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New plant records for Khorassan Province, Iran

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Abstract

120 vascular plant taxa of 94 genera in 38 families are recorded for the first time from Khorassan province, Iran. 115 taxa are angiosperms (84 dicots and 31 monocots), two taxa are gymnosperms, and three taxa are pteridophytes. 15 species are endemic to the Flora Iranica area, and eight are endemic to Iran. All specimens recorded here are deposited in FUMH or FAR, and/or in W. This contribution is a continuation of the recently published paper on this province (GHAHREMANINEJAD & al. 2005).

Key Words: Flora; Iran, Khorassan province, new records.

Zusammenfassung

120 Taxa der Gefäßpflanzen werden erstmals für die Provinz Khorassan, Iran, gemeldet. Davon gehören 115 zu den Angiospermen, 2 zu den Gymnospermen und 3 zu den Farnen. 15 Taxa sind endemisch innerhalb des Flora Iranica Gebietes, 8 sind endemisch im Iran. Alle zitierten Belege sind in FUMH oder FAR, und/oder in W. Dieser Beitrag ist eine Ergänzung zu den bereits früher publizierten Neufunden (GHAHREMANINEJAD & al. 2005).

Introduction

In this paper 120 species, subspecies and varieties are recorded for the first time from Khorassan province, Iran. In this province nearly more than 2000 species of flowering plants from 103 families are growing (numbers based on the Flora Iranica treatments, and GHAREMANINEJAD & al. 2005). Khorassan province is located in NE Iran, covering an area of 313,335 km². It extends from 30°21' to 38°17' N and from 55°28' to 61°20' E. Recently 240 plant taxa have been recorded first time for this province (GHAREMANINEJAD & al. 2005). Recent field research and critical evaluation of existing specimens resulted in new findings for this area.

Material and Methods

The study has been carried out with material from the herbarium of Ferdowsi University, Mashhad [FUMH], and new collections from forestry areas of north Khorassan, that are deposited in both herbaria, of Tarbiat Moallem University [FAR]

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and FUMH. The new records are based on 220 specimens. In order to ensure the completeness the records have been checked in the herbarium of the Natural History Museum Vienna [W] with its rich Flora Iranica collections. Thus some additional localities could be added to the list. All recorded specimens are deposited in FUMH, FAR, and/or W.

For each taxon the specimens of Khorassan province are cited, additionally the distribution in Iran (based on the Flora Iranica treatments) and further comments are given

In Flora Iranica some taxa have been wrongly recorded from Khorassan - in reality the cited localities are in Golestan (Mazandaran or Gorgan), Semnan, or Sistan provinces. These neighbouring provinces are situated to the north-west, west, and south of Khorassan. Such taxa are recorded here with localities inside Khorassan.

In the following list the order of entries is alphabetical for families and taxa within the families. For each taxon the locality, the altitude, the date and the collector's name are presented. Localities within Khorassan are sequenced from NW to SE, according to Fig. 1. The list consists of 120 specific, subspecific and varietal taxa, belonging to 94 genera and 38 families. 115 taxa are angiosperms (84 dicots and 31 monocots), 2 are gymnosperms, and 3 are pteridophytes. 15 species are endemic to the Flora Iranica area, and 8 are endemic to Iran.

The families with the largest recorded numbers of new taxa are Asteraceae (43), Brassicaceae (30), Apiaceae (22), Fabaceae (17), Boraginaceae (14), Lamiaceae (10), Rosaceae (10), Orchidaceae (6) and Poaceae (6).

For the 120 recorded taxa 220 plant specimens are cited. Among these specimens, 91 are recorded from NW, 41 from N, 28 from NE, 2 from W, 16 from C, 7 from E, 22 from SE, and 13 from SW of the province (fig. 1). They have been collected during the years (1948 -) 1967 - 2005. The altitudes of the localities are 250 - 2500 m. The collectors are: Aellen, Akhiani, Akhundzadeh, Aydani, Ayatollahi, Edmondson, Emadzadeh, Faghihnia, Ghahremaninejad, Gholami, Ghorashialhosseini, Halalzadeh, Hojjat, Joharchi, Mahvan, Memariani, Nasseh, Raafei, Rashed, Rechinger, Rezaei, Vahabzadeh, Zangooei, Zargari, and Zokaie.

PTERIDOPHYTES

Equisetaceae MICHX. ex DC.

Ref.: PARSA 1978.

Equisetum telmateia EHRH., Hannover.Mag.18:287 (1783)

Khorassan:NW: Bojnord, Darkash, between Nargesli and Ghartal, 1570 m, 20.7.2004, JOHARCHI& F 35706 [FUMH, FAR].

Distribution in Iran: N, E.

Aspleniaceae METT. ex A.B.FRANK

Ref.: PARSA 1978.

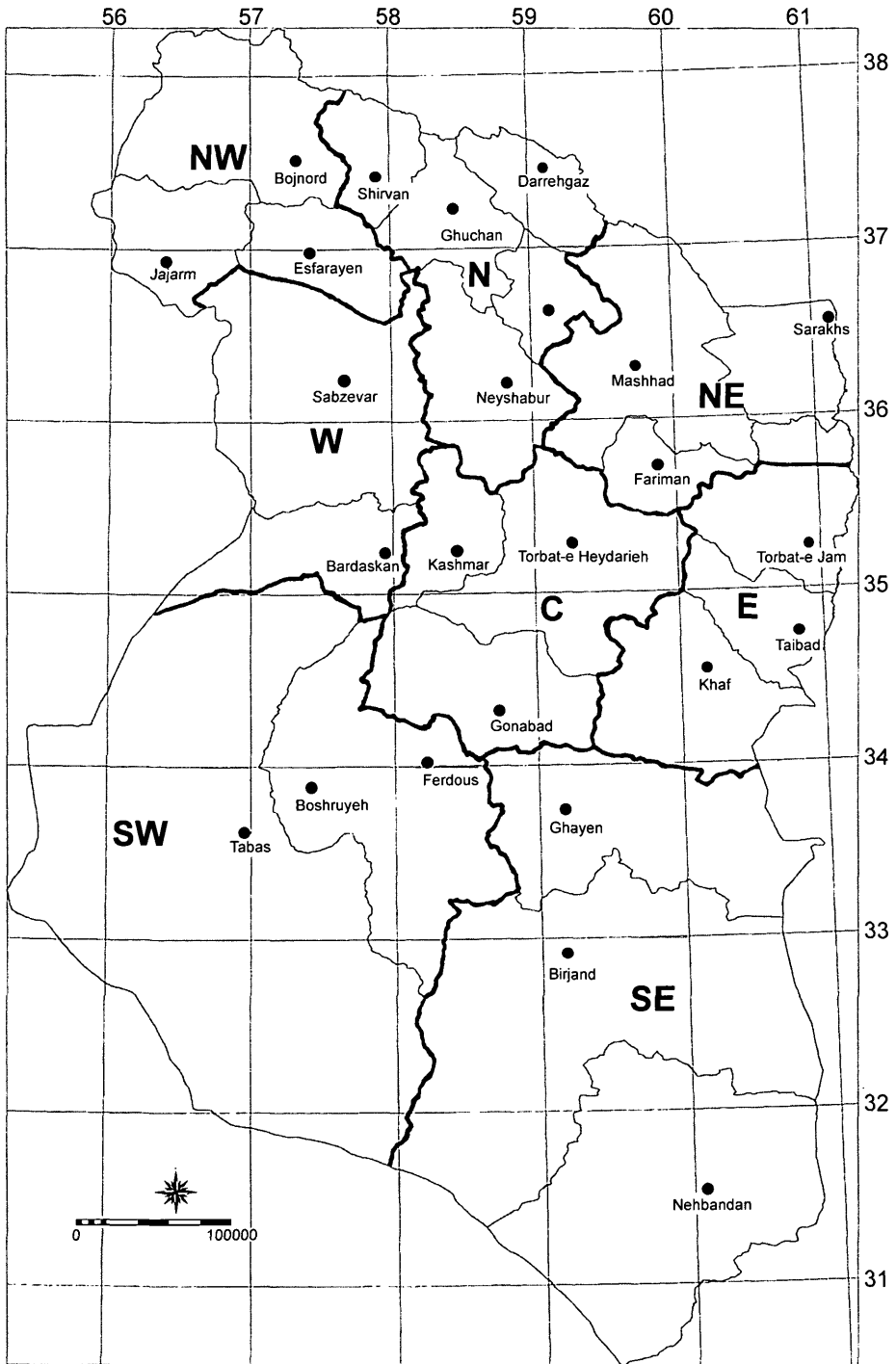


Figure 1: Province of Khorassan. Localities given in the floristic catalogue are listed from NW to SE.

