The moss flora of Akdağ Mountain (Amasya, Turkey) was investigated. At the result of identifications of 1500 moss specimens, collected from the research area, 178 taxa belonging to 69 genera and 26 families were determined. Among them, 94 taxa are new for A3 grid square according to the Turkey grid system which was adopted by Henderson. The location data of Grimmia crinitoleucophaea Cardot and Barbula enderesii Garov. are the first records for Turkey, and Encalypta spathulata Müll. Hal., Schistidium dupretii (Thér.) W. A. Weber, Weissia condensa var. armata (Thér. & Trab.) M. J. Cano, Ros & J. Guerra, Tortella bambergeri (Schimp.), Barbula enderesii Garov., Hedwizia ciliata var. leucophaea Bruch & Schimp., and Campyliadelphus elodes (Lindb.) Kanda are recorded for the second time to the byrophyta of Turkey.

1. Introduction

Turkey, which is in the transition zone of three biogeographical regions, the Mediterranean, European-Siberian, and Irano-Turanian, is one of the richest countries between the Middle East and Europe in terms of biodiversity [1]. Unfortunately, knowledge of the Turkish bryoflora is still far from complete. To date, neither Turkish nor foreign bryologists have visited some regions, especially south-eastern Turkey. However, some recent additions with increasing research activities indicate that quite a number of new discoveries may be expected. In recent years, the studies on moss biodiversity of Turkey have increased and are enriched with many new findings. Some additions to the moss flora of Turkey in the last years include Didymodon tomaculosus (Blockeel) M. F. V. Corley [2], Schistidium sordidum Hagen. [3], Bryoerythrophyllum rubrum (Jur. ex Geh.) P. C. Chen [4], Seligeria donniana (Sm.) Müll. Hal. [5], Conardia compacta (Drumm. ex Mull. Hal.) H. Rob. and Didymodon icmadophilus (Schimp. ex Müll. Hal.) K. Saito [6], Seligeria trifaria (Brid.) Lindb. and Pseudotaxiphyllum elegans (Brid.) Z. Iwats. [7], Dicranella schreberiana (Hedw.) Dixon, Dircanodontium asperulum (Mitt.) Broth., and Campyliopus pyriformis (Schultz) Brid. [8], Grimmia anomala Schimp., Pohlia filum (Schimp.) Mårtensson, and Hookeria acutifolia Hook. & Grev. [9], Sphagnum contortum K. F. Schultz, Sphagnum fallax (H. Klinggr.) H. Klinggr., Sphagnum magellanicum Brid., Sphagnum rubellum Wilson [10], and Sphagnum molle Sull. [11].

Akdağ (Amasya), chosen as the study area, is located between Central Anatolia and the Black Sea region within the A3 square according to Henderson’s [12] grid system (Figures 1 and 2). Although Akdağ Mountain has been named as one of the most important flora regions of Turkey, the moss flora of the mountain has not been studied before.

2. Materials and Methods

Samples were collected from 37 stations containing different habitats (Table 1), between 2009 and 2011. All specimens were deposited in the Herbarium of Ankara University (ANK), Faculty of Science, Department of Biology, Ankara.

The specimens were identified using relevant literature [13–37].

3. Results and Discussion

The new records for the A3 grid square are indicated with a single asterisk, the taxa recorded from Turkey for the second time with double asterisks, and the first location data from Turkey with triple asterisks in the floristic list. Station
The bryofloristic list was arranged according to Hill et al. [38] and revised with the latest accepted names according to Ros et al. [39]:

(* ) Timmiales (M. Fleisch.) Ochyra

(* ) Timmiaceae Schimp.

(* ) 1. Timmia Hedw.

(* ) 1. Timmia bavarica Hessl. (20, 21)

Encalyptales Dixon

Encalyptaceae Schimp.

2. Encalypta Hedw.

2. Encalypta streptocarpa Hedw. (2, 16, 20, 21, 26, 33)

(* ) 3. E. intermedia Jur. (18)

(* ) 4. E. raptocarpa Schwägr. (15)

(*) 5. E. spathulata Müll. Hal. (34)

6. E. vulgaris Hedw. (26, 34)

Funariales M. Fleisch.

Funariaceae Schwägr.

