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Contributions to the macrofungi of Kastamonu province, Turkey

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Abstract—This study was based on specimens of macrofungi collected from Kastamonu province between 1998 and 2000. Field and laboratory identification revealed 197 taxa belonging to 34 families (4 families of *Ascomycotina* and 30 families of *Basidiomycotina*). 13 new taxa were added to the Turkish mycota as new records.

Key words—macromycota, flora, A4-A5 floristic squares, fungi

Introduction

This research was carried out in Kastamonu province (Figure 1), which is situated in the western Black Sea Region of Turkey. The western Black Sea Region extends from west of the Kızılırmak river delta to the east of the provinces Adapazarı and Bilecik. Kastamonu is placed in squares A4-A5 according to the floristic system of Davis (1965-1985). Three rainfall regimes (Akman 1990) are prevalent in the study area: A) near the Black Sea coast the second type of oceanic rain fall regime, B) around Kastamonu central-Taşköprü the semi continental rain fall regime, and C) in Daday-Araç-Ilgaz a transition rain fall regime.

The canopy vegetation of the study area is composed mainly of conifers (*Pinus nigra*, *P. sylvestris*, *Abies nordmanniana*) and broadleaved trees (*Populus alba*, *Salix alba*, *Quercus pubescens*, *Q. petraea*, *Q. macranthera*, *Q. hartwissiana*, *Fagus orientalis*). Previous mycological investigations were carried out by Öder (1982), Afyon (2001 a, b), and Afyon & Konuk (2001a, b). No further studies are known from the area but Afyon et al. (2004, 2005), Yağız et al. (2005) and Sesli & Denchev (2005) produced checklists of adjacent regions.

Although parts of the area have been intensively managed for timber production, forest cover is almost intact (WWF 2006) and a small part of Ilgazdağı Mountain National Park is situated within the research area. Many of its habitats are ideal for mycological studies. The work presented here is the most up-to-date and extensive list

of macrofungi of Kastamonu Province. Ilgazdağı Mountain is mainly situated in Çankırı province but some of its foot hills extend into Kastamonu. Since it is a huge mountain a separate study should be planned for it in its entire area. According to the report of the Kastamonu local environmental and Forestry authority, it has various types of topography, climate and soil (Kastamonu 2004). The members of the *Russulaceae* growing under oak, pine, and beech trees form ectomycorrhizae with them according to Öder (1988). The members of *Boletaceae* under pine and beech trees form ectotroph mycorrhizae with their roots.

Collection localities:

Kastamonu:

1. Araç, around Kadıköyü village, 1000 m; 33°39' E – 41°03' N
2. Araç, around İğdir village, 550-570 m; 33°08' E – 41°14' N
3. Araç, around Pelitören village, 1050 m; 33°19' E – 41°18' N
4. Araç, around Sarcılar village, 600-620 m; 33°14' E – 41°11' N
5. Araç, around Taşpınar village, 1150 m; 33°30' E – 41°17' N
6. Azdavay, around Kayıkçı village, 1200 m; 33°28' E – 41°32' N
7. Azdavay, around Sökü forestry managements, 1250 m, 32°24' E – 41°30' N
8. Centre, around Bulacık village, 1100 m; 33°47' E – 41°20' N
9. Centre, around Sapaca village, 900 m; 33°50' E – 41°11' N
10. Centre, around Ümit village, 1100 m; 33°48' E – 41°15' N
11. Centre, Ilgaz district highway 20th km, 1650 m; 33°44' E – 41°03' N
12. Centre, Tosya highway 12th km, 820 m; 33°52' E – 41°09' N
13. Centre, Tosya highway 20th km, 1150 m; 33°54' E – 41°00' N
14. Çatalzeytin-Devrekani highway 20th km, 880 m; 34°05' E – 41°49' N
15. Daday, around Akpınar village, 930 m; 33°18' E – 41°18' N
16. Daday, around Uzbanlar village, 880 m; 33°34' E – 41°21' N
17. Daday, Ballıdağ mountain, 1200-1570 m; 33°23' E – 41°33' N
18. Daday, Ballıdağ mountain, near Senatoryum, 1150 m; 33°23' E – 41°31' N
19. İnebolu, around Kabalarsökü village, 1000 m; 33°27' E – 41°57' N
20. Küre, around Ersizler village, 850 m; 33°29' E – 41°50' N
21. Küre, around Ersizlerdere village, 850 m; 33°29' E – 41°48' N
22. Küre, around Uzunöz village, 1250 m; 33°31' E – 41°35' N
23. Pınarbaşı, around Karafasil village, 970 m; 33°11' E – 41°34' N
24. Taşköprü, around Akseki village, 700 m; 34°12' E – 41°40' N
25. Taşköprü, around Akseki village, 800-900 m; 34°12' E – 41°40' N
26. Taşköprü, around Alamabatak village, 650 m; 33°57' E – 41°29' N
27. Taşköprü, around Alatarla village, 650 m; 34°00' E – 41°29' N
28. Taşköprü, around Tepedelik, 740 m; 34°15' E – 41°37' N
29. Taşköprü, around Böcü village, 630-670 m; 34°05' E – 41°30' N
30. Taşköprü, around Cördük village, 650 m; 34°15' E – 41°34' N
31. Taşköprü, around Çaylaklar village, 980 m; 34°20' E – 41°20' N
32. Taşköprü, around Yeniler village, 980 m; 34°17' E – 41°26' N
33. Taşköprü, Elekdağı mountain, 1100 m; 34°21' E – 41°26' N
34. Taşköprü, near city centre, 630 m; 34°13' E – 41°31' N

