

A REPORT ON THE MOSS FLORA OF NORTHERN IRAN

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Following 29 species of mosses are reported from Alborz mountains and adjacent regions as new records to Iran:

Garckea comosa, *Oreas martiana*, *Grimmia olneyi*, *Pohlia annotina*, *P. flexuosa*, *Brachymenium nepalense*, *Bryum atrovirens*, *B. uliginosum*, *Plagiomnium undulatum*, *Philonotis capillaris*, *P. hastata*, *P. uncinata*, *Orthotrichum alpestre*, *Anomodon acutifolius*, *Leucodon sinensis*, *Amblystegium riparium*, *A. tenax*, *Homalothecium megaptilum*, *H. nilgheriense*, *Brachythecium acuminatum*, *Bryhnia novae-angliae*, *Rhynchostegium riparioides*, *Rhynchostegiella menadensis*, *R. tenella*, *Eurhynchium hians*, *E. riparioides*, *Brotherella harveyana*, *Hypnum macrogynum*, *Ectropothecium cyperoides*.

Collecting localities and distribution of the species in the world are mentioned.

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گزارشی از فلور خزّه ای شمال ایران

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تعداد ۲۹ گونه گیاهی خزّه از کوههای البرز و نواحی مجاور آن برای اولین بار از ایران گزارش داده می شود. این گونه ها عبارتند از:

Garckea comosa, *Oreas martiana*, *Grimmia olneyi*, *Pohlia annotina*, *P. flexuosa*, *Brachymerium nepalense*, *Bryum atrovirens*, *B. uliginosum*, *Plagiomnium undulatum*, *Philonotis capillaris*, *P. hastata*, *P. uncinata*, *Orthotrichum alpestre*, *Anomodon acutifolius*, *Leucodon sinensis*, *Amblystegium riparium*, *A. tenax*, *Homalothecium megaptilum*, *H. nilgheriense*, *Brachythecium acuminatum*, *Bryhnia novae-angliae*, *Rhyncostegium riparioides*, *Rhyncostegiella menadensis*, *R. tenella*, *Eurhynchium hians*, *E. riparioides*, *Brotherella harveyana*, *Hypnum macrogynum*, *Ectropothecium cyperoides*.

محل جمع آوری نمونه ها و پراکندگی گونه ها در دنیا توضیح داده می شود.

INTRODUCTION

The newly recorded species of this report are collected by the senior author from the Alborz mountain range which is situated in northern parts of Iran, covering mainly Gilan, Mazandaran and partly Tehran provinces. The altitude of the surveyed area varies between -10 to 2000 metres.

The temperature in the hills of these areas during summer (July- August), usually ranges between 20 to 30°C and in winter (January- February) falls to -20°C. These areas experience an average annual precipitation of 385 mm with an average relative atmospheric humidity of 40-75%. The influence of humid Caspian winds even during summer promotes dense moss vegetation in these valleys. Generally, in winter, the southern face of these mountains remain covered with snow.

The forests of Alborz mountains are of mixed deciduous type which provide hospitable conditions for the luxuriant growth of epiphytic / pendent as well as terrestrial mosses.

There are only a few reports about the mosses of Iran (Frey & Probst 1973, 1974a, b; Frey & Kürschner 1977, 1979, 1983)

during the last two decades. Recently, the senior author (Shirzadian, 1989) also recorded nine species in 8 genera and 8 families of mosses from Alborz mountains.

The voucher specimens are deposited in the Herbarium of Department of Botany, Panjab University, Chandigarh, India (PAN). The surveyed localities are shown in map 1.

This paper is extracted from a thesis entitled "Systematic Study of Some Iranian Mosses", submitted to the Panjab University, Chandigarh, India by the senior author for the degree of Ph. D. in 1993, 220 pp., 71 pls.