***Asplenium ruta-muraria* L., Sp. Pl. 1081 (1753).**

Khorassan: NW: Bojnord, Darkash, Kanimokhtar Mts. 2100 m, 20.6.2004, JOHARCHI & AYDANI 35602 [FUMH, FAR]. – Between Haver and Kalateh Zamansoofi, 1400-1600 m, 24.8.2003, JOHARCHI 35176 [FUMH]. – N: Chenaran, Akhlamad fall, 1500 m, 6.7.1982, ZOKAEI 1457 [FUMH]. – NE: Hezar masjed Mts. Sistan forest, 2100 m, 10.6.1990, JOHARCHI & FAGHIHNI 18754 [FUMH].

Distribution in Iran: N, E.

***Asplenium trichomanes* L., Sp. Pl. 1080 (1753).**

Khorassan: NW: Bojnord, Darkash, Kanimokhtar Mts. 2100 m, 20.6.2004, JOHARCHI & AYDANI 35593 [FUMH, FAR]. – NE: Mashhad, Kang valley, 1500-1600 m, 1.6.2005, JOHARCHI & ZANGOUEI 36511 [FUMH].

Distribution in Iran: N, E.

GYMNOSPERMS**Cupressaceae RICH ex BARTL.**

Ref.: RIEDL 1968, ASSADI 1998a.

***Juniperus communis* L., Sp. Pl. 1040 (1753), ssp. *hemisphaerica* (PRESL) NYMAN, Consp. 67 (1881).**

Khorassan: NW: Bojnord, between Havar and Kalateh Zamansoofi, 1400-1600 m, 24.8.2003, JOHARCHI 35170 [FUMH]. – Bojnord, between Darkash and Gollak, Ghara-Aghaj 1415 m, 29.3.2005, MEMARIANI & ZANGOUEI 35800 [FUMH].

Distribution in Iran: N, W, E. In Iran only this subspecies can be found.

***Juniperus sabina* L., Sp. Pl. 1039 (1753).**

Khorassan: NW: Bojnord, Darkash, Kanimokhtar 2100 m, 20.6.2004, JOHARCHI & AYDANI 35592 [FUMH, FAR]. – Bojnord, between Darkash and Gollak, 1153 m, 29.3.2005, MEMARIANI & ZANGOUEI 35797 [FUMH].

Distribution in Iran: N, W, E.

ANGIOSPERMS**MONOCOTYLEDONES****Alliaceae J. AGARDH**

Ref.: WENDELBO 1971.

***Allium sarawschanicum* REGEL, Acta Horti petrop. 3, 2: 244 (1875).**

Khorassan: N: (Gulul Sarani Protected Region): Kopet Dag: In altiplanitie (“dasht”), ad custodem, substr. calc., 2100-2300 m, c. 37°46' N, 58°08' E, 12.-13.6.1975, RECHINGER 53357 [W 1988-10793]. – Kopet Dag range, 45 km NNE of Shirvan,

Kuh-e Alam, c. 6 km N of Cheshmeh-e Gabri, shady limestone Gorge in Juniper zone, flowers light blue, 1.7.1973, EDMONSON 1206 [W, E].- (Gulul Sarani Protected Region): Kopet Dagh: In altiplanitie (“dasht”), ad custodem, substr. calc., 2100-2300 m, c. 37°46' N, 58°08' E, 12.-13.6.1975, RECHINGER 53354 [W 1988-10791]. Between Darrehgaz and Chenaran, Gharaghat valley, 2500 m, 28.5.2001, JOHARCHI 33584 [FUMH]. – Neyshabur, Bar fall, 2000 m, 29.6.2003, ZANGOEOEI 34896 [FUMH]. – NE: Mashhad, between Azghad and Maj, 2000 m, 17.5. 2001, JOHARCHI 33570 [FUMH]. – E: Torbat-e Jam, Bezd Mt. 1600 m, 9.5.1996, FAGHIH Nia & ZANGOEOEI 26771 [FUMH]. – Torbat-e Jam, Miansara Mt. 1300 m, 23.4.2001, JOHARCHI 34039 [FUMH]. – Torbat-e Jam, Kordian, 1500-1600m, 1.5.1985, AYATOLLAHI 12460 [FUMH]. – Between Khaf and Roshtkhar, Pir-e yahoo, 2000 m, 30.4.1985, AYATOLLAHI 12400 [FMUH]. – C: Gonabad, Senu, Nakhou valley, 1600 m, 25.4.1991, FAGHIH Nia & ZANGOEOEI 19610 [FMUH]. – SW: Tabas, Ozbagu, Alimorad mine, 22.4.1986, AYATOLLAHI & ZANGOEOEI 13868 [FUMH].

Distribution in Iran: N, E. All the mentioned specimens from W herbarium have been determined by the author of the treatment in Flora Iranica (✠ P. Wendelbo) at 1977. These specimens have been collected after the publishing of that volume.

Cyperaceae Juss.

Ref.: KUKKONEN 1998.

Carex halleriana ASSO, Syn. Strip. Aragon.: 133 (1779).

Khorassan: NW: Bojnord, between, Haver and Barfandil 1700-1900 m, 6.6.2004, JOHARCHI & AYDANI 35490 [FUMH, FAR].

Distribution in Iran: N, E.

Carex melanostachya M.B. ex WILLD., Sp. Pl. Plant.4:299 (1805).

Khorassan: NW: Bojnord, between Darkash and Haver, 1380 m, 23.5.2004, AYDANI 35420-b [FUMH, FAR].

Distribution in Iran: N, W, S, E.

Liliaceae DUMORT.

Ref.: RECHINGER & al. 1990

Gagea tenera PASCHER, Lotos N.F. 24: 128 (1904)

Khorassan: NE. Mashhad, Moghan, 1600 m, 7.4.1988, RASHED & ZANGOEOEI 15937 [FUMH]. – Mashhad, Khajeh-Morad Mt., 1300 m, 4.3.1973, ZARGARI s.n. [FUMH].

Distribution in Iran: E, C.

Gagea vegeta VVED., Bot. Mat. Herb. Inst. Bot. Akad. Nauk. Uzbeksk. SSR, 4-12: 238 (1946).

Khorassan: NW: 62 km E Loveh, 37°24' N, 55°45' E, versus Dasht, 37°17' N, 56°00' E, 1200 m, 19.4.1967, RECHINGER 33147 [W].- NE: 40 Km from Mashhad to Torbat-e Heydarieh, 1000 m, 8.4.1984, AYATOLLAHI & JOHARCHI 10702 [FUMH].

Distribution in Iran: N, E, C.

Tulipa montana LINDL., Bot. Reg. 13: tab. 1106 (1827), var. ***chrysantha*** (BOISS.) WENDELBO, Fl. Iranica 165: 90 (1990).

Khorassan: NW: Bojnord, between Darkash and Haver, 1400 m, 11.4.2004, AYDANI & GHAHREMANINEJAD 35270 [FUMH, FAR].

Distribution in Iran: N, W, S, E, C. This species includes two varieties. Variety *montana*, endemic in Iran, was earlier recorded from Khorassan. Variety *chrysantha* grows in Iran and Iraq and is first time recorded for Khorassan.

Orchidaceae JUSS.

Ref.: RENZ 1978.

Anacamptis pyramidalis (L.) RICH., Mém. Mus. Hist. Nat. Paris 4: 55 (1818).

Khorassan: NW: Bojnord, Darkash, between Kashigorbah and Takht-e Pari, 1500-1600 m, 20.5.2004, AYDANI & GHAHREMANINEJAD 35404 [FUMH, FAR].

Distribution in Iran: N, W, E.

Cephalanthera longifolia (L.) FRITSCH, Österr. Bot. Zeitschr. 38: 81 (1888).

Khorassan: NW: Bojnord, Darkash, between Kanibid and Kanimokhtar, 1600-2000 m, 20.6.2004, AYDANI & GHAHREMANINEJAD 35584 [FUMH, FAR].

Distribution in Iran: N, W, E.

Cephalanthera rubra (L.) RICH., Mém. Mus. Hist. Nat. Paris 4: 60 (1818).