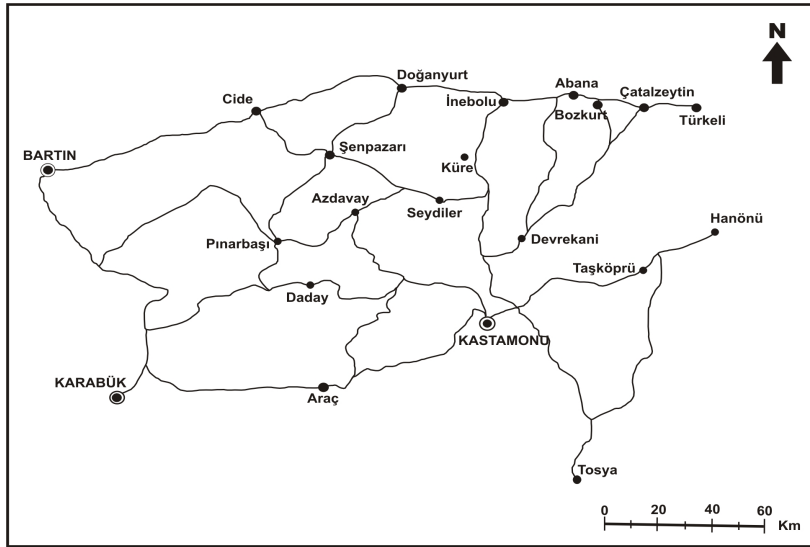


Figure 1: Map of the study area.

Materials and Methods

Specimens were collected from the research area during field trips between 1998 and 2000. The macroscopic and ecological characters of the specimens were recorded in situ and their microscopic features determined in the laboratory. The diagnoses of the taxa were carried out as described in previous studies (Afyon et al. 2005; Yağız et al. 2006). Taxa and their authors are given according to an amended list of authors of fungus names CABI Bioscience electronic version (<http://www.indexfungorum.org/Names/Names.asp>). The specimens are kept at Selcuk University, Education Faculty Herbarium (KNYA).

Results

In our study, 197 species were recovered belonging to 34 families. The distribution of the species and their families are: *Discinaceae* 1, *Helvellaceae* 3, *Morchellaceae* 3, *Pezizaceae* 1, *Agaricaceae* 14, *Bankeraceae* 3, *Bolbitiaceae* 13, *Boletaceae* 10, *Cantharellaceae* 1, *Clavariaceae* 1, *Clavulinaceae* 1, *Cortinariaceae* 20, *Dacrymycetaceae* 1, *Entolomataceae* 1, *Ganodermataceae* 2, *Geastraceae* 2, *Gomphaceae* 1, *Gomphidiaceae* 3, *Hydnangiaceae* 2, *Hygophoropsidaceae* 1, *Hymenochaetaceae* 1, *Lycoperdaceae* 9, *Marasmiaceae* 7, *Nidulariaceae* 1, *Phallaceae* 1, *Plutaceae* 10, *Polyporaceae* 5, *Psathyrellaceae* 1, *Rhizopogonaceae* 2, *Russulaceae* 26, *Sclerodermataceae* 1, *Strophariaceae* 3, *Suillaceae* 4, *Tricholomataceae* 41, and *Tulostomataceae* 1. Their collection dates, localities, habitats, collector's names and herbarium numbers are given in the list below.

LIST OF TAXA

ASCOMYCOTINA

Discinaceae

1. *Gyromitra gigas* (Krombh.) Cooke: Around *Abies nordmanniana* stumps, 24.04.1999, locality 17, A&Y: 1064.

Helvellaceae

2. *Helvella acetabulum* (L.) Quél.: In *Pinus nigra* and *Quercus* sp. forest, 02.06.1998, locality 25, A&Y: 533; 23.04.1999, locality 2, A&Y: 1053; 20.05.1999, locality 29, A&Y: 1096.
3. *Helvella lacunosa* Afzel.: In *Pinus nigra* forest, 02.06.1998, locality 9, A&Y: 536.
4. *Helvella queletii* Bres.: Under *Pinus nigra*, 20.05.1999, locality 29, A&Y: 1095.

Morchellaceae

5. *Morchella costata* (Vent.) Pers.: In *Abies nordmanniana* forest, 24.04.1999, locality 17, A&Y: 1066.
6. *Morchella rigida* (Krombh.) Boud.: In *Abies nordmanniana* forest, 24.04.1999, locality 17, A&Y: 1065.
7. *Morchella vulgaris* (Pers.) Boud.: In *Pinus nigra* forest, 25.04.1999, locality 4, A&Y: 1071.

Pezizaceae

8. *Sarcosphaera coronaria* (Jacq.) J. Schröt.: In *Pinus nigra* forest, 19.05.1998, locality 8, A&Y: 452; 19.05.1999, locality 4, A&Y: 1086; 22.04.2000, locality 4, A&Y: 1558.

BASIDIOMYCOTINA

Agaricaceae

9. *Agaricus cupreobrunneus* (Jul. Schäff. & Steer) Pilát: In grass, 27.10.1998, A&Y: 919.
10. *Agaricus essettei* Bon: In grass, 29.10.1999, locality 30, A&Y: 1384.
11. *Agaricus macrosporus* (F.H. Møller & Jul. Schäff.) Pilát: In grass, 01.06.1998, locality 29, A&Y: 468.
12. *Agaricus silvaticus* Schaeff.: In grass, 27.10.1998, locality 22, A&Y: 899.
13. *Agaricus silvicola* (Vittad.) Peck.: In grass, 29.10.1999, locality 30, A&Y: 1385.
14. *Coprinus atramentarius* (Bull.) Fr.: Under *Populus alba*, 24.04.1999, locality 34, A&Y: 1059.
15. *Coprinus truncorum* (Scop.) Fr.: On stumps of *Quercus* sp. 18.05.1998, locality 1, A&Y: 441.