3. Entosthodon Schwägr.

(*) 7. Entosthodon muhlenbergii (Turner) Fife (2)

4. Funaria Hedw.

8. Funaria hygrometrica Hedw. (1, 34)

Grimmiaceae M. Fleisch.

Grimmiaceae Arn.

5. Grimmia Hedw.

(*) 9. Grimmia crinitoleucophaea Cardot (10, 13, 15, 23, 34)

(*) 10. G. funalis (Schwägr.) Bruch & Schimp. (13)

(*) 11. G. laevigata (Brid.) Brid. (7, 8, 13, 31, 34)

(*) 12. G. montana Bruch & Schimp. (25)

(*) 13. G. orbicularis Bruch ex Wilson (3, 7, 10, 23, 33)

14. G. ovalis (Hedw.) Lindb. (25)

15. G. pulvinata (Hedw.) Sm. (1, 2, 3, 10, 15, 25, 32, 34, 35, 36)

16. G. tergestina Tomm. ex Bruch & Schimp. (8, 25, 31)

17. G. trichophylla Grev. (3, 5, 8, 36)

6. Schistidium Bruch & Schimp.

18. Schistidium apocarpum (Hedw.) Bruch & Schimp. (4, 13, 23, 35)

(*) 19. S. atrofuscum (Schimp.) Limpr. (16)

(*) 20. S. brunnescens Limpr. (17)

(*) 21. S. confertum (Funck) Bruch & Schimp. (3, 5, 20)

(*) 22. S. crassipilum H. H. Blom (17)

(*) 23. S. dupretii (Thér.) W. A. Weber (12)

(*) 24. S. elegantulum H. H. Blom (10, 12)

(*) 25. S. pruinosa (Wilson ex Schimp.) G. Roth (2)

Dicranales H. Philib. ex M. Fleisch

Fissidentaceae Schimp.

7. Fissidens Hedw.

26. Fissidens taxifolius Hedw. (12)

Ditrichaceae Limpr.

8. Ceratodon Brid.

27. Ceratodon purpureus (Hedw.) Brid. (6)

9. Distichium Bruch & Schimp.

28. Distichium capillaceum (Hedw.) Bruch & Schimp. (2)

10. Ditrichum Timm ex Hampe

29. Ditrichum flexicaule (Schwägr.) Hampe (16, 33)

Dicranaceae Schimp.

