr., A New Record For Turkish Mycobiota. *Kastamonu Üniversitesi Orman Fakültesi Dergisi*, 15 (1): 86-89.

Akata I., Kaya E., Yılmaz İ., Bakırcı S., Bayram R. 2015b. Türkiye’de Yetişen Alfa Amanitin İçeren Mantarlar. Düzce Tıp Fakültesi Dergisi, 17(1): 39-44.

Akata I., Kabaktepe Ş., Akgül H. 2016. *Cordyceps militaris*, The First Record From Family *Cordycipitaceae* in Turkey. Kastamonu Üniversitesi Orman Fakültesi Dergisi, 16 (1): 280-284.

Allı H., Şen İ., Altuntaş D. 2016. Macrofungi of İznik Province. Commun. Fac. Sci.Univ.Ank.Series C, 25 (1-2): 7-24.

Akman Y. 1999. İklim ve Biyoiklim (Biyoiklim Metodları ve Türkiye İklimleri). 1. Baskı, Kariyer Matbaacılık Ltd. Şti., Ankara.

Bas C., Kyper Th. W., Noordeloos M. E., Vellinga E. C. 1988. Flora Agaricina Neerlandica -Critical monographs on the families of agarics and boleti occurring in the Netherlands. Volume 1. *Entolomataceae*. A.A. Balkema, Rotterdam, Netherlands.

Bas C., Kyper Th. W., Noordeloos M.E., Vellinga E.C. 1990. Flora Agaricina Neerlandica - Critical monographs on the families of agarics and boleti occurring in the Netherlands. Volume 2. *Pluteaceae, Tricholomataceae*. A. A. Balkema, Rotterdam, Netherlands.

Bas C., Kyper Th. W., Noordeloos M.E., Vellinga E.C. 1995. Flora Agaricina Neerlandica - Critical monographs on the families of agarics and boleti occurring in the Netherlands. Volume 3. *Tricholomataceae*. A. A. Balkema, Rotterdam, Netherlands.

Bas C., Kyper Th. W., Noordeloos M.E., Vellinga E.C. 1999. Flora Agaricina Neerlandica - Critical monographs on the families of agarics and boleti occurring in the Netherlands. Volume 4. *Strophariaceae, Tricholomataceae*. A. A. Balkema, Rotterdam, Netherlands.

Breitenbach J., Kränzlin F. 1984. Fungi of Switzerland, Vol: 1, *Ascomycetes*, Verlag Mykologia CH-6000 Luzern 9, Switzerland.

Breitenbach J., Kränzlin F. 1986. Fungi of Switzerland. Vol: 2, Nongilled Fungi, Verlag Mykologia CH-6000 Luzern 9, Switzerland.

Breitenbach J., Kränzlin F. 1991. Fungi of Switzerland. Vol: 3, Boletes and Agarics 1. Part, Verlag Mykologia CH-6000 Luzern 9, Switzerland.

Breitenbach J., Kränzlin F. 1995. Fungi of Switzerland. Vol: 4, Agarics 2. Part, Verlag Mykologia CH-6000 Luzern 9, Switzerland.

Breitenbach J., Kränzlin F. 2000. Fungi of Switzerland. Vol: 5, Agarics 3. Part, Verlag Mykologia CH-6000 Luzern 9, Switzerland.

Cakir M., Makineci E., Kumbaşlı M. 2010. Comparative study on soil properties in a picnic and undisturbed area of Belgrad forest, Istanbul. Journal of Environmental Biology, 31: 125-128.

Calonge F.D. 1998. *Gasteromycetes, I. Lycoperdales, Nidulariales, Phallales, Sclerodermatales, Tulostomatales*. Volume 3., Real Jardin Botanico, Stuttgart.

Cannon P.F., Kirk P.M. 2007. Fungal families of the world. CAB International. Wallingford.

Cebeci H.H., Acer S. 2007. The occurrence of some lepidopterous species on the horse chestnut (*Aesculus hippocastanum* L.) at Istanbul-Belgrad Forest in Turkey. Acta Agriculturae Slovenica, 89 (1): 95-102.

Çobanoğlu G. 2007. Lichens from the Maslak Campus of İstanbul Technical University. Turkish Journal of Botany, 71-74.

Davis P.H 1965. Flora of Turkey and the east Aegean islands. Vol. 1. Edinburgh Univ Press, Edinburgh.