16. **Cystolepiota adulterina* (F.H. Møller) Bon: In pastures, 29.10.1999, locality 32, A&Y: 1377; 04.11.2000, locality 3, A&Y: 1697.
17. *Lepiota clypeolaria* (Bull.) P. Kumm.: In pastures, 01.06.1998, locality 31, A&Y: 478; 27.10.1998, locality 6, A&Y: 910.
18. *Lepiota cristata* (Bolton) P. Kumm.: In pastures, 18.05.1998, locality 2, A&Y: 417.
19. *Lepiota erminea* (Fr.) P. Kumm: In pastures, 01.06.1998, locality 32, A&Y: 517.
20. *Lepiota ignivolvata* Bousset & Joss. ex Joss.: In *Quercus* sp. forest, 01.06.1998, locality 29, A&Y: 470.
21. *Macrolepiota excoriata* (Schaeff.) M.M. Moser: In pastures, 29.10.1999, locality 29, A&Y: 1357.
22. *Macrolepiota gracilentata* (Krombh.) Wasser: In pastures, 27.10.1998, locality 19, A&Y: 884.

Bankeraceae

23. *Bankera violascens* (Alb. & Schwein.) Pouzar: In *Pinus nigra* forest, 04.11.2000, locality 18, A&Y: 1699.
24. *Sarcodon glaucopus* Maas Geest. & Nannf.: In *Pinus nigra* forest, 02.07.1998, locality 33, A&Y: 634.
25. *Sarcodon leucopus* (Pers.) Maas Geest. & Nannf.: In *Pinus nigra* forest, 01.06.1998, locality 31, A&Y: 495; 28.10.1998, locality 32, A&Y: 936; 26.06.1999, A&Y: 1214.

Bolbitiaceae

26. *Agrocybe cylindracea* (DC.) Maire: Parasitic on *Salix alba*, 24.04.1999, locality 34, A&Y: 1056.
27. *Agrocybe praecox* (Pers.) Fayod: In grass, 24.04.1999, locality 33, A&Y: 1057; 20.05.1999, locality 29, A&Y: 1099.
28. *Agrocybe vervacti* (Fr.) Singer: In grass, 20.05.1999, locality 26, A&Y: 1090.
29. *Hebeloma album* Peck: Among shrubs, 01.06.1998, locality 31, A&Y: 501; 28.10.1998, locality 32, A&Y: 934; 20.05.1999, locality 30, A&Y: 1094.
30. *Hebeloma birrum* (Fr.) Gillet: In *Pinus nigra* forest, 19.05.1999, locality 4, A&Y: 1085.
31. *Hebeloma cistophilum* Maire: In *Pinus nigra* forest, 01.06.1998, locality 31, A&Y: 502.
32. *Hebeloma crustuliniforme* (Bull.) Quéf.: In *Quercus* sp. and *Abies nordmanniana* forest, 01.06.1998, locality 29, A&Y: 487; 04.11.2000, locality 17, A&Y: 1723.
33. *Hebeloma edurum* Métrod ex Bon: In *Pinus nigra* forest, 28.10.1998, locality 32, A&Y: 932.
34. *Hebeloma mesophaeum* (Pers.) Quéf. var. *mesophaeum*: In *Pinus nigra* and *Abies nordmanniana* forest, 18.05.1998, locality 1, A&Y: 428; 19.05.1998, locality 8, A&Y: 445; 27.10.1998, locality 17, A&Y: 917; 04.11.2000, locality 23, A&Y: 1741.
35. **Hebeloma pusillum* J.E. Lange: In *Quercus* sp. forest, 01.06.1998, locality 29, A&Y: 486.

36. *Hebeloma senescens* (Batsch) Berk. & Broome: In *Pinus nigra* and *Abies nordmanniana* forest, 28.10.1998, locality 32, A&Y: 933; 04.11.2000, locality 17, A&Y: 1739; 04.11.2000, locality 23, A&Y: 1746.
37. *Panaeolus campanulatus* (L.) Quél.: In pastures, 18.05.1998, locality 1, A&Y: 441.
38. *Panaeolus sphinctrinus* (Fr.) Quél.: In grass, 29.10.1999, locality 31, A&Y: 1372.

Boletaceae

39. *Boletus chrysenteron* Bull.: In *Quercus* sp. forest, 01.06.1998, locality 29, A&Y: 465.
40. *Boletus ferrugineus* Boud.: In mixed forest, 26.06.1999, locality 28, A&Y: 1221.
41. *Boletus impolitus* Fr.: In *Quercus* sp. forest, 02.07.1998, locality 29, A&Y: 621.
42. *Boletus legaliae* Pilát: In mixed forest, 02.07.1998, locality 29, A&Y: 620; 27.10.1998, locality 22, A&Y: 896.
43. *Boletus luridus* Schaeff.: In *Pinus nigra* and *Quercus* sp. forest, 02.06.1998, locality 13, A&Y: 542; 03.07.1998, locality 30, A&Y: 637.
44. *Boletus moravicus* Vacek: In *Quercus* sp. forest, 02.06.1998, locality 24, A&Y: 525; 04.07.1998, locality 20, A&Y: 700.
45. *Boletus reticulatus* Schaeff.: In mixed forest, 28.10.1998, locality 32, A&Y: 937; 26.06.1999, locality 28, A&Y: 1223.
46. **Boletus subappendiculatus* Dermek, Lazebn. & J. Veselský: In *Pinus nigra* forest, 18.05.1998, locality 2, A&D: 427.
47. *Boletus subtomentosus* L.: In *Pinus nigra* and *Quercus* sp. forest, 01.06.1998, locality 29, A&Y: 471; 02.07.1998, A&Y: 622; 26.06.1999, locality 28, A&Y: 1222.
48. *Leccinum crocipodium* (Letell.) Watling: In *Quercus* sp. forest, 02.06.1998, locality 24, A&Y: 1224.

Cantharellaceae

49. *Cantharellus friesii* Welw. & Curr.: Under *Fagus orientalis*, 04.07.1998, locality 20, A&Y: 702.

