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## Macromycetes of Genç District (Bingöl-Turkey)

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**Abstract:** The study was conducted on the macrofungi specimens collected from Genç district (Bingöl-Turkey) between 2006-2009 to determine the macromycota of the region. Seventy eight taxa belonging to 23 families in *Ascomycetes* and *Basidiomycetes* classes were identified. Agaricaceae, Tricholomataceae and Strophariaceae are the most crowded families in the region. All of the taxa are new for the district. *Omphalotus olivascens* var. *olivascens* (*Marasmiaceae*) is determined as new record for Turkish macromycota.

**Key words:** Macrofungi, Genç (Bingöl), new record, Turkey

### INTRODUCTION

Genç is a district of Bingöl Province in Eastern Anatolian region of Turkey. It is situated between 38°28'-38°52' North latitudes and 40°08'-40°59' East longitudes within the Murat River Valley and covers an area of 1.646 km<sup>2</sup> (Alay, 1996).

The area (Fig. 1) has a Mediterranean climate (Akman, 1999) with an annual average temperature of 12.04°C and annual rainfall of 939,3 mm and falls mainly in Irano-Turanian phytogeographical sector within the holarctic floral kingdom. Main tree populations affecting the distribution of macrofungi in the region are the members of the genera *Quercus*, *Cedrus*, *Pinus*, *Populus* and *Salix*.

Almost 1827 taxa of macromycetes occurring in Turkey have been reported till now with about 420 published studies (Sesli and Denchev, 2008; Kaya, 2009; Solak *et al.*, 2009). But no records have been given from the district so far. To determine the macrofungal diversity of the area and to make a contribution to the macromycota of Turkey, this study was carried out.

### MATERIALS AND METHODS

The material of this study was collected from different localities within the boundaries of Genç district (Bingöl-Turkey) during periodical field inventories between 2006-2009. Macroscopic characteristics, ecologic