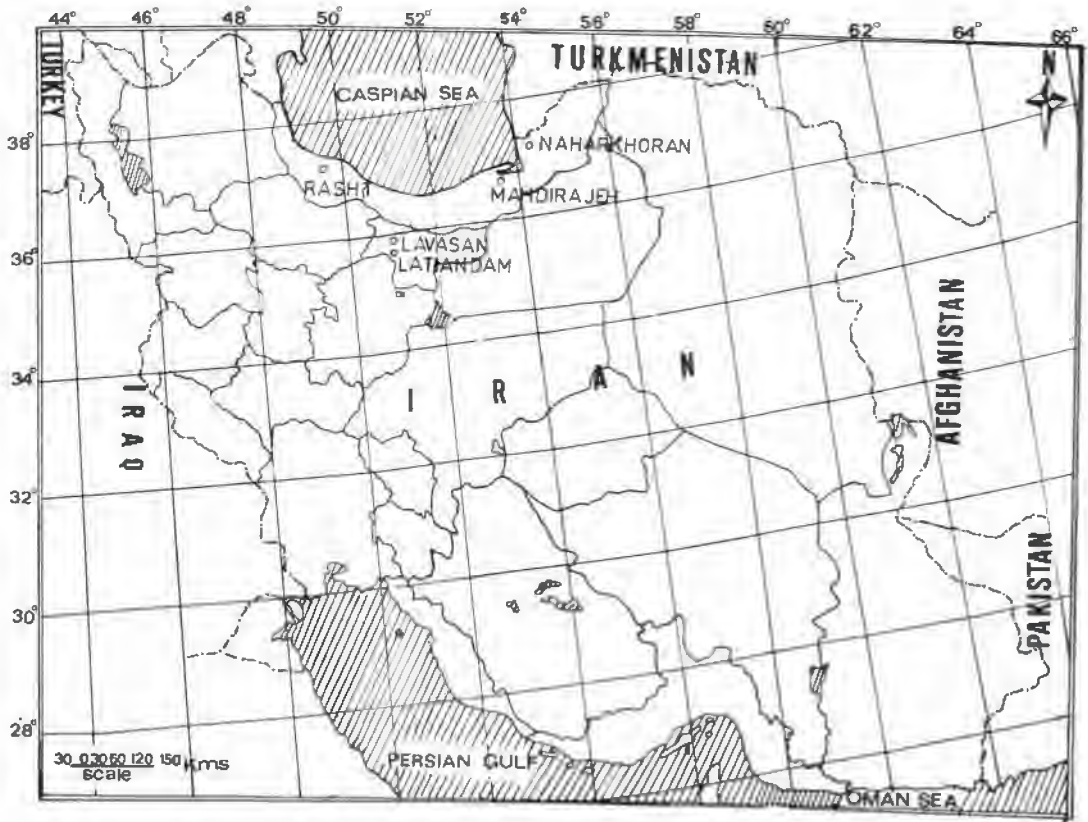
LIST OF SPECIES

Ditrichaceae

Garckea comosa (Doz. & Molk.) Wijk & Marg. [*G. phascoides* (Hook.) C. Muell.].

Tehran: Lavasan, 2000 m, sub-montane forest, on sandy soil, June 1987, Shirzadian 4300.

Distribution: Iran, E. Nepal, Bhutan, India, Sri Lanka, Myanmar, Thailand, China, Vietnam, Malaysia, Sumatra, Java, Philippines, New Guinea, Japan, Australia, Oceania, Madagascar and Panama.



Map 1. Surveyed localities of mosses in Iran.- modified after Geeta-Shenasi, map No. 105, Tehran, Iran.

Dicranaceae

Oreas martiana (Hopp. & Hornsch.) Brid.
 Tehran: Lavasan, 2000 m, sub-montane forest, on soil, June 1987, Shirzadian 4302.
 Distribution: Iran, India, C. Alps, Japan and Alaska.

Grimmiaceae

Grimmia olneyi Sull.

Tehran: Lavasan, 2000 m, sub-montane forest, on bare rocks, June 1987, Shirzadian 4316.

Distribution: Iran and U.S.A.

Bryaceae

Pohlia annotina (Hedw.) Lindb.

Mazandaran: Gorgan, Naharkhoran, 500 m, sub-montane forest, on soil, June 1984, Shirzadian 4319.

Distribution: Iran, India, E. Nepal, China, Siberia, Korea, Japan, Turkey, N. Africa, Europe and N. America.