Clavariaceae

50. *Clavulinopsis corniculata* (Schaeff.) Corner: In meadows among grasses, 01.06.1998, locality 32, A&Y: 508.

Clavulinaceae

51. *Clavulina cinerea* (Bull.) J. Schröt.: In *Pinus nigra* forest, 01.07.1998, locality 8, A&Y: 619; 02.07.1998, locality 33, A&Y: 629.

Cortinariaceae

52. *Cortinarius allutus* Fr.: In *Abies nordmanniana* forest, 04.11.2000, locality 17, A&Y: 1718.
53. *Cortinarius delibutus* Fr.: In *Quercus* sp. forest, 01.06.1998, locality 29, A&Y: 457.
54. *Cortinarius fasciatus* (Scop.) Fr.: In *Pinus nigra* forest, 01.06.1998, locality 32, A&Y: 513.
55. **Cortinarius isabellinus* Fr.: In *Pinus nigra* forest, 27.10.1998, locality 22, A&Y: 893.
56. **Cortinarius renidentoides* Rob. Henry: In *Pinus nigra* forest, 18.05.1998, locality 1, A&Y: 439.
57. *Cortinarius rigidus* (Scop.) Fr.: In *Quercus* sp. forest, 20.05.1999, locality 29, A&Y: 1097.
58. *Cortinarius saporatus* Britzelm.: In mixed forest, 01.06.1998, locality 31, A&Y: 499; 27.10.1998, locality 21, A&Y: 887.
59. **Cortinarius spilomeus* (Fr.) Fr.: In *Pinus nigra* forest, 27.10.1998, locality 22, A&Y: 891.
60. *Cortinarius splendens* Rob. Henry: In *Fagus orientalis* forest, 27.10.1998, locality 21, A&Y: 886.
61. *Cortinarius subtortus* (Pers.) Fr.: In *Pinus nigra* forest, 01.06.1998, locality 31, A&Y: 504; 04.11.2000, locality 3, A&Y: 1696.
62. **Cortinarius talus* Fr.: In *Abies nordmanniana* forest, 04.11.2000, locality 17, A&Y: 1710.
63. *Cortinarius triumphans* Fr.: In *Pinus nigra* forest, 02.06.1998, locality 9, A&Y: 537.
64. *Cortinarius varius* (Schaeff.) Fr.: In *Pinus nigra* forest, 19.05.1998, locality 8, A&Y: 448.
65. *Inocybe cincinnata* (Fr.) Quél. var. *cincinnata*: In *Abies nordmanniana* forest, 04.11.2000, locality 17, A&Y: 1714.
66. *Inocybe hirtella* Bres. var. *hirtella*: In mixed forest, 18.05.1998, locality 2, A&Y: 418.
67. **Inocybe mixtilis* (Britzelm.) Sacc.: In *Pinus nigra* forest, 28.06.1998, locality 5, A&Y: 1275.
68. **Inocybe petiginosa* (Fr.) Gillet: In *Quercus* sp. forest, 01.06.1998, locality 29, A&Y: 480.
69. *Inocybe queletii* Konrad: In *Pinus nigra* forest, 01.06.1998, locality 31, A&Y: 493.
70. *Inocybe rimosa* (Bull.) P. Kumm.: Near woodland, 02.06.1998, locality 24, A&Y: 520.
71. *Inocybe whitei* (Berk. & Broome) Sacc.: In *Pinus nigra* and *Quercus* sp. forest, 18.05.1998, locality 2, A&Y: 424; 20.05.1999, locality 29, A&Y: 1098.

Dacrymycetaceae

72. *Calocera viscosa* (Pers.) Fr.: On rotten wood of *Abies nordmanniana*, 04.11.2000, locality 17, A&Y: 1736.

Entolomataceae

73. *Clitopilus prunulus* (Scop.) P. Kumm.: In grass, 04.11.2000, locality 23, A&Y: 1750.

Ganodermataceae

74. *Ganoderma applanatum* (Pers.) Pat.: Parasitic on *Quercus* sp., 28.10.1998, locality 28, A&Y: 926; 26.06.1999, A&Y: 1219.
75. *Ganoderma resinaceum* Boud.: Parasitic on *Quercus* sp., 19.05.1999, locality 4, A&Y: 1084.

Geastraceae

76. *Geastrum fimbriatum* Fr.: On rich humus in *Pinus nigra* forest, 19.05.1998, locality 8, A&Y: 454.
77. *Geastrum rufescens* Pers.: In *Pinus nigra* forest, 18.05.1998, locality 1, A&Y: 435; 20.05.1999, locality 13, A&Y: 1088.

Gomphaceae

78. *Clavariadelphus truncatus* (Quél.) Donk: Under *Abies nordmanniana*, 04.11.2000, locality 17, A&Y: 1711.

Gomphidiaceae

79. *Chroogomphus helveticus* (Singer) M.M. Moser: In *Abies nordmanniana* and *Pinus nigra* forest, 27.10.1998, locality 17, A&Y: 920; 29.10.1999, locality 32, A&Y: 1374.
80. *Chroogomphus rutilus* (Schaeff.) O.K. Mill.: In *Pinus nigra* forest, 02.06.1998, locality 9, A&Y: 540; 04.11.2000, locality 3, A&Y: 1693.
81. *Gomphidius glutinosus* (Schaeff.) Fr.: In *Abies nordmanniana* and *Pinus nigra* forest, 27.10.1998, locality 17, A&Y: 921; 28.10.1998, locality 32, A&Y: 924.

Hydnangiaceae

82. *Laccaria bicolor* (Maire) P.D. Orton: In *Pinus nigra* forest, 01.06.1998, locality 31, A&Y: 500.
83. *Laccaria laccata* (Scop.) Cooke: In *Quercus* sp. and *Abies nordmanniana* forest, 01.06.1998, locality 29, A&Y: 477; 02.06.1998, locality 24, A&Y: 519; 04.11.2000, locality 17, A&Y: 1737.