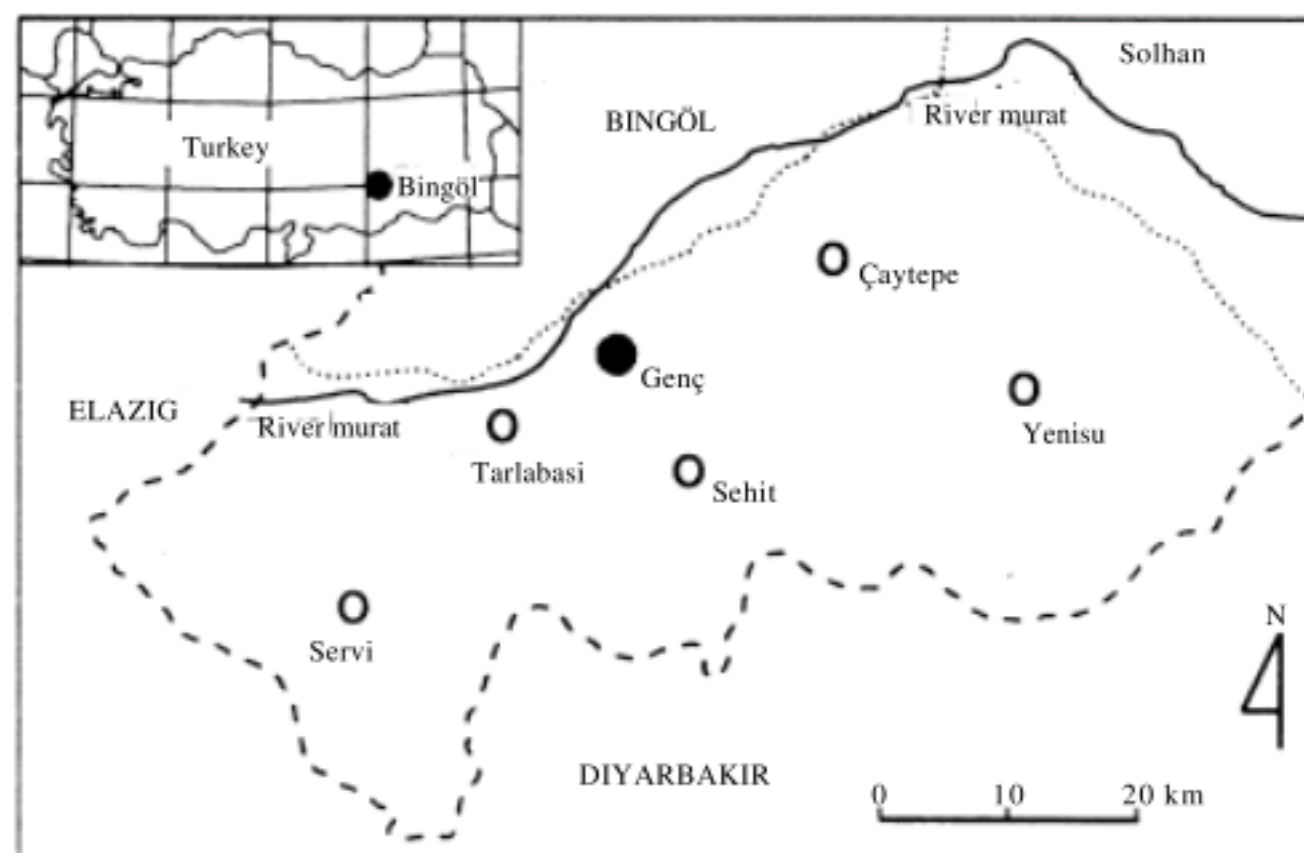


Fig. 1: Map of the research area

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parameters and the local ethnofungal knowledge of the specimens were recorded and color photographs were taken at field.

Carrying the macrofungi samples to the fungarium, spore prints were obtained and they were dried in an air conditioned room and put in polyethylene bags as fungarium material. Determination and measurement of microscopic features were performed according to mycological techniques in the fungarium of Yüzüncü Yıl University. Specimens were identified using Phillips (1981), Moser (1983), Breitenbach and Kränzlin (1984-2005), Buczacki (1989), Jordan (1995) and Pegler *et al.* (1995).

The samples are kept in the Fungarium of Yüzüncü Yıl University, Science and Art Faculty Van, Turkey.

## RESULTS

As a result of this study, 78 taxa were identified. The systematics of the taxa are in accordance with Cannon and Kirk (2007), Kirk *et al.* (2008) and Index fungorum ([www.speciesfungorum.org](http://www.speciesfungorum.org); accessed 27 September 2009) and they are listed in alphabetical order. For each taxa, habitat, locality, collection date and accession numbers (UB: Uzun Bingöl) are given. Newly recorded taxon is indicated with an asterisk (\*) and a photograph is provided.

### Ascomycetes

#### Pezizales

##### Discinaceae Benedix

1. *Gyromitra gigas* (Krombh.) Cooke  
Under conifer trees, Genç forest, 38°44.795'N, 40°34.305'E, 1143 m, 03.05.2009, UB.1182.

##### 2. Helvellaceae Fr.

###### *Helvella leucopus* Pers.

Under *Populus* sp., şehit village, 38°39.917'N, 40°29.856'E, 1275 m, 04.05.2009, UB.1216.

##### Morchellaceae Rchb.

###### 3. *Mitrophora semilibera* (DC.) Lév.

On sandy soil under *Populus* sp., Doğrular village, 38°39.234'N, 40°29.794'E, 1263 m, 04.05.2009, UB.1209.

###### 4. *Morchella crassipes* (Vent.) Pers.

Under *Salix* sp., Tarlabası village, 38°41.473'N, 40°29.391'E, 1165 m, 04.05.2009, UB.1221.

##### Pezizaceae Dumort.

###### 5. *Peziza badia* Pers.

Under conifer trees, Genç forest, 38°44.648'N, 40°34.205'E, 1048 m, 13.05.2008, UB.628.

###### 6. *Peziza repanda* Pers.

On *Salix* sp. stump, Tarlabası village, 38°41.352'N, 40°29.420'E, 1161 m, 04.05.2009, UB.1220.

### Pyronemataceae Corda

#### 7. *Geopora arenicola* (Lév.) Kers

Under conifer trees, Genç forest, 38°44.755'N, 40°34.152'E, 1055 m, 13.05.2008, UB.623.

#### 8. *Geopora sumneriana* (Cooke) M. Torre

Under conifer trees, Genç forest, 38°44.972'N, 40°34.060'E, 1075 m, 20.04.2008, UB.490.

### Basidiomycetes

#### Agaricales

##### Agaricaceae Chevall.

###### 9. *Agaricus arvensis* Schaeff.

In pasture along road side, Cumhuriyet quarter, 38°45.154'N, 40°34.049'E, 1017 m, 08.11.2008, UB.1042.

###### 10. *Agaricus bisporus* (J.E. Lange) Imbach

In meadowy forest clearing, Genç forest, 38°44.812'N, 40°34.220'E, 1056 m, 18.05.2008, UB.705.