11. Dicranella (Müll. Hal.)

30. Dicranella howei Renaud & Cardot (19)

31. D. varia (Hedw.) Schimp. (2, 20, 23)

12. Dicranum (Müll. Hal.)

32. Dicranum majus Sm. (6)
Table 1: Vegetations and coordinate information of stations.

| Station | Altitude (m) | Coordinate          | Dominant vegetation                                      |
|---------|--------------|---------------------|----------------------------------------------------------|
| 1       | 498          | N 40° 41'.154'E/3°55'.5741' | Pinus nigra subsp. pallasiana                           |
| 2       | 872          | N 40° 41'.006'E/3°63'.992' | Quercus robur and Populus tremula                         |
| 3       | 845          | N 40° 53'.685'E/3°55'.4662' | Quercus robur and Pinus nigra subsp. pallasiana           |
| 4       | 1020         | N 40° 54'.252'E/3°55'.52544' | Fagus orientalis                                         |
| 5       | 870          | N 40° 54'.329'E/3°55'.58941' | Reeds and agricultural land                              |
| 6       | 1070         | N 40° 51'.936'E/3°63'.10093' | Pinus sylvestris and Fagus orientalis                    |
| 7       | 492          | N 40° 45'.577'E/3°63'.6736' | Pinus brutia                                              |
| 8       | 565          | N 40° 44'.784'E/3°59'.59210' | Pinus brutia and Quercus hartwissiana                    |
| 9       | 1330         | N 40° 46'.296'E/3°59'.59888' | Juniperus nana and Pinus nigra subsp. pallasiana         |
| 10      | 903          | N 40° 46'.289'E/3°63'.6915' | Juniperus nana and Pinus nigra subsp. pallasiana         |
| 11      | 1080         | N 40° 50'.550'E/3°57'.47292' | Quercus hartwissiana                                     |
| 12      | 1050         | N 40° 51'.909'E/3°57'.47648' | Pinus nigra subsp. pallasiana                           |
| 13      | 1100         | N 40° 50'.738'E/3°55'.50303' | Pinus nigra subsp. pallasiana                           |
| 14      | 1430         | N 40° 50'.507'E/3°55'.54296' | Pinus nigra subsp. pallasiana                           |
| 15      | 1240         | N 40° 48'.839'E/3°57'.7524'  | Pinus nigra subsp. pallasiana and Astragalus spp.        |
| 16      | 1180         | N 40° 47'.305'E/3°63'.2430'  | Pinus nigra subsp. pallasiana and Juniperus oxycedrus    |
| 17      | 1750         | N 40° 46'.322'E/3°54'.6672'  | High mountain meadows                                    |
| 18      | 2040         | N 40° 46'.786'E/3°55'.6621'  | Astragalus sp. and Acantholimon sp.                     |
| 19      | 227          | N 40° 45'.304'E/3°63'.19371' | Quercus hartwissiana                                     |
| 20      | 1060         | N 40° 48'.249'E/3°63'.9532'  | Cedrus libani, Pinus nigra subsp. pallasiana, and Fagus orientalis |
| 21      | 1230         | N 40° 48'.080'E/3°78'.876'  | Cedrus libani and Pinus nigra subsp. pallasiana         |
| 22      | 1550         | N 40° 47'.935'E/3°63'.6600'  | Pinus nigra subsp. pallasiana, Astragalus spp., and Euphorbia sp. |
| 23      | 1650         | N 40° 48'.358'E/3°63'.5430'  | Pinus nigra subsp. Pallasiana                           |
| 24      | 1320         | N 40° 47'.520'E/3°63'.7948'  | Pinus nigra subsp. pallasiana, Euphorbia sp., and Juniperus nana |
| 25      | 664          | N 40° 46'.043'E/3°63'.7207'  | Pinus brutia and Quercus hartwissiana                    |
| 26      | 1320         | N 40° 50'.614'E/3°53'.5924'  | Salix alba                                                |
| 27      | 1570         | N 40° 49'.876'E/3°55'.5180'  | Astragalus sp. and Acantholimon sp.                     |
| 28      | 712          | N 40° 51'.319'E/3°63'.9434'  | Pinus sylvestris and Fagus orientalis                    |
| 29      | 943          | N 40° 52'.037'E/3°63'.651'   | Carpinus betulus                                         |
| 30      | 1020         | N 40° 52'.331'E/3°55'.4886'  | Pinus sylvestris and Fagus orientalis                    |
| 31      | 483          | N 40° 45'.227'E/3°55'.36509' | Agricultural land                                        |
| 32      | 905          | N 40° 41'.896'E/3°63'.3180'  | Pinus brutia and Quercus hartwissiana                    |
| 33      | 1110         | N 40° 38'.948'E/3°55'.57307' | Pinus nigra subsp. pallasiana                           |
| 34      | 513          | N 40° 41'.498'E/3°55'.51422' | Pinus nigra subsp. pallasiana                           |
| 35      | 1520         | N 40° 52'.581'E/3°55'.3488'  | Pinus nigra subsp. pallasiana                           |
| 36      | 1210         | N 40° 45'.033'E/3°55'.5059'  | Quercus hartwissiana                                     |
| 37      | 1890         | N 40° 49'.850'E/3°63'.6666'  | Astragalus sp. and Acantholimon sp.                     |

(*) 33. D. polysetum Sw. ex anon. (12)
34. D. tauricum Sapjegin (9, 23, 27)
Pottiales M. Fleisch
Pottiaeae Schimp.

13. Eucladium Bruch & Schimp.
35. Eucladium verticillatum (With.) Bruch & Schimp. (1, 2)

14. Gymnostomum Nees & Hornsch.
(*) 36. Gymnostomum aegypti Sm. (2)
(*) 15. Gyroweisia Schimp.

(*) 37. Gyroweisia tenuis (Hedw.) Schimp. (2)

16. Tortella (Müll. Hal.) Limpr.

(*) (** 38. Tortella bambergeri (Schimp.) Broth. (22)
(*) 39. T. humilis (Hedw.) Jenn. (9, 12)
40. T. inclinata (R. Hedw.) Limpr. (16)
41. T. squarrosa (Brid.) Lindlb. (2)
42. T. tortuosa (Hedw.) Limpr (2, 6, 9, 12, 16, 20, 23, 37)