Hygrophoropsidaceae

84. *Tapinella atrotomentosa* (Batsch) Šutara: On stumps of *Abies nordmanniana*, 26.06.1999, locality 28, A&Y: 1217.

Hymenochaetaceae

85. *Phellinus hartigii* (Allesch. & Schnabl) Pat.: Parasitic on wood of *Abies nordmanniana*, 08.07.2000, locality 17, A&Y: 1672.

Lycoperdaceae

86. *Bovista nigrescens* Pers.: In grass and pastureland, 01.06.1998, locality 29, A&Y: 488.
87. *Bovista plumbea* Pers.: In grass, 04.07.1998, locality 20, A&Y: 704.
88. *Handkea excipuliformis* (Scop.) Kreisel: In pastures, 01.06.1998, locality 31, A&Y: 496; 29.10.1999, A&Y: 1368; 02.07.1998, locality 29, A&Y: 626, 28.10.1998, locality 32, A&Y: 940; 21.04.2000, locality 10, A&Y: 1536; 04.11.2000, locality 17, A&Y: 1707.
89. *Lycoperdon mammiforme* Pers.: In grass and pastureland, 01.06.1998, locality 29, A&Y: 484; 29.10.1999, locality 31, A&Y: 1358.
90. *Lycoperdon molle* Pers.: In grass, 04.11.2000, locality 3, A&Y: 1691.
91. *Lycoperdon perlatum* Pers.: In pastures, 24.04.1999, locality 15, A&Y: 1070; 30.10.1999, locality 8, A&Y: 1450; 04.11.2000, locality 17, A&Y: 1731.
92. *Lycoperdon pyriforme* Schaeff.: On dead wood of *Quercus* sp., 01.06.1998, locality 34, A&Y: 489.
93. *Lycoperdon umbrinum* Pers.: In grass, 01.06.1998, locality 29, A&Y: 474.
94. *Vascellum pratense* (Pers.) Kreisel: In pastures, 28.10.1998, locality 32, A&Y: 925; 20.06.1999, locality 28, A&Y: 1220.

Marasmiaceae

95. **Armillaria borealis* Marxm. & Korhonen: On wood of *Abies nordmanniana*, 27.10.1998, locality 17, A&Y: 914.
96. *Armillaria mellea* (Vahl) P. Kumm.: On wood of *Pinus nigra* trees, 25.10.1998, locality 32, A&Y: 927; 04.11.2000, locality 18, A&Y: 1705.
97. *Marasmius oreades* (Bolton) Fr.: In pastures, 02.06.1998, locality 24, A&Y: 520; 29.10.1999, locality 31, A&Y: 1369; 04.11.2000, locality 23, A&Y: 1753.
98. *Rhodocollybia maculata* (Alb. & Schwein.) Singer var. *maculata*: In *Abies nordmanniana*, 04.11.2000, locality 17, A&Y: 1715.
99. *Strobilurus tenacellus* (Pers.) Singer: On *Pinus nigra* cones, 22.04.2000, locality 10, A&Y: 1537.
100. *Xerula melanotricha* Dörfelt: On or near rotten stumps or roots of *Pinus nigra*, 04.11.2000, locality 18, A&Y: 1704.
101. *Xerula radicata* (Relhan) Dörfelt: On or near dead stumps of *Fagus orientalis*, 21.05.1999, locality 14, A&Y: 1116.

Nidulariaceae

102. *Cyathus olla* (Batsch) Pers.: In sandy soil, 20.05.1999, locality 26, A&Y: 1091; 30.10.1999, locality 8, A&Y: 1449.

Phallaceae

103. *Phallus impudicus* L.: In *Pinus nigra* forest, 08.07.2000, locality 18, A&Y: 1673.

Plutaceae

104. *Amanita argentea* Huijsman: In *Quercus* sp. forest, 02.06.1998, locality 24, A&Y: 523.
105. *Amanita battarrae* (Boud.) Bon: In *Pinus nigra* forest, 02.06.1998, locality 25, A&Y: 527.
106. *Amanita caesarea* (Scop.) Pers.: In *Pinus nigra* forest, 27.10.1998, locality 22, A&Y: 897.
107. *Amanita citrina* Pers. var. *citrina*: In *Fagus orientalis* and *Pinus nigra* forest, 27.10.1998, locality 21, A&Y: 890; 21.05.1999, locality 14, A&Y: 1117.
108. *Amanita echinocephala* (Vittad.) Quél.: In *Quercus* sp. forest, 02.06.1998, locality 24, A&Y: 524.
109. *Amanita eliae* Quél.: In *Quercus* sp. forest, 02.06.1998, locality 24, A&Y: 526.
110. *Amanita ovoidea* (Bull.) Link: In *Quercus* sp. forest, 01.06.1998, locality 29, A&Y: 467; 02.06.1998, locality 24, A&Y: 518.
111. *Amanita vaginata* (Bull.) Lam. var. *vaginata*: In *Pinus nigra* forest, 02.07.1998, locality 33, A&Y: 632.
112. *Pluteus umbrosus* (Pers.) P. Kumm.: On rotten *Pinus nigra* trunk, 06.07.2000, locality 25, A&Y: 1630.
113. *Volvariella pusilla* (Pers.) Singer: Road side, 01.06.1998, locality 29, A&Y: 458.