###### 11. *Agaricus campestris* var. *campestris* L.

In meadow, Yoldaşan quarter, 38°43.939'N, 40°30.414'E, 996 m, 19.10.2008, UB.950.

###### 12. *Agaricus xanthodermus* Genev.

Under *Populus* and *Salix* sp. trees, Yoldaşan quarter, 38°43.916'N, 40°30.367'E, 992 m, 19.10.2008, UB.951.

###### 13. *Bovista limosa* Rostr.

In meadow under *Populus* sp., Genç-Ham place, 38°44.564'N, 40°32.736'E, 1007 m, 07.05.2007, UB.266a.

###### 14. *Bovista nigrescens* Pers.

In meadow under *Populus* sp., Genç-Ham place, 38°44.565'N, 40°32.737'E, 1007 m 07.05.2007, UB.266b.

###### 15. *Coprinus comatus* (O.F.Müll.) Pers.

Among grass in forest clearing, Genç forest, 38°44.425'N, 40°34.590'E, 1120 m, 03.05.2009, UB.1187.

###### 16. *Lepiota erminea* (Fr.) Gillet

Under conifer trees, Genç forest, 38°44.902'N, 40°34.148'E, 1050 m, 18.05.2008, UB.716.

###### 17. *Lycoperdon atropurpureum* Vittad.

Under conifer trees, Genç forest, 38°44.545'N, 40°34.263'E, 1055 m, 12.11.2006, UB.182a.

###### 18. *Lycoperdon lividum* Pers.

Under *Populus* sp., Yoldaşan quarter, 38°43.960'N, 40°30.326'E, 988 m, 19.10.2008, UB.967.

###### 19. *Lycoperdon molle* Pers.

Under conifer trees, Genç forest, 38°44.550'N, 40°34.255'E, 1055 m, 12.11.2006, UB.182b.

###### 20. *Macrolepiota excoriata* (Schaeff.) Wasser

Under conifer trees, Genç forest, 38°44.543'N, 40°34.296'E, 1051 m, 12.11.2006, UB.188.

###### 21. *Macrolepiota procera* var. *procera* (Scop.) Singer

In pasture, Tarlabası village, 38°41.424'N, 40°29.349'E, 1165 m, 25.10.2006, UB.70; under conifer trees, Genç forest, 38°44.520'N, 40°34.288'D, 1053 m, 12.11.2006 UB.180.

### Amanitaceae R. Heim ex Pouzar

#### 22. *Amanita verna* var. *decipiens* Trimbach



Under conifer trees, Genç forest, 38°44.242'N, 40°34.621'E, 1025 m, 12.11.2006, UB.202.

**Bolbitiaceae** Singer

23. *Conocybe apala* (Fr.) Arnolds

In meadowy forest clearing, Genç forest, 38°44.902'N, 40°34.148'E, 1050 m, 17.05.2008, UB.653.

24. *Conocybe tenera* (Schaeff.) Fayod

Under conifer trees, Genç forest, 38°44.852'N, 40°34.140'E, 1055 m, 18.05.2008, UB.709.

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

On dung remain, Genç forest, 38°44.668'N, 40°34.194'E, 1120 m, 02.05.2009, UB.1171.

**Cortinariaceae** R. Heim ex Pouzar

26. *Cortinarius hercynicus* (Pers.) M.M. Moser

Under conifer trees, Genç forest, 38°44.256'N, 40°34.612'E, 1029 m, 12.11.2006, UB.208.

**Hydnangiaceae** Gäum. and C.W. Dodge

27. *Laccaria laccata* (Scop.) Cooke

Under conifer trees, Genç forest, 38°44.844'N, 40°34.138'E, 1056 m, 13.05.2008, UB.615.

**Inocybaceae** Jülich

28. *Inocybe griseolilacina* J.E. Lange

Under conifer trees, Genç forest, 38°44.899'N, 40°34.103'E, 1050 m, 17.05.2008, UB.677.

29. *Inocybe nitidiuscula* f. *nitidiuscula* (Britzelm.) Lapl.  
Under conifer trees, Genç forest, 38°44.824'N, 40°34.156'E, 1051 m, 17.05.2008, UB.676.

30. *Inocybe rimosa* (Bull.) P. Kumm.

Under conifer trees, Genç forest, 38°44.720'N, 40°34.185'E, 1054 m, 28.05.2006, UB.34.