17. Trichostomum Bruch
43. Trichostomum brachydontium Bruch (20, 31)
18. Weissia Hedw.
   (∗) (∗∗) 44. Weissia condensa var. armata (Thér. & Trab.) M. J. Cano, Ros & J. Guerra (10)
   45. W. controversa var. controversa Hedw. (33)

19. Barbula Hedw.
   46. Barbula convoluta var. convoluta Hedw. (1, 12, 19)
   (∗) 47. B. convoluta var. sardoa Schimp. (1, 12)
   (∗) (∗∗) 48. B. enderesii Garov. (21)
   49. B. unguiculata Hedw. (1, 2, 5, 28)

20. Bryoerythrophyllum P. C. Chen
   50. Bryoerythrophyllum recurvirostrum (Hedw.) P. C. Chen (2, 26)
   (∗) 51. B. rubrum (Jur.ex Geh.) P. C. Chen (21)

21. Cinclidotus P. Beauv.
   52. Cinclidotus danubicus Schiffn. & Baumgarten (2)
   53. C. riparius (Host ex Brid.) Arn. (2)

22. Crossidium Jur.
   54. Crossidium squamiferum (Viv.) Jur. (28)

23. Didymodon Hedw.
   55. Didymodon acutus (Brid.) K. Saito (2, 7, 8)
   56. D. fallax (Hedw.) R. H. Zander (1)
   (∗) 57. D. ferrugineus (Schimp. ex Besch.) M. O. Hill (3, 12)
   (∗) 58. D. luridus Hornsch. (12, 33)
   59. D. nicholsonii Culm. (12, 33)
   (∗) 60. D. rigidulus Hedw. (8)
   (∗) 61. D. tomatulosus (Blockeel) M. F. V. Corley (20) published as Asia record (Canlı & Çetin, 2012)
   (∗) 62. D. tophaceus (Brid.) Lisa (1, 35)
   63. D. vinealis (Brid.) R. H. Zander (1, 21, 34)

24. Pseudocrossidium R. S. Williams
   (∗) 64. Pseudocrossidium hornschuchianum (Schultz) R. H. Zander (5, 34)
   (∗) 65. P. revolutum (Brid.) R. H. Zander (34)

25. Syntrichia Brid.
   (∗) 66. Syntrichia calcicola J. J. Amann (13, 22, 25)
   67. S. caninervis Mitt. (8)
   (∗) 68. S. laevipila Brid. (8)
   (∗) 69. S. montana Nees (1, 2, 8, 13)
   70. S. norvegica F. Weber (17)
   (∗) 71. S. ruralis var. ruraliformis (Besch.) Delogne (14, 26, 27, 33, 35)
   72. S. ruralis var. ruralis (Hedw.) F. Weber & D. Mohr (3, 17, 23, 27, 34, 36, 37)
   73. S. virescens (De Not.) Ochyra (2)

26. Tortula Hedw.
   (∗) 74. Tortula brevissima Schiffn. (2)
   (∗) 75. T. canescens Mont. (37)
   76. T. inermis (Brid.) Mont. (2, 10)
   (∗) 77. T. lindbergii Broth. (2)
   78. T. muralis Hedw. (2, 3, 15, 17, 21, 32)
   (∗) 79. T. schimperi M. J. Cano, O. Werner & J. Guerra (21, 23, 29, 37)
   80. T. subulata Hedw. (9, 12, 21, 37)
   (∗) 81. T. vahliana (Schultz) Mont. (11, 28)

Orthotrichales Dixon

Orthotrichaceae Arn.

27. Orthotrichum Hedw.
   82. Orthotrichum anomalum Hedw. (2, 8, 26, 33)
   (∗) 83. O. cupulatum Hoffm. ex Brid. (2, 9, 12)
   84. O. urnigerum Myrin (2, 33)
   85. O. diaphanum Schrad. ex Brid. (2, 33)
   86. O. pallens Bruch ex Brid. (2, 8, 11, 12)
   (∗) 87. O. rupestre Schlech. ex Schwägr. (36)
   88. O. affinis Schrad. ex Brid (2)
   (∗) 89. O. speciosum Nees (3, 11, 12)
   90. O. striatum Hedw. (3)

Hedwigiales Ochyra

(*) Hedwigiaeaeaeae Schimp.
   (∗) 28. Hedwigia P. Beauv.
   (∗) (∗∗) 91. Hedwigia ciliata var. leucophaea Bruch & Schimp. (3)

Bryales Limpr.