Polyporaceae

114. *Fomes fomentarius* (L.) J. Kickx f.: Parasitic on wood of *Salix alba*, 21.04.2000, locality 27, A&Y: 1540.
115. *Polyporus arcularius* (Batsch) Fr.: On dead branches of *Quercus* sp., 23.04.1999, locality 2, A&Y: 1055.
116. *Pycnoporus cinnabarinus* (Jacq.) P. Karst: On dead wood of *Quercus* sp., 26.06.1999, locality 32, A&Y: 1216.
117. *Trametes hirsuta* (Wulfen) Pilát: On dead wood of *Quercus* sp., 02.07.1998, locality 30, A&Y: 635.
118. *Trametes pubescens* (Schumach.) Pilát: On dead wood of *Fagus orientalis*, 04.11.2000, locality 23, A&Y: 1751.

Psathyrellaceae

119. *Psathyrella marcescibilis* (Britzelm.) Singer: In grass, 18.05.1998, locality 2, A&Y: 430.

Rhizopogonaceae

120. *Rhizopogon ochraceorubens* A.H. Sm.: On sandy soil, 18.05.1998, locality 1, A&Y: 436; 02.07.1998, locality 33, A&Y: 627; 27.10.1998, locality 6, A&Y: 904; 29.10.1999, locality 28, A&Y: 1382; 04.11.2000, locality 3, A&Y: 1694.
121. *Rhizopogon roseolus* (Corda) Th. Fr.: On sandy soil, 01.06.1998, locality 32, A&Y: 514; 27.10.1998, locality 17, A&Y: 918; 24.04.1999, locality 16, A&Y: 1063; 04.11.2000, locality 17, A&Y: 1733.

Russulaceae

122. *Lactarius acerrimus* Britzelm.: Under *Quercus* sp., 26.06.1999, locality 28, A&Y: 1218.
123. *Lactarius deliciosus* (L.) Gray: In *Pinus nigra* forest, 04.11.2000, locality 23, A&Y: 1743.
124. *Lactarius deterrimus* Gröger: In *Pinus nigra* forest, 30.10.1999, locality 8, A&Y: 1456.
125. *Lactarius subdulcis* (Bull.) Gray.: In *Abies nordmanniana* forest, 04.11.2000, locality 17, A&Y: 1727.
126. *Lactarius vellereus* (Fr.) Fr. var. *vellereus*: In *Quercus* sp., 01.06.1999, locality 29, A&Y: 482.
127. *Russula acetolens* Rauschert: In *Pinus nigra* forest, 01.06.1998, locality 32, A&Y: 512.
128. *Russula aeruginea* Fr.: Under *Quercus* sp., 04.07.1998, locality 20, A&Y: 707.
129. *Russula albonigra* (Krombh.) Fr.: In *Pinus nigra* forest, 26.06.1999, locality 8, A&Y: 618.
130. *Russula cessans* A. Pearson: In *Pinus nigra* forest, 28.06.1999, locality 5, A&Y: 1280.
131. *Russula cyanoxantha* (Schaeff.) Fr.: In *Quercus* sp. and *Pinus nigra* forest, 01.06.1998, locality 29, A&Y: 459; 02.07.1998, A&Y: 624.
132. *Russula delica* Fr.: In *Quercus* sp. and *Pinus nigra* forest, 02.07.1998, locality 29, A&Y: 623.
133. *Russula farinipes* Romell: Under *Quercus* sp., 01.06.1998, locality 29, A&Y: 464; 02.06.1998, locality 24, A&Y: 530.
134. *Russula fellea* (Fr.) Fr.: Under *Quercus* sp., 01.06.1998, locality 29, A&Y: 459.
135. *Russula foetens* (Pers.) Pers.: In *Quercus* sp. forest, 02.07.1998, locality 29, A&Y: 625.
136. *Russula fragilis* (Pers.) Fr. var. *fragilis*: In *Quercus* sp. and *Abies nordmanniana* forest, 02.06.1998, locality 9, A&Y: 541; 04.11.2000, locality 17, A&Y: 1712.
137. *Russula grata* Britzelm.: In *Quercus* sp and *Pinus nigra* forest, 02.06.1998, locality 13, A&Y: 547; 02.07.1998, locality 29, A&Y: 631.
138. *Russula integra* (L.) Fr. var. *integra*: In *Abies nordmanniana* forest, 04.11.2000, locality 17, A&Y: 1730.
139. *Russula luteotacta* Rea: Under *Quercus* sp., 02.06.1998, locality 24, A&Y: 528.
140. *Russula ochroleuca* Pers.: In *Pinus nigra* forest, 02.06.1998, locality 25, A&Y: 529; 29.10.1999, locality 31, A&Y: 1356.
141. *Russula paludosa* Britzelm.: In *Pinus nigra* forest, 28.06.1999, locality 5, A&Y: 1279.
142. *Russula pectinatoides* Peck: Under *Quercus* sp., 02.06.1998, locality 24, A&Y: 531.
143. *Russula puellaris* Fr.: In *Quercus* sp. and *Pinus nigra* forest, 01.06.1998, locality 32, A&Y: 507; 02.06.1998, locality 24, A&Y: 521.
144. *Russula sanguinaria* (Schumach.) Rauschert: In *Quercus* sp. and *Pinus nigra* forest, 01.07.1998, locality 8, A&Y: 617; 02.07.1998, locality 33, A&Y: 628.
145. *Russula torulosa* Bres.: In *Abies nordmanniana* forest, 27.10.1998, locality 17, A&Y: 916.

146. *Russula vinosa* Lindblad: In *Pinus nigra* forest, 02.07.1998, locality 33, A&Y: 630; 27.10.1998, locality 6, A&Y: 905.
 147. *Russula violeipes* Quél.: In *Pinus nigra* forest, 27.10.1998, locality 7, A&Y: 911.

Sclerodermataceae

148. *Scleroderma polyrhizum*: (J.F. Gmel.) Pers.: Near *Pinus nigra*, 04.07.1998, locality 20, A&Y: 699.