**Marasmiaceae** Roze ex Kühner

31. *Gymnopus dryophilus* (Bull.) Murrill

Under conifer trees, Genç forest, 38°44.902'N, 40°34.148'E, 1050 m, 13.05.2008, UB.599; On mossy ground, 38°44.865'N, 40°34.225'E, 1059 m, 13.05.2008, UB.614; 38°44.762'N, 40°34.156'E, 1055 m, 17.05.2008, UB.694.

32. *Gymnopus ocior* (Pers.) Antonín and Noordel.

Under conifer trees, Genç forest, 38°44.850'N, 40°3.125'E, 1052 m, 13.05.2008, UB.602.

33. \**Omphalotus olivascens* var. *olivascens* H.E. Bigelow, O.K. Mill. and Thiers (Fig. 2).

On *Quercus* sp. stump, Genç forest, 38°44.927'N, 40°34.156'E, 1085 m, 08.11.2008, UB.1017.

34. *Rhodocollybia prolixa* var. *distorta* (Fr.) Antonín, Halling and Noordel.

Under conifer trees, Genç forest, 38°44.856'N, 40°34.375'E, 1054 m, 12.11.2006, UB.211.

**Mycenaceae** Roze

35. *Mycena epipterygia* (Scop.) Gray

Under conifer trees, Genç forest, 38°44.772'N, 40°34.289'E, 1056 m, 08.11.2008, UB.1031.

36. *Mycena galericulata* (Scop.) Gray

On *Pinus* sp. stump, Genç forest, 38°44.698'N, 40°34.374'E, 1059 m, 17.05.2008, UB.695; 38°44.645'N, 40°34.342'E, 1050 m, 17.05.2008, UB.670.

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

Under conifer trees, Genç forest, 38°44.835'N, 40°34.394'E, 1050 m, 17.05.2008, UB.659; 38°44.799'N, 40°34.302'E, 1143 m, 03.05.2009, UB.1185.

**Physalacriaceae** Corner

38. *Strobilurus tenacellus* (Pers.) Singer



Fig. 2: *Omphalotus olivascens* var. *olivascens*: (a) Basidiocarp and (b) Basidiospores



On pine cone remains, Genç forest, 38°44.960'N, 40°34.097'E, 1061m, 20.04.2008, UB.496.

**Pleurotaceae** Kühner

39. *Hohenbuehelia petaloides* (Bull.) Schulzer

On mossy ground with wood remains, Genç forest, 38°44.821'N, 40°34.204'E, 1053 m, 13.05.2008, UB.618; on conifer stump, 38°44.836'N, 40°34.223'E, 1052 m, 17.05.2008, UB.686.

40. *Pleurotus eryngii* (DC.) Quéf.

On plant remains, Çukur quarter, 38°45.186'N, 40°34.101'E, 1014 m, 24.04.2008, UB.515.

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

On *Salix* sp. trunk, Yoldaşan quarter, 38°43.964'N, 40°30.315'E, 987 m, 19.10.2008, UB.964; Tarlabası village, 38°41.473'N, 40°29.391'E, 1165 m, 04.05.2009, UB.1219.

**Pluteaceae** Kotl. and Pouzar

42. *Pluteus romellii* (Britzelm.) Lapl.

Under conifer trees, Genç forest, 38°44.945'N, 40°34.298'E, 1050 m, 17.05.2008, UB.691; under *Quercus* sp., 38°44.996'N, 40°34.423'E, 1055 m, 08.11.2008, UB.1021.

**Psathyrellaceae** Vilgalys, Moncalvo and Redhead

43. *Coprinellus micaceus* (Bull.) Vilgalys, Hopple and Jacq. Johnson

On *Salix* sp. stump, Tarlabası village, 38°41.475'N, 40°29.384'E, 1166 m, 04.05.2009, UB.1224.

44. *Coprinopsis atramentaria* (Bull.) Redhead, Vilgalys and Moncalvo

Under *Populus* trees, Yoldaşan quarter, 38°45.156'N, 40°34.048'E, 1017 m, 19.10.2008, UB.965.

45. *Coprinopsis nivea* (Pers.) Redhead, Vilgalys and Moncalvo

On cow dung, Yoldaşan quarter, 38°43.916'N, 40°30.367'E, 992 m, 19.10.2008, UB.955.

46. *Parasola kuehneri* (Uljé and Bas) Redhead, Vilgalys and Hopple

Under conifer trees, Genç forest, 38°44.846'N, 40°34.163'E, 1064 m, 13.05.2008, UB.626.