Khorassan: NW: Bojnord, between Haver and Barfandil, 1700-1900 m, 6.6.2004, JOHARCHI & AYDANI 35487 [FUMH, FAR].

Distribution in Iran: N, W, E, C.

Epipactis helleborine (L.) CRANTZ, Stirp. Austr., ed. 2: 467 (1769).

Khorassan: NW: Bojnord, Darkash, Nargesli toward Ghartal, 1580 m, 20.7.2004, JOHARCHI & AYDANI 35711 [FUMH, FAR].

Distribution in Iran: N, W, E.

Epipactis microphylla (EHRH.) SW., Acta. Acad. Holm. 232 (1800).

Khorassan: NW: Bojnord, Darkash, Bidkhan spring 1550 m, 7.8.2004, AYDANI & GHAHREMANINEJAD 35734 [FUMH, FAR].

Distribution in Iran: N, E

Limodorum abortivum (L.) SW., Nov. Act. Soc. Sci. Upsal. 6: 60 (1799).

Khorassan: NW: Bojnord, Darkash, between Kanibid and Kanimokhtar, Quercus forest, 1700 m, 20.6.2004, JOHARCHI & AYDANI 35571 [FUMH, FAR].

Distribution in Iran: N, W, S, E

Poaceae BARNHART

Ref.: BOR 1970.

Agrostis gigantea ROTH, Fl. Germ. 1:31 (1788).

Khorassan: N: Chenaran, Akhlamad fall, 1550 m, 6.8.1984, AYATOLLAHI & ZAN-

GOOEI 11512 [FUMH]. – NE: North of Mashhad, Kalat-e Naderi, Gharasou, 1150 m, 25.7.1987, JOHARCHI & ZANGOUEI 15648 [FUMH]. – C: Torbat-e Heydarieh, Rudmajan fall, 1700 m, 9.7.2003, JOHARCHI 34943 [FUMH].

Distribution in Iran: N, S, E, C.

Alopecurus myosuroides HUDS., Fl. Angl. 23 (1762), var. *myosuroides*

Khorassan: C: NW Torbat-e Heydarieh, Bors Mts., 2000 m, 12.6.1991, FAGHIH NIA & ZANGOUEI 20698 [FUMH]. – SW: In argillosis salsas ad radices montium 8 km NW Aliabad, 33°59' N, 56°54' E, versus Asfak, 34°05' N, 57°06' E, 800 m, 12.5.1975, RECHINGER 51673 [W 1980-03730].

Distribution in Iran: N, W, S, E, C. This species has two varieties in Iran. The record of var. *myosuroides* is the first record from Khorassan.

Aristida adscensionis L., Sp. Pl. 82 (1753), var. *adscensionis*

Khorassan: NE: Mashhad, Pardis-e Daneshgah, 1050 m, 1.12.1984, AYATOLLAHI s.n. [FUMH].

Distribution in Iran: W, S, E. Three varieties of this species can be found in Iran. This is the first record of this species from Khorassan.

Arrhenatherum elatius (L.) P.BEAUUV. ex J. & C.PRESL, Fl. Cechia 17 (1819).

Khorassan: N: Between Chenaran and Darrehgaz, Zo-ye Kharab, 2400 m, 18.6.2000, HOJJAT & ZANGOUEI 32924 [FUMH].

Distribution in Iran: C, E.

Avena eriantha DURIU in DUCH., Rev. Bot. 1: 360 (1845).

Khorassan: NW: Bojnord, between Haver and Barfandil, 1700-1900 m, 6.6.2004, JOHARCHI & AYDANI 35484 [FUMH, FAR].

Distribution in Iran: N, W, S, E.

Brachypodium distachyon (L.) P.BEAUUV., Ess. Agrost. 101, 155 (1812).

Khorassan: NW: Bojnord, between Ghorrimeydan and Dashtak, 650-700 m, 28.4.2001, JOHARCHI & ZANGOUEI 33388 [FUMH]. – Bojnord, Emamdarreh, 1000 m, 17.4.2001, JOHARCHI & ZANGOUEI 33286 [FUMH]. – SW: Tabas, Chirook Mts., 1400 m, 19.4.1987, AYATOLLAHI & ZANGOUEI 15276 [FUMH].

Distribution in Iran: N, W, S, E.

Brachypodium sylvaticum (HUDS.) P.BEAUUV., Ess. Agrost. 101: 155 (1812).

Khorassan: N: Neyshabur, Bujan Mts. 1750 m, 22.6.1994, ZANGOUEI 24237 [FUMH]. – Neyshabur, Derakht-e Joz valley, 1650-1900 m, 12.8.2003, JOHARCHI 35161 [FUMH].

Distribution in Iran: N, W, S, E, C. This species is recorded from Khorassan in Flora Iranica. But the locality (KOELZ 16698) belongs to Golestan (Gorgan) province, not Khorassan.

Bromus intermedius GUSS., Fl. Sic. Prodr. 1: 114 (1827).

Khorassan: NE: Mashhad, Kang valley, 1500-1600 m, 1.6.2005, JOHARCHI 36517 [FUMH].

Distribution in Iran: N, W, E.

***Calamagrostis epigejos* (L.) ROTH, Ten. Fl. Germ. 1: 34 (1788).**

Khorassan: NW:Bojnord, Gifan, Misino Mts.2000 m, June 1981, VAHABZADEH 10V [FUMH]. – N: Neyshabur, Garineh Mts. 1900 m, 3.7.1996, FAGHIHNIA & ZANGOOEI 27755 [FUMH].

Distribution in Iran: N, W, E, C. This species is recorded from Khorassan in Flora Iranica. But the locality (KOELZ 16721) belongs to Golestan (Gorgan) province, not Khorassan.

***Centropodia forsskalii* (VAHL) COPE, Kew Bull. 37: 657-659 (1983).**

Khorassan: SW: Tabas, between Kamarmehdi desert and Fleurine mine, 1050 m, 27.4.2004, FAGHIHNIA & ZANGOOEI 35317c [FUMH].- In argenosis mobilibus 25 km SE Boshruyeh, 33°54' N, 37°29' E, 900 m, 11.5.1975, RECHINGER 51652 [W 1979-07028].

Distribution in Iran: C, E.

***Cymbopogon olivieri* (BOISS.) BOR, Notes Roy. Bot. Gard. Edinb. 25: 62 (1963).**

Khorassan: SE: Ghayen, Zirkooh, Hematabad, 980m, 29.5.1995, RAAFEI & ZANGOOEI 25658 [FUMH]. – Ghayen, Zirkooh, Mohammadabad, 1200m, 21.5.1998, RAAFEI & ZANGOOEI. 30845 [FUMH]. – Nehbandan, between Hajat Mine to Bazarche Marzi, 1000m, 30.4.1996, RAAFEI & ZANGOOEI 26493 [FUMH]. – SW: 24km. north of Tabas towards Boshrouyeh, 1000m, 21.4.1986, AYATOLLAHI & ZANGOOEI 13802 [FUMH]. – Tabas towards Yazd, Kamar- Mahdi desert, Saveh spring, 1144m, 26.4.2004, FAGHIHNIA & ZANGOOEI 35295 [FUMH]. – Tabas, Kharv, 1150m, 29.4.1981, ZOKAEI 652 [FUMH].

Distribution in Iran: W, S, E.

***Hordeum bulbosum* L., Amoen. Acad. 4: 304 (1759).**

Khorassan: NW: Esfarayen, Roein, 1650 m, 18.7.1984 AYATOLLAHI & REZAEI 11453 [FUMH]. – N: Darrehgaz, Dodanlu, 600 m, 28.5.1982, ZOKAEI 1355[FUMH]. – Darrehgaz, Chehelmir, 935 m, 11.5.2005, MEMARIANI & ZANGOOEI 35358[FUMH]. – Darrehgaz, Chehelmir, 800 m, 28.5.1982, ZOKAEI 1365 [FUMH]. – Cheneran, Radkan, Baro Mts. 1500 m, 12.5.1985, AYATOLLAHI & ZANGOOEI12742 [FUMH]. – NE: Mashhad, Talghor, 1550 m, 18.5. 1985, AYATOLLAHI & JOHARCHI 13030 [FUMH]. – Between Mashhad and Kalat-e Naderi, Taherabad, 1000 m, 20.5.1985, AYATOLLAHI & JOHARCHI 13136 [FUMH].

Distribution in Iran: N, W, S, E, C.