Strophariaceae

149. *Hypholoma fasciculare* (Huds.) P. Kumm.: On stumps of *Abies nordmanniana*, 04.11.2000, locality 17, A&Y: 1725.
 150. *Pholiota flavida* (Schaeff.) Singer: On dead stumps of *Pinus nigra*, 04.11.2000, locality 18, A&Y: 1700.
 151. *Stropharia aeruginosa* (Curtis) Quél.: In *Pinus nigra* forest, 29.10.1999, locality 31, A&Y: 1361.

Suillaceae

152. *Suillus collinitus* (Fr.) Kuntze: In *Pinus nigra* forest, 04.11.2000, locality 23, A&Y: 1754.
 153. *Suillus granulatus* (L.) Roussel: In *Pinus nigra* forest, 19.05.1998, locality 8, A&Y: 450; 26.06.1999, A&Y: 1209; 02.06.1998, locality 9, A&Y: 538.
 154. *Suillus luteus* (L.) Roussel: In *Pinus nigra* forest, 19.05.1998, locality 8, A&Y: 449; 26.06.1999, A&Y: 1210; 01.06.1998, locality 32, A&Y: 516; 27.10.1998, locality 21, A&Y: 885; 20.05.1999, locality 12, A&Y: 1087; 04.11.2000, locality 17, A&Y: 1740.
 155. *Suillus variegatus* (Sw.) Kuntze: In *Pinus nigra* forest, 18.05.1998, locality 1, A&Y: 444; 19.05.1998, locality 8, A&Y: 446; 08.05.2000, locality 9, A&Y: 1608.

Tricholomataceae

156. *Clitocybe brumalis* (Fr.) Quél.: In *Pinus nigra* forest, 20.05.1999, locality 29, A&Y: 1101.
 157. *Clitocybe clavipes* (Pers.) P. Kumm.: In *Pinus nigra* forest, 18.05.1998, locality 2, A&Y: 421; 27.10.1998, locality 22, A&Y: 892; 28.10.1998, locality 32, A&Y: 941; 28.06.1999, locality 5, A&Y: 1278.
 158. *Clitocybe dealbata* (Sowerby) P. Kumm.: In grass, 01.06.1998, locality 29, A&Y: 483; 04.11.2000, locality 3, A&Y: 1697.
 159. *Clitocybe geotropa* (Bull.) Quél.: In *Pinus nigra* forest, 2.10.1998, locality 32, A&Y: 938.
 160. *Clitocybe gibba* (Pers.) P. Kumm.: In *Quercus* sp. and *Pinus nigra* forest, 01.06.1998, locality 29, A&Y: 479; 01.06.1998, locality 32, A&Y: 505; 27.10.1998, locality 6, A&Y: 909.
 161. *Clitocybe inornata* (Sowerby) Gillet: In *Pinus nigra* forest, 30.10.1999, locality 8, A&Y: 1453.

162. *Clitocybe nebularis* (Batsch) P. Kumm.: In *Pinus nigra* forest, 27.10.1998, locality 8, A&Y: 907; 29.10.1999, locality 32, A&Y: 1380.
163. *Clitocybe odora* (Bull.) P. Kumm.: In *Pinus nigra* forest, 16.09.2000, locality 8, A&Y: 1683; 04.11.2000, locality 17, A&Y: 1720.
164. *Clitocybe vermicularis* (Fr.) Quél.: In *Pinus nigra* forest, 27.10.1998, locality 22, A&Y: 895.
165. *Cystoderma amianthinum* (Scop.) Fayod: In *Pinus nigra* forest, 29.10.1999, locality 31, A&Y: 1366; 04.11.2000, locality 3, A&Y: 1689.
166. *Cystoderma granulorum* (Batsch) Fayod: In *Abies nordmanniana* forest, 04.11.2000, locality 17, A&Y: 1738.
167. *Gymnopus dryophilus* (Bull.) Murrill: Among leaf litter in *Quercus* sp. and *Pinus nigra* forest, 18.05.1998, locality 1, A&Y: 432; 01.06.1998, locality 29, A&Y: 481; 20.05.1999, A&Y: 1100; 01.06.1998, locality 32, A&Y: 506; 28.06.1999, locality 5, A&Y: 1277.
168. *Hygrocybe conica* (Scop.) P. Kumm. var. *conica*: In grass, 02.06.1998, locality 13, A&Y: 544; 27.10.1998, locality 22, A&Y: 898.
169. *Hygrocybe russocoriacea* (Berk. & T.K. Mill.) P.D. Orton & Watling: In meadows, 29.10.1999, locality 31, A&Y: 1373.
170. *Hygrocybe persistens* var. *konradii* (R. Haller Aar.) Boertm.: In meadows, 01.06.1998, locality 29, A&Y: 473.
171. *Hygrophorus chrysodon* (Batsch) Fr.: In *Pinus nigra* forest, 25.10.1998, locality 8, A&Y: 794.
172. *Hygrophorus hedrychii* (Velen.) K. Kult: In grass, 01.06.1998, locality 29, A&Y: 426; 04.11.2000, locality 17, A&Y: 1716; 04.11.2000, locality 23, A&Y: 1744.
173. *Hygrophorus pudorinus* (Fr.) Fr.: In *Abies nordmanniana* forest, 04.11.2000, locality 17, A&Y: 1719.
174. *Lepista irina* (Fr.) H.E. Bigelow: In *Pinus nigra* forest, 28.10.1998, locality 32, A&Y: 935.
175. *Melanoleuca excissa* (Fr.) Singer var. *excissa*: In grass, 30.10.1999, locality 8, A&Y: 1454.
176. *Melanoleuca graminicola* (Velen.) Kühner & Maire: In grass, 29.10.1999, locality 31, A&Y: 1362; 04.11.2000, locality 3, A&Y: 1695.
177. *Melanoleuca paedida* (Fr.) Kühner & Maire: In meadows, 04.11.2000, locality 17, A&Y: 1713.
178. *Melanoleuca stridula* (Fr.) Singer: In grass, 01.06.1998, locality 32, A&Y: 515; 04.11.2000, locality 17, A&Y: 1722.
179. *Melanoleuca subalpina* (Britzelm.) Bresinsky & Stangl: Among grass, 04.11.2000, locality 17, A&Y: 1726.
180. *Mycena epipterygia* (Scop.) Gray var. *eipiterygia*: Among leaf litter under *Pinus nigra*, 19.05.1998, locality 8, A&Y: 451; 29.10.1999, locality 31, A&Y: 1365; 04.11.2000, locality 18, A&Y: 1702.
181. *Mycena flavoalba* (Fr.) Quél.: Among grasses and mosses, 18.05.1998, locality 2, A&Y: 423.
182. *Mycena polygramma* (Bull.) Gray: In *Pinus nigra* forest, 29.10.1999, locality 31, A&Y: 1364; 04.11.2000, locality 18, A&Y: 1701.
183. *Omphalina oniscus* (Fr.) Quél.: In moss, 04.11.2000, locality 23, A&Y: 1749.