Bartramiaceae Schwägr.

29. Philonotis Brid.
   (∗) 92. Philonotis caespitosa Jur. (22)
   93. P. fontana (Hedw.) Brid. (15)
   (∗) 94. P. seriata Mitt. (17)

Bryaceae Schwägr.

30. Bryum Hedw.
   95. Bryum argenteum Hedw. (12, 17, 37)
   (∗) 96. B. funkii Schwägr. (13)
   (∗) 97. B. schleicheri DC. (22)
   (∗) 98. B. subapiculatum Hampe (20)
   (∗) 99. B. weigelii Spreng. (22)

31. Imbribyrum N. Pedersen

100. Imbribyrum alpinum Huds. ex With. (11)
   (∗) 101. I. mildæanum (Jur.) I. R. Spence (1)

32. Ptychostomum Hornsch.
102. Ptychostomum borreale (F. Weber & D. Mohr) Ochyra & Bednarek-Ochyra (2)

103. P. capillare (Hedw.) Holyoak & N. Pedersen (12, 20)

104. P. cernuum (Hedw.) Hornsch. (2)

105. P. creberrimum (Taylor) J. R. Spence & H. P. Ramsay (21)

106. Ptychostomum imbricatulum (Müll. Hal.) Holyoak & N. Pedersen (20)

107. P. moravicum (Podp.) Ros & Mazimpaka (8, 9, 20)

108. P. pallens (Sw.) J. R. Spence (1, 12, 15)

109. P. pseudotriquetrum (Hedw.) J. R. Spence & H. P. Ramsay (3)

Mielichhoferiaceae Schimp.

33. Pohlia Hedw.

110. P. cruda (Hedw.) Lindb. (20)

34. Mnium Hedw.

112. M. stellare Hedw. (20)

Cinclidiaceae Kindb.

35. Rhizommium (Broth.) T. J. Kop.

113. R. punctatum (Hedw.) T. J. Kop. (13)

Plagiomniaceae T. J. Kop.

36. Plagiomnium T. J. Kop.

114. P. affine (Blandow ex Funck) T. J. Kop. (12)

115. P. elatum (Bruch & Schimp.) T. J. Kop. (2)

116. P. medium (Bruch & Schimp.) T. J. Kop. (2)

Mniaceae Schwägr.

37. Fontinalis Hedw.

117. F. antipyretica subsp. antipyretica Hedw. (2)

118. F. antipyretica subsp. gracilis (Lindb.) Kindb. (2)

119. F. hypnoides var. hypnoides C. Hartm. (2)

Amblystegiaceae Kindb.

38. Amblystegium Schimp.

120. A. serpens (Hedw.) Schimp. (1, 2)

121. Campyliadelphus (Kindb.) R. S. Chopra

122. C. elodes (Lindb.) Kanda (1)

40. Cratoneuron (Sull.) Spruce

123. C. filicinum (Hedw.) Spruce (2, 13, 17, 21, 22)

41. Hygroamblystegium Loeske

I24. Hygroamblystegium flaviatile (Hedw.) Loeske (1)

42. Hygrohypnum Lindb.

128. H. luridum (Hedw.) Jenn. (22)

43. Palustriella Ochyra

129. P. commutata (Hedw.) Ochyra (2, 15, 37)

44. Pseudocampylium Vanderp. & Hedenäs

132. P. radicale (P. Beauv.) Schimp. (2, 4)

Leskeaceae Schimp.

45 Pseudoleskeella Kindb.

133. P. catenulata (Brid. ex Schrad.) Kindb (4)

46. Abietinella Kindb.

134. A. abietina var. abietina (Hedw.) M. Fleisch. (2)

135. A. hystricosa (Mitt.) Sakurai (3, 12)

47. Thuidium Schimp.

138. T. delicatulum (Hedw.) Schimp. (35)

Brachytheciaceae Schimp.