***Imperata cylindrica* (L.) P.BEAUUV., Ess. Agrost.: 165 (1812).**

Khorassan:C: Eight Km North of Kashmar, 1400 m, 11.5.1983, RASHED & REZAEI 10174 [FUMH].- In saxosis montium 13 km N Kashmar versus Rivash, 1300-1400 m, 4.5.1975, RECHINGER 51197 [W 1979-12136].

Distribution in Iran: N, W, S, E, C. This species is recorded from "E: Sistan" in Flora Iranica. But Sistan belongs to "Sistan va Baluchestan province", not Khorassan.

***Stipa capensis* THUNB., Prodr. pl. cap.: 19 (1794).**

Khorassan: SW:Tabas to Boshruyeh Km. 45, 22.4.1986, AYATOLLAHI & ZANGOOEI 13849 [FUMH]. – Boshruyeh to Tabas Km. 88, 21.4.1986, AYATOLLAHI & ZANGOOEI 13791 [FUMH]. – Tabas, Kalshaneh, 1000 m, 8.4.1985, AYATOLLAHI &

REZAEI 11853[FUMH]. – SE: Nehbandan, Khoshareh, 1150 m, 12.4.1990, FAGHIH-NIA & ZANGOOEI 18167 [FUMH].

Distribution in Iran: W, S, E.

Stipa capillata L., Sp. Pl. ed. 2: 116 (1762).

Khorassan: N: Ghuchan to Darrehgaz, Aghmazar hills, 1850 m, 30.6.1987, JOHARCHI & ZANGOOIE 15439 [FUMH].

Distribution in Iran: C, E.

Stipa pulcherrima C.KOCH, Linnaea 21: 440 (1848).

Khorassan: NW: Bojnord, Darkash, between Kanibid and Kanimokhtar, 1600-2000 m, 20.6.2004, JOHARCHI & AYDANI 35588 [FUMH, FAR].

Distribution in Iran: N, W, E.

Potamogetonaceae DUMORT.

Ref.: DANDY 1971.

Potamogeton filiformis PERS., Syn. Pl. 1:152 (1805).

Khorassan: NE: Sarakhs, Bazangan Lake, 800 m, 18.8.1994, AKHANI & ZANGOOEI 24577 [FUMH].

Distribution in Iran: N, E.

Ruppiaceae HUTCH.

Ref.: DANDY 1971

Ruppia maritima L., Sp. Pl. 127 (1753).

Khorassan: NE: Sarakhs, Bazangan Lake, 860m, 22.8.2002, GHOLAMI 34347a [FUMH].

Distribution in Iran: W, S, E.

Ruscaceae SPRENG. ex HUTCH.

Ref.: RECHINGER & al. 1990.

Polygonatum orientale DESF., Ann. Mus. Hist. Nat. 9: 50 (1807).

Khorassan: NW: Bojnord, south of Haver, Barfandil, 2100 m, 6.6.2004, JOHARCHI & AYDANI 35511 [FUMH, FAR]. – Bojnord, Darkash, between Zo-ye Khooni and Nargesli, 1330 m, 20.7.2004, JOHARCHI & AYDANI 35694 [FUMH, FAR].

Distribution in Iran: N, W, E, C.

DICOTYLEDONES

Aceraceae JUSS.

Ref: MURRAY & RECHINGER 1969.

Acer cappadocicum GLED., Schrift. Ges. Naturf. Freunde Berlin 6: 116, tab. 2 (1785).

Khorassan: NW: Bojnord, Darkash, between Kanibid and Kanimokhtar, 1600-2000 m,

20.6.2004, JOHARCHI & AYDANI 35581 [FUMH, FAR]. – Bojnord, Darkash, between Haver and Kalate-ye Zamansoofi, 1400-1600 m, 24.8.2003, JOHARCHI 35167 [FUMH].

Distribution in Iran: N, W, E. This species is recorded from Khorassan in Flora Iranica. But the locality (KOELZ 16723) belongs to Golestan province, not to Khorassan.

Apiaceae LINDL.

Ref.: ALAVA & al. 1987.

Cervaria cervariifolia (C.A.MEY.) PIMENOV, Fl. Iranica no. 162: 452 (1978).

Khorassan: NW: Bojnord, between Ashkhane and Chakhmaghlu, 1600 m, 28.6.2000, ZANGOUEI 33017 [FUME].

Distribution in Iran: N, W, E, C.

Laser trilobum (L.) BORKH., Botaniker (Halle) 13-15: 246(1795).

Khorassan: NW: Bojnord, Darkash, Nargesli toward Ghartal, 1570 m, 20.7.2004, JOHARCHI & AYDANI 35702 [FUMH, FAR].

Distribution in Iran: N, W, E.

Asteraceae DUMORT.

Ref: RECHINGER 1971, RECHINGER & al. 1977, DITTRICH & al. 1979, 1980, 1989, GEORGIADOU & al. 1979, GRIERSON & RECHINGER 1981, PODLECH 1986.

Achillea millefolium L., Sp. Pl. 899 (1753), **ssp. *millefolium***.

Khorassan: N: Neyshabur, Bar fall, 2000 m, 29.6.2003 ZANGOUEI 34876 [FUMH].

Distribution in Iran: N, W, E, C. In the Flora Iranica region this species includes three varieties, of which two were recorded from Iran. This is the first record for this species from Khorassan.

Bombycilaena erecta (L.) SMOLJAN., Not. Syst. Leningrad 17: 450 (1955).

Khorassan: NW: Bojnord, Darkash toward Nargesli 1200 m, 20.7.2003, AKHUNDZADEH 32231b [FUMH, FAR].

Distribution in Iran: N, E. This genus is a new record for the flora of Khorassan. The species is very rare and only known from one small locality up to now.

Centaurea cheiranthifolia WILLD., Phytogr. 1:12, tab. 7 (1794), **var. *purpurascens*** (DC.) WAGENITZ, Notes, Roy. Bot. Gard. Edinb. 33: 230 (1974).

Khorassan: Bojnord, between Haver and Barfandil, 1700-1900 m, 6.6.2004, JOHARCHI & AYDANI 35509 [FUMH, FAR]. – Darkash, Kanimokhtar, 2000-2100 m, 20.6.2004, JOHARCHI & AYDANI 35623 [FUMH, FAR].

Distribution in Iran: W, E. This species contains two varieties in Iran.

Cirsium echinus (M.B.) HAND.-MAZZ., Ann. Nat. Hofmus. Wien 23: 197 (1909).

Khorassan: NW: Bojnord, Saluk Mts. 2400 m, 11.7.1994, ZANGOUEI 24463 [FUMH].

Distribution in Iran: N, W, E, C.

Cirsium lappaceum M.B., Fl. Tour. Cauc. 3: 558 (1819), **var. *tomentosum*** BOISS. Fl. Or. 3: 531 (1875).

Khorassan: NE: Mashhad, Kalat-e Naderi, West of Ortokand, 1360m, 16.10.2005, MEMARIANI & ZANGOUEI 37052 [FUMH].

Distribution in Iran: N, W, E, C. This species includes two varieties from Iran.

Echinops koelzii RECH. f., Oesterr. Akad. Wiss., Anz. Math.-Nat. Kl. 89: 259 (1951).

Khorassan: NW: Bojnord, Darkash, Nargesli toward Ghartal, 1570 m, 20.7.2004, JOHARCHI & AYDANI 35715 [FUMH, FAR].

Distribution in Iran: N, W, E, C.

Hieracium woronowianum ZAHN, Jard. Bot. Tiflis 12: 3 (1908).

Khorassan: NW: Bojnord, Darkash, Nargesli toward Ghartal, 1570 m, 20.7.2004, JOHARCHI & AYDANI 35710 [FUMH, FAR].

Distribution in Iran: N, W, E, C.

Hieracium prenanthoides VILL., Prosp. Pl. Dauph.: 35 (1779).

Khorassan: NW: Bojnord, Darkash, Ghartal valley, 1700 m, 29.7.2004, AYDANI & GHahremaninejad 35730 [FUMH, FAR].

Distribution in Iran: N, W, E, C.

Inula britannica L., Sp. Pl.: 882 (1753).

Khorassan: NW: Bojnord, Darkash, Gollak toward Cheshmeh, 1300 m, 29.7.2004, AYDANI & GHahremaninejad 35731 [FUMH, FAR].

Distribution in Iran: N, W, S, E, C.

Launaea korovinii (POPOV) POPOV ex PAVL., Fl. Centr. Kasachstan 3:360 (1938).