47. *Parasola plicatilis* (Curtis) Redhead, Vilgalys and Hopple

Under *Populus* sp., Yoldaşan quarter, 38°43.916'N, 40°30.367'E, 992 m, 19.10.2008, UB.961.

48. *Psathyrella bifrons* (Berk.) A.H. Sm.

On wood remains, Yoldaşan quarter, 38°43.928'N, 40°30.337'E, 990 m, 19.10.2008, UB.959.

49. *Psathyrella marcescibilis* (Britzelm.) Singer

Under *Populus* sp., Yoldaşan quarter, 38°44.73'N, 40°32.86'E, 1004 m, 19.10.2008, UB.968.

**Strophariaceae** Singer and A.H. Sm.

50. *Agrocybe cylindracea* (DC.) Gillet

On *Populus* sp. stump, Yoldaşan quarter, 38°43.928'N, 40°30.337'E, 990 m, 19.10.2008, UB.958; Genç forest, 38°44.590'N, 40°34.425'E, 1116 m, 03.05.2009, UB.1189.

51. *Agrocybe dura* (Bolton) Singer

In meadow, Next to Genç Petroleum station, 38°44.929'N, 40°33.206'E, 1003 m, 03.05.2009, UB.1199.

52. *Agrocybe praecox* (Pers.) Fayod

Under conifer trees, Genç forest, 38°44.514'N, 40°34.256'E, 1050 m, 17.05.2008, UB.657.

53. *Hebeloma birrus* (Fr.) Gillet

Under conifer trees, Genç forest, 38°44.914'N, 40°34.327'E, 1050 m, 13.05.2008, UB.629.

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

Under conifer trees, Genç forest, 38°44.896'N, 40°34.344'E, 1056 m, 14.05.2008, UB.655.

55. *Hypholoma radicosum* J.E. Lange

On buried conifer wood, Genç forest, 38°44.620'N, 40°34.265'E, 1050 m, 13.05.2008, UB.612.

56. *Hypholoma sublateralitium* (Schaeff.) Quéf.

Under conifer trees, Genç forest, 38°44.953'N, 40°34.127'E, 1062 m, 20.04.2008, UB.492.

57. *Pholiota cerifera* P. Karst.

On *Salix* sp. stump, Yoldaşan quarter, 38°43.962'N, 40°30.319'E, 987 m, 19.10.2008, UB.969.

58. *Pholiota decussata* (Fr.) M.M. Moser

Under conifer trees, Genç forest, 38°44.812'N, 40°34.251'E, 1120 m, 03.05.2009, UB.1183.

59. *Pholiota lucifera* (Lasch) Quéf.

On wood remains, Yoldaşan quarter, 38°43.961'N, 40°30.314'E, 988 m, 19.10.2008, UB.962.

60. *Stropharia coronilla* (Bull.) Quéf.

Among grass, Genç forest, 38°44.954'N, 40°34.125'E, 1042 m, 12.11.2006, UB.198; 38°44.960'N, 40°34.097'E, 1062 m, 20.04.2008, UB.654; 38°44.742'N, 40°34.420'E, 1062 m, 18.05.2008, UB.714; 38°44.773'N, 40°34.225'E, 1120 m, 03.05.2009, UB.1192.

**Tricholomataceae** R. Heim ex Pouzar

61. *Melanoleuca brevipes* (Bull.) Pat.

Among grass, Doğrular village, 38°39.234'N, 40°29.795'E, 1263 m, 04.05.2009, UB.1206; meadow, şehit village, 38°39.917'N, 40°29.856'E, 1275 m, 04.05.2009, UB.1215.

62. *Melanoleuca cognata* var. *cognata* (Fr.) Konrad and Maubl.

Under conifer trees, Genç forest, 38°44.875'N, 40°34.154'E, 1062 m, 20.04.2008, UB.500. 38°44.822'N, 40°34.208'E, 1051 m, 17.05.2008 UB.658.

63. *Melanoleuca excissa* var. *excissa* (Fr.) Singer

Under conifer trees, Genç forest, 38°44.572'N, 40°34.463'E, 1116 m, 03.05.2009, UB.1188.

64. *Melanoleuca melaleuca* (Pers.) Murrill

Under conifer trees, Genç forest, 38°44.972'N, 40°34.060'E, 1075 m, 20.04.2008, UB.489; 38°44.775'N, 40°34.226'E, 1120 m, 03.05.2009, UB.1196.