184. **Tricholoma arvernense* Bon: Under *Pinus sylvestris*, 05.07.2000, locality 11, A&Y: 1626.
185. *Tricholoma aurantium* (Schaeff.) Ricken: In *Pinus nigra* forest, 02.06.1998, locality 25, A&Y: 535;
186. **Tricholoma basirubens* (Bon) A. Riva & Bon: In *Pinus nigra* forest, 24.04.1999, locality 15, A&Y: 1068.
187. *Tricholoma batschii* Gulden: In *Pinus nigra* forest, 01.06.1998, locality 32, A&Y: 509; 28.10.1998, A&Y: 931; 27.10.1998, locality 21, A&Y: 888; 29.10.1999, locality 31, A&Y: 1359.
188. **Tricholoma cingulatum* (Almfelt) Jacobashch: Along forest edges, 04.11.2000, locality 23, A&Y: 1752.
189. *Tricholoma equestre* (L.) P. Kumm.: In *Abies nordmanniana* forest, 04.11.2000, locality 17, A&Y: 1724; 04.11.2000, locality 23, A&Y: 1752.
190. *Tricholoma portentosum* (Fr.) Quél.: In *Abies nordmanniana* forest, 04.11.2000, locality 17, A&Y: 1709; 04.11.2000, locality 23, A&Y: 1748.
191. *Tricholoma saponaceum* (Fr.) P. Kumm. var. *saponaceum*: In *Abies nordmanniana* forest, 04.11.2000, locality 17, A&Y: 1734.
192. *Tricholoma scalpturatum* (Fr.) Quél.: In *Pinus nigra* forest, 01.06.1998, locality 32, A&Y: 510; 04.11.2000, locality 17, A&Y: 1721.
193. *Tricholoma sejunctum* (Sowerby) Quél.: In mixed forest, 01.06.1998, locality 29, A&Y: 463; 28.10.1998, locality 32, A&Y: 939; 29.10.1999, locality 31, A&Y: 1370; 04.11.2000, A&Y: 1735.
194. *Tricholoma stans* (Fr.) Sacc.: In *Pinus nigra* forest, 04.11.2000, locality 3, A&Y: 1687; 04.11.2000, locality 18, A&Y: 1706; 04.11.2000, locality 23, A&Y: 1742.
195. *Tricholoma terreum* (Schaeff.) P. Kumm.: In *Pinus nigra* forest, 18.05.1998, A&Y: 416; 27.10.1998, locality 22, A&Y: 902; 04.11.2000, locality 3, A&Y: 1690.
196. *Xeromphalina campanella* (Batsch) Maire: On wood of *Pinus nigra*, 29.10.1999, locality 31, A&Y: 1371.

Tulostomataceae

197. *Tulostoma brumale* Pers.: Among moss, 22.04.2000, locality 5, A&Y: 1558.

Discussion

197 species of macrofungi were collected from the study area, Kastamonu province, located in the western Black Sea Region of Turkey. Eight of them belonged to Ascomycotina and 189 to Basidiomycotina. Öder (1982) reported 15 macromycota from the study area. Afyon & Konuk (2001 a) reported 26 species of edible macrofungi known by local people from the entire Western Black Sea Region of Turkey. 20 of these grow in Kastamonu. An additional 36 species of poisonous macrofungi were reported by Afyon & Konuk (2001 b) for the entire Western Black Sea Region and 18 of them occurred in Kastamonu province. Moreover, Afyon (2001 a) reported four new Turkish records belonging to *Entolomataceae*, two of which had been recorded from Kastamonu province. A further two species of *Hygrophoraceae* were reported by Afyon (2001 b) as part of five new records from the Western Black

Sea Region. The present report vastly increases and complements the results from these studies. Reports from neighbouring regions of the study area were: Afyon et al. (2000) 62 taxa from Bartın; Afyon & Konuk (2002) 77 taxa from Zonguldak; Afyon et al. (2004) 170 taxa from Sinop; Yağız et al. (2005) 121 taxa from Karabük; Afyon et al. (2005) 80 wood-decaying taxa from the Western Black Sea Region; Yağız et al. (2006) 277 taxa from Bolu and Düzce provinces. When comparing taxa given from neighbouring areas, the present study gives a very high number of recorded data. Furthermore, Kastamonu province seems to be the richest area for its macrofungi diversity. This could be because of its climatic diversity and vegetation types in its different parts as described above.

13 taxa were added to the Turkish mycota as new records from the study area. These are: *Cystolepiota adulterina*, *Hebeloma pusillum*, *Boletus subappendiculatus*, *Cortinarius isabellinus*, *C. renidentoides*, *C. spilomeus*, *C. talus*, *Inocybe mixtilis*, *I. petiginosa*, *Armillaria borealis*, *Tricholoma arvernense*, *T. basirubens* and *T. cingulatum*, they are marked with * in the list above.

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