Khorassan: SE: Ghayen, Between Ahangaran-e bala and Ahangaran-e paeen, 1050 m, 7.6.1993, JOHARCHI & ZANGOUEI 23293 [FUMH].

Distribution in Iran: E, C.

Mulgedium tataricum (L.) DC., Prodr. 7, 1: 248 (1838).

Khorassan: NE: Kalat-e Naderi, West of Ortokand, 1360 m, 23.7.2002, JOHARCHI & NASSEH 34320 [FUMH]. – SE: Birjand, between Merk and Tazian, 1900 m, 14.6.1994, ZANGOUEI 25002 [FUMH].

Distribution in Iran: N, W, E, C.

Silybum marianum (L.) GAERTN., Fruct. Sem. Pl. 2: 378 (1791).

Khorassan: NW: Bojnord, between Pishghala and Aghmazar, 600 m, 29.4.2001, JOHARCHI & ZANGOUEI 33423 [FUMH].

Distribution in Iran: N, W, S, E.

Tanacetum budjnurdense (RECH.f.) TZVELEV, Fl. URSS. 26: 325 (1961).

Khorassan: NW: Bojnord, South of Haver, 1500 m, 6.6.2004, JOHARCHI & AYDANI 35473 [FUMH, FAR]. – Bojnord, spring of Ghatlgah valley, 1516 m, 19.7.2004, JOHARCHI & EMADZADEH 35686 [FUMH]. – Bojnord, Darkash, Kanimokhtar, 2000-2100 m, 20.6.2005, JOHARCHI & AYDANI 35622 [FUMH, FAR].

Distribution in Iran: N, E (endemic). This species is recorded from Khorassan in Flora Iranica, but the type locality (RECHINGER 1880) belongs to Golestan province, not Khorassan.

Taraxacum bessarabicum (HORNEB.) HAND.-MAZZ., Mon. Tar: 26 (1907).

Khorassan: N: Darrehgaz, Chehelmir, 850 m, 25.7.1990, FAGHIH Nia & ZANGOOEI 18999 [FUMH]. – Chenaran, Boghmaej, 1650 m, 18.8.1986, AYATOLLAHI & ZANGOOEI 14948 [FUMH].

Distribution in Iran: N, W, S, E, C.

Taraxacum microcephaloides V.S., Notes Roy. Bot. Gard. Edinb. 33, 2: 263 (1974).

Khorassan: N: Chenaran: Cheshmeh Gilas, 1090 m, 27.11.1985, AYATOLLAHI & JOHARCHI 13638 [FUMH].

Distribution in Iran: W, S, E, C.

Taraxacum montanum (C.A.MEY.) DC., Prodr. 7: 154 (1838).

Khorassan: N: Chenaran, Merichgan, Zo-ye Goroh, 1400 m, 5.8.1992, FAGHIH Nia & ZANGOOEI 22399 [FUMH] between Golmakan and Cheshmeh Sabz, 1850 m, 30.7.1991, FAGHIH Nia & ZANGOOEI 20981 [FUMH]. – Neyshabur, Deracht-e Jouz valley, 1650-1900 m, 12.8.2003, JOHARCHI 35154, 35155 [FUMH]. – NE: Mashhad Zoshk valley, 2000 m, 21.6.1980, GHORASHIAL HOSSEINI 320G [FUMH].

Distribution in Iran: N, W, E, C.

Taraxacum nevskii JUZ., Acta Inst. Bot. Acad. Sci. URSS. Ser. 1, 4:293 (1937)

Khorassan: E: Torbat-e Jam, Cheshmehgol to Banitak, Km. 25, 1450 m, 14.4.1993, FAGHIH Nia & ZANGOOEI 22740 [FUMH].

Distribution in Iran: W, N, E.

Boraginaceae JUSS.

Ref.: RIEDL 1967, KHATAMSAZ 2002.

Myosotis anomala RIEDL, Flora Iranica 48: 266 (1967).

Khorassan: NW: Bojnord, Darkash, Kanimokhtar, 2000-2100m, 20.6.2004, JOHARCHI & AYDANI 35614 [FUMH, FAR].

Distribution in Iran: N, NW, E (endemic).

Myosotis asiatica SCHISCHK. & SERG., KRYLOW, Fl. Zap. Sibir. 9: 2272 (1937).

Khorassan: NW: Bojnord, Aladagh Mts. Barfandil-e Haver, 2100m, 6.6.2004, JOHARCHI & AYDANI 35512 [FUMH, FAR].

Distribution in Iran: N, NW, E.

Brassicaceae BURNETT

Ref.: HEDGE & RECHINGER 1968.

Arabidopsis thaliana (L.) HEYNH. in HOLL & HEYNH., Fl. Sachs. 1: 538 (1842).

Khorassan: N: Chenaran, Akhlamad fall, 1550 m, 16.5.2001, JOHARCHI & ZANGOOEI 33559 [FUMH].

Distribution in Iran: N, W, E.

Arabis sagittata (BERTOL.) DC. in LAM. & DC., Fl. Fr. ed. 3, 5: 592 (1815).

Khorassan: NW: Bojnord, Darkash, Kanimokhtar, 2000-2100 m, 20.6.2004, JOHARCHI & AYDANI 35629 [FUMH, FAR].

Distribution in Iran: N, E, C.

Erysimum repandum L., Demonstr. Pl. (1753).

Khorassan: N: Kashmar, Rivash, 1600m, 4.5.1975, IRANSHAHR [IRAN].* – NW: Sharleq, 1000-1200 m, 37,20°N, 56,20°E, 20.4.1995, AKHANI [LI].* – Bojnord, between Anabai and Goinik 1150 m, 29.4.2001, JOHARCHI & ZANGOUEI 33470 & 33496 [FUMH]. – C: Prope Rivash, 35°25' N 58°25' E, in agris incultis humidis, 1650 m, 4.5.1975, RECHINGER 51247 [W 1978-08924].

Distribution in Iran: N, W, S, E, C.

Hirschfeldia incana (L.) LAGR.-FOSS., Fl. Tarn. Gar.: 19 (1847).

Khorassan: C: Bejestan, 5Km. from Miandehi to Marandiz, 800 m, 13.5.1997, HOJJAT & ZANGOUEI 28404 [FUMH].

Distribution in Iran: N, W, S, E.

Isatis gaubae BORNH., Feddes Repert. 50: 374 (1941).

Khorassan: NW: Bojnurd, between Haver and Barfandil, 1700-1900 m, 6.6.2004, JOHARCHI & AYDANI 35506 [FUMH, FAR]. – Between Haver and Darkash, 1300 m, 30.4.2001, JOHARCHI & ZANGOUEI 33510 [FUMH]. – N: (Gulul Sarani Protected Region): Kopet Dagh: In altiplanitie ("dash") ad custodelam, substr. calc., 2100-2300 m, c. 37°46' N, 58°08' E, 12.-13.6.1975, RECHINGER 53416.

Distribution in Iran: N, E, C (endemic).

Thlaspi kotschyianum BOISS. & HOHEN. in BOISS., Diag. pl. Or. Nov. Ser. 1, 8: 39 (1849).

Khorassan: NW: Bojnord, between Haver and Barfandil, 1700-1900 m, 6.6.2004, JOHARCHI & AYDANI 35502 [FAR, FUME].

Distribution in Iran: N, W, E, C.

Campanulaceae JUSS.

Ref.: RECHINGER & SCHIMAN-CZEIKA 1965.

Campanula rapunculus L., Sp. Pl. 164 (1753), *ssp. lambertiana* (DC.) RECH.f., Fl. Iranica 13: 34 (1965).

Khorassan; NW; Bojnord, Darkash, between Kanibid and Kanimokhtar, Quercus forest, 1700 m, 20.6.2004, JOHARCHI & AYDANI 35573 [FUMH, FAR].

Distribution in Iran: N, W, E, C. This species includes two subspecies in the Flora Iranica area. Only *ssp. lambertiana* has been found in Iran and is here recorded for the first time.

* These two records have been provided by A. Polatschek (Vienna).

Legousia falcata (TEN.) FRITSCH, Mitt. Nat. Ver. Univ. Wien 5: 100 (1907).

Khorassan: NW: Bojnord, Darkash, 1500 m, 20.5.2004, AYDANI & GHAREMA-NINEJAD 35403 [FUMH, FAR].

Distribution in Iran: W, S, E.

Caryophyllaceae Juss.

Ref.: RECHINGER & al. 1988.