48. Pseudoscleropodium Schimp.

139. P. purum (Hedw.) M. Fleisch. (12)

49. Plasteurhynchium M. Fleisch. ex Broth.

140. P. striatum (Spruce) M. Fleisch. (13)

50. Rhynchostegium Schimp.

141. R. alopecuroides (Brid.) A. J. E. Sm. (13, 15)

142. R. confertum (Dicks.) Schimp. (31)

143. R. megapolitanum (Blandow ex F. Weber & D. Mohr) Schimp. (1)

144. R. riparioides (Hedw.) Cardot (1, 2)

51. Oxyrrhynchium (Schimp.) Warnst
145. Oxyrrhynchium hians (Hedw.) Loeske (13)
(*) 146. O. speciosum (Brid.) Warnst. (2, 12)
52. Kindbergia Ochyra
147. Kindbergia praelonga (Hedw.) Ochyra (9, 11, 12)
53. Sciuro-hypnum Hampe
(*) 148. Sciuro-hypnum latifolium Ignatov & Huttunen (2, 15, 17)
(*) 149. S. reflexum (Starke) Ignatov & Huttunen (11)
54. Brachythecium Schimp.
150. Brachythecium albicans (Hedw.) Schimp. (11, 19)
(*) 151. B. geheebii Milde (4, 11)
152. B. glareosum (Bruch ex Spruce) Schimp. (19)
153. B. rivulare Schimp. (2)
55. Eurhynchiastrum Ignatov & Huttunen
154. Eurhynchiastrum pulchellum (Hedw.) Ignatov & Huttunen (20, 23)
56. Brachytheciastrum Ignatov & Huttunen
155. Brachytheciastrum velutinum (Hedw.) Ignatov & Huttunen (20, 21)
57. Homalothecium Schimp.
(*) 156. Homalothecium aureum (Spruce) H. Rob. (5)
157. H. lutescens (Hedw.) H. Rob. (3, 12, 14, 28, 35)
158. H. philippeanum (Spruce) Schimp. (21, 30)
159. H. sericeum (Hedw.) Schimp. (1, 2, 13, 20, 23)
Hypnaceae Schimp.
58. Calliergonella Loeske
160. Calliergonella cuspidata (Hedw.) Loeske (15, 17)
(*) 59. Campylophyllum (Schimp.) M. Fleisch.
(*) 161. Campylophyllum sommerfeltii (Myrin) Hedénäs (2)
60. Homomallium (Schimp.) Loeske
162. Homomallium incurvatum (Schrad. ex Brid.) Loeske (4)
61. Hypnum Hedw.
163. Hypnum andoi A. J. E. Sm. (3, 6, 7, 11, 12, 20)
(*) 164. H. bambergeri Schimp. (14)
165. H. cupressiforme var. cupressiforme Hedw. (2, 20, 24)
166. H. cupressiforme var. lacunosum Brid. (9, 34)
(*) 167. H. cupressiforme var. subjulaceum Molendo (14)
168. H. imponens Hedw. (12)
(*) 169. H. recurvatum (Lindb. & Arnell) Kindb. (26)
(*) 170. H. revolutum (Mitt.) Lindb. (20)
62. Pylaisia Schimp.
171. Pylaisia polyantha (Hedw.) Schimp. (9)
(*) 63. Taxiphyllum M. Fleisch.
(*) 172. Taxiphyllum wisssgrillii (Garov.) Wijk & Margad. (20)
Pterigynandraceae Schimp.
64. Heterocladium Schimp.
(*) 173. Heterocladium dimorphum (Brid.) Schimp. (9)
65. Pterigynandrum Hedw.
174. Pterigynandrum filiforme Hedw. (20, 21, 22)
(*) Pylaisiadelphaceae Goffinet & W. R. Buck
(*) 66. Platgyrium Schimp.
(*) 175. Platgyrium repens (Brid.) Schimp. (20)
(*) Cryphaeaceae Schimp.
(*) 67. Cryphaea D. Mohr
(*) 176. Cryphaea heteromalla (Hedw.) D. Mohr (4)
Leucodontaceae Schimp.
68. Leucodon Schwägr.
177. Leucodon sciuroides (Hedw.) Schwägr. (4, 8, 20, 23, 30)
Neckeraceae Schimp.
69. Neckera Hedw.
(*) 178. Neckera menziesii Drumm. (23, 30)