P. flexuosa Hook.

Tehran: Lavasan, 2000 m, sub-montane forest, on moist soil (in crevices), June 1987, Shirzadian 4320.

Distribution: Iran, India, E. Nepal, Sri Lanka, Sumatra, Java, Celebes, Philippines, Taiwan, China, Korea, Japan, Riukiu, Hawaii and N. C. & S. America.

Brachymenium nepalense Hook. ex Schwaegr.

Gilan: Rasht, -10 m, lowland forest, on tree trunk, June 1987, Shirzadian 4323.

Distribution: Iran, E. Nepal, India, Sri Lanka, Myanmar, Thailand, N. & S. Vietnam, Sumatra, Java, Borneo, Celebes, New Guinea, Philippines, Taiwan, China, Japan, Vladivostok, C. Africa and Mauritius Is.

Bryum atrovirens Vill. ex Brid.

Tehran: Lavasan, 2000 m, sub-montane forest, on moist soil, June 1987, Shirzadian 4324.

Distribution: Iran, India, Taiwan, Japan,

Siberia, Caucasus, Europe, N. & S. Africa, N. & S. America and Oceania.

B. uliginosum (Brid.) Bruch & Schimp. in B.S.G.

Tehran: Lavasan, 2000 m, sub-montane forest, on very damp rocks, June 1987, Shirzadian 4327.

Distribution: Iran, India, Korea, Manchuria, Europe and N. & S. America.

Mniaceae

Plagiomnium undulatum (Hedw.) T. Kop.

Mazandaran: Behshahr, Mahdirajeh, 1200 m, montane forest, on clayey soil, June 1984, Shirzadian 4329.

Distribution: Iran, India (Himalayas), S. E. Tibet, W. Asia, E. Asia (?), Kamchatka, Japan, Syria, Caucasus, Europe, N. Africa and Madagascar.

Bartramiaceae

Philonotis capillaris Lindb. in Hartm.

Tehran: Lavasan, 2000 m, sub-montane forest, on moist soil (in crevices), June 1987, Shirzadian 4330.

Distribution: Iran, Turkey, N. & C. Europe, Greenland, U.S.A., Alaska and Canada.

P. hastata (Dub.) Wijk & Marg.

Tehran: Lavasan, 2000m, sub-montane forest, on soil (in crevices), June 1987, Shirzadian 4332.

Distribution: Iran, India, Thailand, Sumatra, Java, Borneo, Celebes, Philippines, Taiwan, Japan, Mid-W. Asia, Africa, S. America, Australia and Hawaii.

P. uncinata (Schwaegr.) Brid.

Tehran: Lavasan, 2000 m, sub-montane forest, on rocks (under running water), June 1987, Shirzadian 4333.

Distribution: Iran, U.S.A., C. America and Northern S. America.

Orthotrichaceae

Orthotrichum alpestre Hornsch. in B.S.G.

Gilan: Rasht, -10 m, lowland forest, on dry rocks and stones, July 1991, Shirzadian 4334.

Distribution: Iran, Kashmir, Siberia, N. & C. Europe, U.S.A. and New Zealand.

Anomodontaceae

Anomodon acutifolius Mitt.

Mazandaran: Behshahr, Mahdirajeh, 1200 m, montane forest, on wet soil, June 1984, Shirzadian 4335.

Distribution: Iran, N. India, E. Nepal,

Bhutan and Japan.

Leucodontaceae

Leucodon sinensis Thér.

Mazandaran: Gorgan, Naharkhoran, 500 m, sub-montane forest, hanging on tree branches, June 1984, Shirzadian 4338.

Distribution: Iran, Bhutan, India and S.W. China.

Amblystegiaceae

Amblystegium riparium (Hedw.) Bruch & Schimp. in B.S.G.

Tehran: Lavasan, 2000 m, sub-montane forest, on moist soil (in crevices) and tree bases, June 1987, Shirzadian 4344.

Distribution: Iran, Japan, Europe, N. & S. Africa, Australia, Kerguelen, Canada, Newfoundland, U.S.A. and S. America.