Gypsophila virgata BOISS., Diagn. Pl. Or. Nov. Ser. 1, 1: 13 (1843).

Khorassan: NE: Mashhad, between Shahre-e Toos and Zak, 1044m, 11.7.2005, JOHARCHI & ZANGOUEI 36872 [FUMH].

Distribution in Iran: W, E.

Holosteum umbellatum L., Sp. Pl. 88 (1753).

Khorassan: C: Kashmar towards Rivash, km. 15, 1450m, 10.4.2002, JOHARCHI 33961 [FUMH].

Distribution in Iran: N, W, S, E, C.

Minuartia lineata BORNH., Beih. Bot. Centrbl. 27, 2: 318 (1910).

Khorassan: NW: South- western of Bojnord, Salok Mt., 2400m, 11.7.1994, ZANGOUEI 24482 [FUMH]. – South- western of Bojnord, Salok Mt., 2250m, 27.6.1995, RAAFEI & ZANGOUEI 26032 [FUMH]. – Bojnord, Darkash, Kanimokhtar, 2100m, 20.6.2004, JOHARCHI & AYDANI 35608 [FUMH, FAR].

Distribution in Iran: N, E, C. (endemic Talish & Iran)

Saponaria bodeana BOISS., Fl. Or. 1: 527 (1867).

Khorassan: NW: Bojnord, between Haver and Shughan, Aghbaba, 1800 m, 3.7.2000, FAGHIHNIA & ZANGOUEI 33061 [FUMH]. – Bojnord, Sout of Haver, 1500 m, 6.6.2004, JOHARCHI & AYDANI 35470 [FUMH, FAR].

Distribution in Iran: N, E.

Saponaria viscosa C.A.MEY., Verz. Pfl. Cauc.: 212 (1831).

Khorassan: NE: Mashhad, Kang valley, 1500-1600 m, 1.6.2005, JOHARCHI & ZANGOUEI 36501 [FUMH].

Distribution in Iran: N, W, E, C.

Silene apetala WILLD., Sp. Pl. ed. 4, 2: 703 (1799).

Khorassan: C: Gonabad, Shoorab, Ghal-e Dokhtar Mts., 1300 m, 27.4.1993, FAGHIHNIA & ZANGOUEI 22942 [FUMH]. – E: Khaf, Mahabad, 1050 m, 5.5.1986, AYATOLLAHI & ZANGOUEI 14125 [FUMH].

Distribution in Iran: N, W, S, E.

Silene conica L., Sp. Pl.: 418 (1753).

Khorassan: N: Darrehgaz, between Shekarab and Tandoureh, 1650- 2000 m, 8.6.1997, RAAFEI & ZANGOUEI 29083 [FUMH]. – Darrehgaz,, between Shekarab and

Chehelmir, 1000- 2300 m, 27.5.1991, JOHARCHI & ZANGOUEI 20511 [FUMH]. – N-Darrehgaz, Hatam-Ghala, 300 m, 16.5.1993, JOHARCHI & ZANGOUEI 23130 [FUMH]. – Darrehgaz, Southern slopes of Allahakbar Pass, 1750-1850 M, 4.6.1981, GHORASHIALHOSSEINI 724G [FUMH]. – Chenaran, Freyzi, Gooshkhar Valley, 1616 m, 21.5.2005, MEMARIANI & ZANGOUEI 36346[FUMH]. – NE: Mashhad, Goojki 1350 m, 19.5.1981, GHORASHIALHOSSEINI 253G [FUMH]. – Kalat-Naderi, Jalilabad to Kalat, Km.5, 1000 m, 19.5.1981 GHORASHIALHOSSEINI 329G [FUMH].

Distribution in Iran: N, E.

Silene coniflora NEES ex OTTH., Prodr. 1: 371 (1824).

Khorassan: NE: Sarakhs towards Sangar, km21, 300m, 8.4.1987, AYATOLLAHI 15058 [FUMH]. – SW: Ferdows towards Gonabad, km10, 1230m, 19.4.1983, HALALZADEH & MAHVAN 10025 [FUMH]. – SE: Shoukatabad prope Birjand, 1400 m, 24.5.1948, RECHINGER 4161 [W 1994-06897].

Distribution in Iran: W, S, E, C. RECHINGER 4161 is not mentioned in the Flora Iranica treatment (RECHINGER & al. 1988).

Silene coronaria (L.) CLAIRV., Man. Herbor. Susse 145 (1811).

Khorassan: NW: Bojnord, Darkash, between Zoye Khooni and Nargesli, 1550 m, 20.7.2004, JOHARCHI & AYDANI 35696-b [FUMH, FAR].

Distribution in Iran: N, E.

Silene noctiflora L. Sp. Pl.: 419 (1753).

Khorassan: N: Shirvan, Zoeram, 1500 m, 7.6.1998, FAGHIHIA & ZANGOUEI 31326 [FUMH]. – Chenaran, Fereyzi, Gooshkhar valley, 1616 m, 12.7.2005, MEMARIANI & ZANGOUEI 36882 [FUMH]. – Mashhad, Azghad, 1600 m, 23.6.1994, ZANGOUEI 24262[FUMH]. – NE: Mashhad, Kordinah, 1832 m, 7.6.2005, JOHARCHI & ZANGOUEI 36536 [FUMH].

Distribution in Iran: N, W, E, C (endemic Iraq & Iran).

Celastraceae R.Br.

Ref.: RECHINGER 1969.

Evonymus velutina (C.A.MEY.) FISCH. & C.A.MEY., Bull. Soc. Nat. Mosc. 11: 337 (1838).

Khorassan: NW: Bojnord, Sharlegh, 850 m, 15.8.1984, AYATOLLAHI & ZANGOUEI 11597 [FUMH]. – Bojnord, between Darkash and Haver, 1300 m, 9.7.2001, JOHARCHI 33867 [FUMH]. – Bojnord, Darkash, Zo-ye Khooni, 1330 m, 20.7.2004, JOHARCHI & AYDANI 35696-a [FUMH, FAR].

Distribution in Iran: N, E. This species is recorded from Khorassan in Flora Iranica, but the localities (GAUBA 818, RECHINGER 1888) belong to Golestan province, not Khorassan.

Chenopodiaceae VENT.

Ref.: HEDGE & al. 1997, ASSADI 2001.

Salsola kernerii (WOL.) BOTSCH., Bot. Journ. 54 (7): 990 (1969).

Khorassan: NW: West of Esfarayen, Chaharborj valley, 1200m, 17.6.1998, RAAFEI & ZANGOUEI 31679 [FUMH].

Distribution in Iran: N, E, C.

Convolvulaceae JUSS.

Ref.: RECHINGER 1963, NOWROOZI 2002

Convolvulus gonocladus BOISS., Diagn. Ser. 1, 7: 22 (1846).

Khorassan: SE: 25Km. from Nehbandan to Chaharfarsakh, 1400 m, 29.4.1997, RAAFEI & ZANGOUEI 28361 [FUMH].

Distribution in Iran: S, E. (endemic)

Dipsacaceae JUSS.

Ref.: RECHINGER & LACK 1991, JAMZAD 1993.

Scabiosa flavida BOISS. & HAUSSKN. in BOISS., Fl. Or. 3: 141 (1875).

Khorassan: N: Chenaran, between Abghad and Freyzi, 1400-1500 m, 16.8.2005, JOHARCHI & ZANGOUEI 36958 [FUMH].

Distribution in Iran: N, W, S, E, C.

Fabaceae LINDL.

Ref.: CHRŤKOVÁ-ZERTOVÁ & al. 1979, ALI & al. 1984, PAKRAVAN & al. 2000.

Astragalus memoriosus PAKRAVAN, NASSEH & MAASSOUMI, Iran. Journ. Bot. 6 (2): 257-259 (1994).

Khorassan: W: Sabzevar, between Fromad and Manidar, 1450 m, 15.4.2001, JOHARCHI & ZANGOUEI 33191 [FUMH]. – Sabzevar, between Manidar and Azadvar, 1300 m, 15.4.2001, JOHARCHI & ZANGOUEI 33203 [FUMH].

Distribution in Iran: N, E (endemic).

Hedysarum damghanicum RECH.f., Candollea 34: 237 (1979).

Khorassan: NW: Bojnord, Mahnan, 1500 m, 23.5.1983, JOHARCHI & MAHVAN 10286 [FUMH].

Distribution in Iran: E, C (endemic).