65. *Melanoleuca paedida* (Fr.) Kühner and Maire

Under conifer trees, Genç forest, 38°44.572'N, 40°34.463'E,



1116 m, 03.05.2009, UB.1188; Among plant remains, Cumhuriyet quarter, 38°45.154'N 40°34.03'E, 1017 m, 03.05.2009, UB.1197.

66. *Melanoleuca stridula* (Fr.) Singer

Under conifer trees, Genç forest, 38°44.698'N, 40°34.267'E, 1126 m, 02.05.2009, UB.1175.

67. *Myxomphalia maura* (Fr.) Hora

Among buried plant remains, Genç forest, 38°44.960'N, 40°34.097'E, 1062 m, 20.04.2008, UB.491.

68. *Omphalina pyxidata* (Bull.) Quéf.

In meadowy forest clearing, Genç forest, 38°44.843'N, 40°34.120'E, 1060 m, 08.11.2008, UB.1036.

69. *Tricholoma myomyces* (Pers.) J.E. Lange

Under conifer trees, Genç forest, 38°44.698'N, 40°34.289'E, 1058 m, 18.05.2008, UB.718.

70. *Tricholoma pessundatum* (Fr.) Quéf.

Under conifer trees, Genç forest, 38°44.674'N, 40°34.156'E, 1065 m, 17.05.2008, UB.685.

71. *Tricholoma* sp.,

Under cedar trees, Genç forest, 38°44.735'N, 40°34.217'E, 1080 m, 12.11.2006, UB.184.

#### **Boletales**

**Rhizopogonaceae** Gäum. and C.W. Dodge

72. *Rhizopogon luteolus* Fr. and Nordholm

Under conifer trees, Genç forest, 38°44.648'N, 40°34.258'E, 1061 m, 17.05.2008, UB.681.

#### **Hymenochaetales**

**Hymenochaetaceae** Donk

73. *Phellinus igniarius* (L.) Quéf.

On conifer stump, Genç forest, 38°44.840'N, 40°34.196'E, 1052 m, 12.11.2006, UB.181.

#### **Polyporales**

**Polyporaceae** Fr. ex Corda

74. *Fomes fomentarius* (L.) J.J. Kickx

On *Populus* sp. stump, Genç-Ham place, 38°44.564'N, 40°32.739'E, 1008 m, 07.05.2007, UB.276; Doğrular village, 38°39.234'N, 40°29.794'E, 1264 m, 04.05.2009, UB.1207; on *Alder* sp. stump, Tarlabası village, 38°41.680'N, 40°29.337'E, 1163 m, 03.10.2008, UB.856.

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

On *Salix* sp. stump, Tarlabası village, 38°41.473'N, 40°29.391'E, 1166 m, 04.05.2009, UB.1222.

76. *Trametes ochracea* (Pers.) Gilb. and Ryvarden

On conifer stump, Genç forest, 38°44.741'N, 40°34.325'E, 1053 m, 17.05.2008, UB.666.

77. *Trametes versicolor* (L.) Lloyd

On cedar stump, Genç forest, 38°44.850'N, 40°34.125'E, 1052 m, 28.05.2006, UB.19.

#### **Russulales**

**Russulaceae** Lotsy

78. *Lactarius controversus* (Pers.) Pers.

Among grass under *Populus* and *Salix* sp., Yoldapan

quarter, 38°43.912'N, 40°30.360'E, 993 m, 19.10.2008, UB.952.

## **DISCUSSION**

In this study, 78 macrofungi taxa belonging to 23 families were identified. 8 of them belonged to *Ascomycetes* and 70 to *Basidiomycetes*. Agaricaceae is the most crowded family (13 taxa) in the region. Tricholomataceae and Strophariaceae are the second and third crowded families which are represented with 12 and 11 taxa, respectively.

Thirty eight of 78 taxa are edible according to the literature. *Agaricus arvensis*, *A. bisporus*, *A. campestris* var. *campestris*, *Pleurotus eryngii*, *P. ostreatus* and *Tricholoma* sp. are collected and consumed locally. *A. campestris* and *Tricholoma* sp. are the two most popular mushrooms in the regions with names klawek and sung respectively. Usually the mushrooms collected from the soil are called as klawek and the ones collected on trees are called as sung. Twenty eight of the taxa are inedible while 12 are more or less poisonous.

All of the taxa are new for the district. *Omphalotus olivascens* var. *olivascens* H.E. Bigelow, O.K. Mill. and Thiers is determined as new record for Turkish macromycota.

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