A total of 178 taxa belonging to 69 genera and 26 families were determined following the identification of 1500 specimens collected from 37 localities between 2009 and 2011. Of these, 94 taxa are new for the A3 square. The location data of Grimmia crinitoleucophaea Cardot and Barbula enderesii Garov are the first records for Turkey, and Encalypta spatulata Müll. Hal., Schistidium dupretii (Thér.) W. A. Weber, Weissia condens var. armata (Thér. & Trab.) M. J. Cano, Ros & J. Guerra, Tortella bambergeri (Schimp.), Barbula enderesii Garov., Hedwigia ciliata var. leucophaea Bruch & Schimp., and Campyliadelphus elodes (Lindb.) Kanda are recorded for the second time.

Grimmia crinitoleucophaea Cardot. The basal marginal cells of the perichaetial and subperichaetial leaves are hyaline. Setae are very short and sporophytes are hidden between perichaetial leaves.

Encalypta spatulata Müll. Hal. Plants form an extensive mat and are covered with a mass of pale-colored calyptrae. The rostrum of the calyptra is short. Seta is red to dark red and quite fragile. Leaves are narrow and irregularly twisted, with a shiny dark-brown costa.

Barbula enderesii Garov. Plants have strongly differentiated convolute perichaetial leaves. Setae are mostly yellow and annulus is strongly differentiated. Leaves are strongly falcate with dense high papillae.

Schistidium dupretii (Thér.) W. A. Weber. Plants are small and form low tufts. The central strand is distinct and hair-point is
very short. Costa and leaf margins are smooth. Sporophytes are common. Peristome teeth are red and entire.

*Weissia condensa* var. *armata* (Thér. & Trab.) M. J. Cano, Ros & J. Guerra. Plants are almost 0.5 cm. Leaves are patent and margins are slightly incurved. Upper laminar cells are slightly papillose.

*Hedwigia ciliata* var. *leucophaea* Bruch & Schimp. Differs from *H. ciliata* var. *ciliata* in the length of the hair-point (7–33% versus 22–65% of leaf length), in having less strongly papillose hair-points, and in having more strongly recurved stem leaf margins.

*Tortella bambergeri* (Schimp.). The long, narrow leaves are slightly curved or almost straight when moist and dry to a contorted spiral. They have plane margins. The upper part of the leaf is very fragile and most stems in a tuft have only a few leaf tips present. Transverse section of stem has a distinct central strand.

*Campyliadelphus elodes* (Lindb.) Kanda. The plants are rather slender, with irregularly and rather loosely branched, dull green or yellow-green shoots. Shoots reach 4-5 cm or more in length. Leaves are acute and gradually tapering from base to apex. Leaf margins are obscurely denticulate above. Costa is long and single and is usually extending the apex or near the apex.

The dominant family in the study area is Pottiaceae (48 taxa). Other families with the highest number of taxa are, respectively, Brachytheciaceae (21), Grimmiaceae (17), and Bryaceae (15). The most species-rich genera recorded were *Grimmia* (9), *Didymodon* (9), *Tortula* (9), and *Orthotrichum* (9). Acrocarpous mosses constitute 65% and pleurocarpous-mosses constitute 35%.

The data from this survey was compared to studies from neighboring areas (Table 2) [40–43] and shows that the number of taxa of Pottiaceae family members, which display acrocarpous mosses in the Mediterranean, is higher than from other regions. These findings are similar to seed plant vegetation surveys of the area. This is due to the wet and mild climate, large number of microhabitats and enclaves, and different ecological conditions present in the region.

It is hoped that further studies will contribute more species to the knowledge of moss flora of Turkey and that this study will be useful as a guide for future research.

## Table 2: The comparison of the taxa distribution according to the families.

|                   | Amasya Akdağ | Cankırı Gürgenli Mountain | Ilgaz Yenice Forests | Ilgaz Mountain National Park | Çankırı Eldivan Mountain |
|-------------------|--------------|---------------------------|----------------------|-----------------------------|--------------------------|
| **Pottiaceae**    | 27           | 16,9                      | 15,6                 | 13,7                        | 23,3                     |
| **Brachytheciaceae** | 11,6        | 20,5                      | 12,1                 | 13,7                        | 18,3                     |
| **Grimmiaceae**   | 9,4          | 7,2                       | 10                   | 6,4                         | 8,3                      |

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