During investigation in W herbarium we found one specimen from this species from Semnan province, which is not mentioned in Flora Iranica - we add this new record here too: Semnan Province: Mashhad road, low hills along the road, 23 miles east of Semnan, 1800 m, 7.7.1972, ALAVA & IRANSHAHR 10834 [W 1974-22272]. [This specimen was not mentioned in the Flora Iranica treatment (RECHINGER 1984), because it was on loan in LE at that time].

Hedysarum micropterum BUNGE ex BOISS., Fl. Or. 2: 523 (1872).

Khorassan: N: (Shah Jahan Protected Area) Dasht-e Shah Jahan, in declivibus australibus saxosis N Hessari, 1400-1600 m, 16.6.1975, RECHINGER 53614 [W 1976-06160]. – Montes Kuh-e Nishapur [Neishabur], Darreh Abshar, supra Akhlomat [Akhlamad], ca. 1600 m, 1600-1800 m, 30.5.1948, AELLEN 4570 [W 1958-05670].

SE: 30 Km. North of Birjand, 1900 m, 23.4.1985, AYATOLLAHI & ZANGOUEI 12201 [FUMH].

Distribution in Iran: W, S, E, C. (endemic of Iran & Turcomania). Allen 4570 is not mentioned in the Flora Iranica treatment (RECHINGER 1972).

Medicago orbicularis (L.) BARTAL., Cat. Piante Siena: 61 (1776).

Khorassan: NW: Bojnord, between Ghorrimeydan and Dashtak, 650-700 m, 28.4.2001, JOHARCHI & ZANGOUEI 33410 [FUMH].

Distribution in Iran: N, W, S, E, C.

Ononis pusilla L., Syst. Nat. ed. 10. 2: 1159 (1759).

Khorassan: NW: Bojnord, between Darkash and Kangarzoo fall, 1570 m, 20.7.2004, JOHARCHI & AYDANI 35726 [FUMH, FAR].

Distribution in Iran: N, W, E.

Trigonella spruneriana BOISS., Diagn. Pl. Or., Nov. Ser. 1, 2: 17 (1843).

Khorassan: N: Darrehgaz, Chehelmir, 935 m, 11.5.2004, MEMARIANI & ZANGOUEI 35359 [FUMH].

Distribution in Iran: N, W, S, E, C.

Vicia truncatula FISCHER ex M.B., Fl. Taur.-Cauc. 3: 473 (1819).

Khorassan: NW: Bojnord, between Haver and Barfandil, 1700-1900 m, 6.6.2004, JOHARCHI & AYDANI 35501 [FUMH, FAR].

Distribution in Iran: N, W, E, C.

Vicia variabilis FREYN & SINT., Osterr. Bot. Zeit. 42: 82 (1892).

Khorassan: NW: Bojnord, Darkash, Kanimokhtar, 2000-2100 m, 20.6.2004, JOHARCHI & AYDANI 35612 [FUMH, FAR]. - Bojnord, between Darkash and Haver, 1600 m, 2.7.2000, FAGHIHIA & ZANGOUEI 33045 [FUMH].

Distribution in Iran: N, W, S, E, C.

Fumariaceae DC.

Ref.: WENDELBO 1974.

Corydalis angustifolia (M.B.) DC., Reg. Veg. Syst. Nat. 2: 120 (1821).

Khorassan: NW: Bojnord, between Darkash and Gollak, Ghara-Aghaj, 1415 m, 29.3.2005, MEMARIANI & ZANGOUEI 35799 [FUMH].

Distribution in Iran: N, E.

Geraniaceae JUSS.

Ref.: SCHÖNBECK-TEMESY 1970.

Erodium malacoides (L.) L'HÉR. ex AITON, Hort. Kew. 2: 415 (1789).

Khorassan: N: Drrehgaz, Chehelmir, 1054 m, 22.4.2004, MEMARIANI & ZANGOUEI 35291 [FUMH].

Distribution in Iran: N, W, S, E.

Grossulariaceae DC.

Ref.: SCHÖNBECK-TEMESY 1967, ASSADI 1998b.

Ribes orientalis DESF., Hist. Arb. 2: 88 (1790).

Khorassan: NW: Bojnord, between Darkash and Haver 1600 m, 2.7.2000, FAGHIHNIA & ZANGOUEI 33034 [FUMH].

Distribution in Iran: N, W, S, E, C.

Haloragaceae R.Br.

Ref.: RECHINGER 1966.

Myriophyllum spicatum L., Sp. Pl. 992 (1753).

Khorassan: NE: Sarakhs, Bazangan Lake, 800 m, 15.3.2005, GHOLAMI 35790 [FUMH].

Distribution in Iran: W, S, E.

Illecebraceae R.Br.

Ref.: CHAUDHRI & al. 1980.

Herniaria glabra L. Sp. Pl. 218 (1753), **var. *glaberrima*** FENZL in LEDEB., Fl. Ross. 2: 159 (1843).

Khorassan: NW: Bojnord, Darkash, Kanimokhtar, 2000-2100m, 20.6.2004, JOHARCHI & AYDANI 35624 [FUMH, FAR].

Distribution in Iran: N, W, E, C. Only one variety grows in Iran, it is recorded first time from Khorassan here.

Paronychia kurdica BOISS., Diagn. Pl. Or. Nov. Ser. 1, 3: 10 (1843), **var. *kurdica***

Khorassan: C: NW of Kashmar, Sarhouzak, 1300-1500m, 2.5.1984, JOHARCHI & AYATOLLAHI 10961 [FUMH]. – 15km North of Kashmar, 1300m, 22.4.2002, FAGHIHNIA & ZANGOUEI 34033 [FUMH].

Distribution in Iran: N, W, S, E, C. This species has two varieties in the Flora Iranica area, one of them grows in Iraq and another grows in Iran. This is the first record for the species in Khorassan.

Lamiaceae LINDL.

Ref.: RECHINGER & al. 1982.

Ajuga comata STAPP, Denkschr. Akad. Wiss. Wien. Math.-Nat. Kl. 50: 50 (1885).

Khorassan: NW: Bojnord, between Haver and Barfaandil, 1700-1900 m, 6.6.2004, JOHARCHI & AYDANI 35498 [FUMH, FAR].

Distribution in Iran: N, W, E, S.

Lamium amplexicaule L., Sp. Pl.: 579 (1753), **var. *aleppicum*** (BOISS. & HAUSSKN. ex BOISS.) BORNM., Beih. Bot. Centrbl. 22, 2: 133 (1907).

Khorassan: NW: Esfarayen, Safiabad, Gharzi, 1250 m, 14.5.1991, FAGHIHNIA & ZANGOUEI 20221 [FUMH].

Distribution in Iran: W, S, E, C. This species with four varieties, one from Iraq and three from Iran, is recorded for the first time from Khorassan.

Marrubium astracanicum JACQ., Icon. Pl. Rar. 1: 11 (1781-86).

Khorassan: NW: Bojnord, Darkash, Kanimokhtar, 2000-2100 m, 20.6.2004, JOHARCHI & AYDANI 35607 [FUMH, FAR].

Distribution in Iran: N, W, S, E, C.

Nepeta eriosphaera RECH.f. & KOEIE, Dan. Biol. Skr. 8, 1: 31 (1954).

Khorassan: SE: Birjand, 30 Km, from pasgah-e Chahabdollahi to Doroh, 1000 m, 30.4.1996, RAAFEI & ZANGOUEI 26210 [FUMH]. – Nehbandan, Naspandeh, 1150 m, 12.4.1990, FAGHIANIA & ZANGOUEI 18162 [FUMH]. – Nehbandan, 15 Km. from Khansharaf to Tabasin, 1200 m, 30.4.1991, FAGHIANIA & ZANGOUEI 19810 [FUMH]. – Nehbandan, 20 Km. from Khansharaf to Asbest mine, 1300 m, 13.4.1992, FAGHIANIA & ZANGOUEI 21466 [FUMH]. – Nahbandan, Ghadamgah mountins Mazar, 1700 m, 7.4.1998, HOJJAT & ZANGOUEI 29862 [FUMH]. – Nehbandan, Shusf, Eastern of Zehab, 1753 m, 18.5.2005, JOHARCHI & ZANGOUEI 36222 [FUMH]. – Nehbandan, Shusf, between Zehab and Mazar-e Bibimaryam, 1807 m, 18.5.2005, JOHARCHI & ZANGOUEI 36236 [FUMH].