A. tenax (Hedw.) C. Jens.

Mazandaran: Behshahr, Mahdirajeh, 1200 m, montane forest, on damp clayey soil, June 1984, Shirzadian 4346.

Distribution: Iran, Caucasus, N. Asia, Japan, Europe, Macaronesia, U.S.A., Newfoundland and throughout of the N.W. Pacific.

Brachytheciaceae

Homalothecium megaptilum (Sull.) Robins.

Mazandaran: Behshahr, Mahdirajeh, 1200 m, montane forest, on tree trunk, June 1984, Shirzadian 4348.

Distribution: Iran, Canada and U.S.A.

H. nilgheriense (Mont.) Robins.

Mazandaran: Gorgan, Naharkhoran, 500 m, sub-montane forest, on clayey soil, June 1984, Shirzadian 4349.

Distribution: Iran, E. Nepal, India, Sri Lanka, Korea and Japan.

Brachythecium acuminatum (Hedw.) Aust.

Tehran: Lavasan, 2000 m, sub-montane forest, on moist soil (near stream), June 1987, Shirzadian 4351.

Distribution: Iran and U.S.A.

Bryhnia novae-angliae (Sull. & Lesq.)

Grout.

Tehran: Lavasan, 2000 m, sub-montane forest, under running water, June 1987, Shirzadian 4355.

Distribution: Iran, E. Nepal, India, Siberia, Japan, Europe, U.S.A., S. Alaska, Newfoundland and Canada.

Rhynchostegium riparioides (Hedw.) Card.

Tehran: Lavasan, 2000 m, sub-montane forest, under running water, June 1987, Shirzadian 4356.

Distribution: Iran, Afghanistan, E. Nepal, Bhutan, India, China, W. Tibet,

Manchuria, Siberia, C. Asia, Japan, Sinai, Caucasus, Canary Is., Morocco, Algeria, C. Africa, Europe, Canada, U.S.A., Mexico and Argentina.

Rhynchostegiella menadensis (Lac.) Bartr.

Mazandaran: Gorgan, Naharkhoran, 500 m, sub-montane forest, on soil, June 1984, Shirzadian 4358.

Distribution: Iran, India, Thailand, Java, Celebes, Philippines and New Hebrides.

R. tenella (Dicks.) Limpr.

Gilan: Rasht, -10 m, lowland forest, on tree trunk, June 1987, Shirzadian 4359.

Distribution: Iran, Himalayan origin, spreading to Indo-Malaysia, Sino-Japan, Africa and Europe.

Eurhynchium hians (Hedw.) Lac.

Tehran: Lavasan, 2000 m, sub-montane forest, in wet rock crevices, June 1987, Shirzadian 4360

Distribution: Iran, E. Nepal, Bhutan, India, China, W. Tibet, Siberia, Caucasus, Europe and N. America.

E. riparioides (Hedw.) Richs.

Tehran: near Latian Dam, 1800 m, montane forest, under running water, June 1984, Shirzadian 4362.

Distribution: Iran, Afghanistan, E. Nepal, Bhutan, India, W. Tibet, China,

Manchuria, Siberia, C. Asia, Japan, Sinai, Caucasus, Canary Is., Morocco, Algeria, C. Africa, Europe, Canada, U.S.A., Mexico and Argentina.

Sematophyllaceae

Brotherella harveyana (Mitt.) Dix.

Gilan: Rasht, -10 m, lowland forest, on tree trunk, June 1988, Shirzadian 4368.

Distribution: Iran and E. Nepal.

Hypnaceae

Hypnum macrogynum Besch.

Mazandaran: Behshahr, Mahdirajeh, 1200 m, montane forest, on wet clayey soil, June 1984, Shirzadian 4369.

Distribution: Iran, E. Nepal, Myanmar, S. China and Taiwan.

Ectropothecium cyperoides (Hook.) Jaeg.

Gilan: Rasht, -10 m, lowland forest, on bark of pear trees, June 1988, Shirzadian 4370.

Distribution: Iran, E. Nepal, India, Sumatra, Java, Celebes and Oceanic Islands.

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