Demir M., Makineci E., Yılmaz E. 2007. Investigation of timber harvesting impacts on herbaceous cover, forest floor and surface soil properties on skid road in an oak (*Quercus petraea* L.) stand. Building and Environment, 42: 1194–1199.

Doğan H.H., Akata I. 2015. New Additions to Turkish Gasteroid Fungi. Kastamonu Üniversitesi Orman Fakültesi Dergisi, 15 (2): 329-333. 25.

Doğan H.H., Kurt, F. 2016. New macrofungi records from Turkey and macrofungal diversity of Pozanti-Adana. Turkish Journal of Botany, 40: 209-217.

Dülger B., Akata I. 2016. *Lasiosphaeria ovina*, A first record for family *Lasiosphaeriaceae* in Turkey. Mantar Dergisi, 7 (1): 88-91.

Hansen L., Knudsen H. 1992. Nordic Macromycetes. Volume 2. *Polyporales*,

Boletales, Agaricales, Russulales.
Nordsvamp, Copenhagen, Denmark.

Hansen L., Knudsen H. 1997. Nordic Macromycetes. Volume 3. Heterobasidoid, Aphyllophoroid, and Gastromycetoid Basidiomycetes. Nordsvamp, Copenhagen, Denmark.

Hansen L., Knudsen H. 2000. Nordic Macromycetes. Volume 1. Ascomycetes. Nordsvamp, Copenhagen, Denmark.

Kirk P.M., Cannon, P.F., Minter D.W., Stalpers J.A. 2008. Dictionary of the fungi, 10th ed. CAB International. Wallingford, UK.

Kränzlin F. 2005. Fungi of Switzerland. Volume 6. Russulaceae 2. Verlag Mykologia, Switzerland.

Lohwag K. 1957. Ein Beitrag Zur Pilzflora Der Turkei. İstanbul Üniversitesi Orman Fakültesi Dergisi, Seri A, 7 (1): 129-137.

Lohwag K. 1964. Belgrad Orman'ından mikolojik notlar (çeviren: Selik, M.). İstanbul Üniversitesi Orman Fakültesi Dergisi, Seri B, 14 (2); 128-135.

Öner M. 1972. A contribution to the knowledge of common Turkish higher fungi. Mycopathologia et Mycologia Applicata, 47 (4): 369-373.

Selik M. 1965. Belgrad ormanında bulunan yenlen mantarlar. İstanbul Üniversitesi Orman Fakültesi Dergisi, Seri A, 14 (2); 129-135.

Sesli E., Denchev C.M. 2008. Checklists of the myxomycetes, larger ascomycetes, and larger basidiomycetes in Turkey. Mycotaxon, 106: 65-67.

Sesli E., Türkekul İ., Akata I., Niskanen T. 2016. New records of Basidiomycota from Trabzon, Tokat, and İstanbul provinces in Turkey. Turkish Journal of Botany 40: 531-545.

Solak M.H., Yılmaz-Ersel F., Gücin F., Işıloğlu M. 2002. Macrofungi of Balıkesir Province from Turkey, Bio-Science Research Bulletin, 18 (2): 137-149.

Solak M.H., Gücin F., Yılmaz F., Işıloğlu M. 2003. Some Macrofungi from Çanakkale Province. Ot Sistematik Botanik Dergisi, 10 (1): 97-110.

Solak M.H., Işıloğlu, M., Kalmış, E, Allı, H. 2015. Macrofungi of Turkey Vol. II. Üniversiteliler Ofset, İzmir.

Stojchev G., Asan A., Gücin, F. 1998. Some macrofungi species of European part of Turkey. Turkish Journal of Botany, 24; 341-348.

Sümer S. 1976. Belgrad ormanından kesilmiş odunlara arız olan önemli odun tahripçisi mantarlar üzerinde araştırmalar. İstanbul Üniversitesi Orman Fakültesi Dergisi, Seri A, 26 (1); 175-235.

Sümer S. 1989. Some new records for the fungal flora of Turkey. Marmara Üniversitesi Fen Bilimleri Dergisi, 6; 1-22.

Url.: <http://www.indexfungorum.org>: (accessed 15 February 2017).

Yaltırık F. 1966. Belgrad orman vejetasyonunun floristik analizi ve orman mescere tiplerinin kompozisyonu üzerine araştırmalar. Tarım Bakanlığı Orman genel müdürlüğü yayın sıra no: 436, seri no: 6, Ankara.