Distribution in Iran: S, E. (endemic of Iran, Afghanistan & Pakistan).

Stachys byzantina C.KOCH, Linnaea 21: 686 (1849).

Khorassan: NW: Bojnord, Ashkhaneh towards Chakhmaghlu, 1600 m, 28.6.2000, ZANGOUEI 33008 [FUMH]. – Bojnord, between Haver and Shoghan, Aghbaba, 1800 m, 3.7.2000, FAGHIANIA & ZANGOUEI 33081 [FUMH]. – Bojnord, between Darkash and Haver, 1300-1400 m, 13.6.2001, JOHARCHI 33782 [FUMH].

Distribution in Iran: N, W, E, C. This species is recorded from Khorassan in Flora Iranica. But the locality (IRANSHAHR & ZARGANI 15148-E) belongs to Semnan province (Shahrud), not Khorassan.

Thymus trautvetteri KLOKOV & DESIAT.-SHOST., Trudy Bot. Instit. Acad. Nauk URSS, Azerb. Baku 2: 303 (1936).

Khorassan: N: Darrehgaz, Tiwan, Barfandil Top, 2430 m, 5.7.2004, MEMARIANI & ZANGOUEI 35654 [FUMH].

Distribution in Iran: W, E (endemic Talish & Iran).

Lythraceae J.ST.-HIL.

Ref.: POLATSCHEK & RECHINGER 1968

Ammannia verticillata (ARD.) LAM., Encycl. Méth. Bot. 1: 131 (1783).

Khorassan: SW: Boshruyeh, Fath- Abad Dam, 1300m, 1989, FAGHIANIA & ZANGOUEI 17981 [FUMH].

Distribution in Iran: W, E.

Lythrum thesioides M.B., Fl. Taur.-Cauc. 1: 367 (1808).

Khorassan: E: Torbat-e Jam, between Golbanou mine and Sharshari, 750 m, 29.6.1987, JOHARCHI & ZANGOUEI 15411 [FUMH].

Distribution in Iran: S, E.

Moraceae LINK

Ref.: BROWICZ 1982, AZIZIAN 2001.

Ficus rupestris (HAUSSKN. ex BOISS.) AZIZIAN, Flora of Iran 35: 15 (2001).

Khorassan: SE: Birjand, Moud, Ghola Mts., 2000 m, 12.6.1989, JOHARCHI & ZANGOOEI 17704 [FUMH].

Distribution in Iran: W, S, E.

Podophyllaceae DC.

Ref.: BROWICZ 1973.

Leontice leontopetalum L., Sp. Pl. 312 (1753), **ssp. leontopetalum**

Khorassan: NE: Mashhad, Ajdarkooh, 1100 m, 7.4.1992. FAGHIIHIA & ZANGOOEI 21400 [FUMH]. – South of Mashhad, Amanabad, 1000-1050 m, 14.4.1982, GHORASHIALHOSSEINI 1323G [FUMH]. – W: Bardaskan, Sir, 1500 m, FAGHIIHIA & ZANGOOEI 24775 [FUMH].

Distribution in Iran: W, S, E. Two subspecies for this species are recorded from Iran. One subspecies was recorded from Khorassan earlier, here we record the second variety from Khorassan.

Ranunculaceae JUSS.

Ref.: IRANSHAHR & al. 1992.

Ranunculus caucasicus M.B., Fl. Taur.-Cauc. 2: 27 (1808); 3: 384 (1819).

Khorassan: NW: Bojnord, between Haver and Barfandil, 1700-1900 m, 6.6.2004, JOHARCHI & AYDANI 35496 [FUMH, FAR].

Distribution in Iran: N, W, E.

Rhamnaceae JUSS.

Ref.: BROWICZ & ZIELINSKI 1977.

Rhamnus cathartica L., Sp. Pl. 193 (1753), **var. cathartica**

Khorassan: NW: Bojnord, Zo-ye Haver, 1600 m, 27.6.2000, ZANGOOEI 32995 [FUMH]. – Between Haver and Kalateh-e Zaman Soofi, 1400-1600 m, 24.8.2003, JOHARCHI 35173 [FUMH]. – Between Darkash and Haver, 1400-1500 m, 23.5.2004, JOHARCHI & AYDANI 35423 [FUMH, FAR].

Distribution in Iran: N, W, E.

– **var. caucasica** KUSN., Bull. Acad. Imper. Scienc. Petersbg. Ser. 34: 415 (1892).

Khorassan: NW: Bojnord, between Haver and Shoghan, Aghbaba, 1800 m, 3.7.2000, FAGHIIHIA & ZANGOOEI 33054 [FUMH].

Distribution in Iran: N, W, E. With the recording of var. *cathartica* here, it is indicated that both varieties can be found in Khorassan.

Rosaceae JUSS.

Ref.: BROWICZ & al. 1969, ZIELINSKI 1982, KHATAMSAZ 1992.

Cerasus avium (L.) MOENCH, Meth.: 672 (1794).

Khorassan: NW: Bojnord, Darkash, between Kanibid and Kanimokhtar, 1600-2000 m, 20.6.2004, JOHARCHI & AYDANI 35591 [FUMH, FAR].

Distribution in Iran: N, W, E, C.

Cotoneaster multiflora BUNGE. in LEDEB., Fl. Alt. 2: 220 (1830).

Khorassan: NW: Bojnord, Darkash, Zo-ye Khooni toward Nargesli, 1340 m, 20.7.2004, JOHARCHI & AYDANI 35692 [FUMH, FAR].

Distribution in Iran: N, E, C.

Geum heterocarpum BOISS., Bibliot. Universelle Geneve, Ser. 2, 13: 408 (1838).

Khorassan: NW: Bojnord, Darkash, Kanimokhtar, 2100 m, 20.6.2004, JOHARCHI & AYDANI 35598 [FUMH, FAR]. – Bojnord, between Haver and Barfandil, 1700-1900 m, 6.6.2004, JOHARCHI & AYDANI 35492 [FUMH, FAR].

Distribution in Iran: N, W, E.

Sorbus torminalis (L.) CRANTZ, Strip. Austr. 2: 45 (1763).

Khorassan: NW: Bojnord, between Haver and Barfandil, 1700-1900 m, 6.6.2004, JOHARCHI & AYDANI 35495 [FUMH, FAR].

Distribution in Iran: N, W, E.

Rubiaceae JUSS.

Ref.: EHRENDORFER & al. 2005.

Crucianella chlorostachys FISCH. & C.A.MEY., Ind. Sem. Horti Petrop. 1: 25 (1835).

Khorassan: N: Darrehgaz, Hesar, 250 m, 16.5.1993, JOHARCHI & ZANGOUEI 23100-B [FUMH]. – NE: Mashhad to Sanganeh, Ziladeh, 740 m, 20.5.1989, JOHARCHI & ZANGOUEI 17423 [FUMH].

Distribution in Iran: N, W, E.

Crucianella exasperata FISCH. & C.A.MEY., Ind. Sem. Hort. petrop. 4: 8 (1837).

Khorassan: NW: Bojnord to Esfarayen, Kalat pass, 1900 m, 17.7.1984, AYATOLLAHI & REZAEI 11439 [FUMH]. – N: Chenaran, Fryzi, Heyteh-e Shaaban, 1800 m, 15.6.1993, FAGHIH Nia & ZANGOUEI 23362 [FUMH]. – C: Torbat-e Heydarieh, Kameh-ye Olia, 1700 m, 8.7.1992, FAGHIH Nia & ZANGOUEI 22197 [FUMH].

Distribution in Iran: N, W, E, C.

Galium tenuissimum M.B., Fl. Taur.-Cauc. 1: 104 (1808).

Khorassan: NW: Bojnord, between Darkash and Haver, 1350 m, 13.6.2001, JOHARCHI 33774 [FUMH]. – C: Torbat-e Heydarieh, between Saadatabad and Pir-e yahoo, 1400-1500 m, 25.6.2003, JOHARCHI 34850 [FUMH].

Distribution in Iran: N, E, C.

Rubia caramanica BORNH., Beih. Bot. Centralbl. 58 B: 290 (1938).

Khorassan: SE: Birjand, Band-e Omarshah, 1650 m, 18.5.1986, AYATOLLAHI &

REZAEI 14303 [FUMH]. – Birjand, Khorashad Valley, Chaj, 1860 m, 8.8.1985, RASHED & REZAEI 13496 [FUMH]. – Birjand, Moud, Ghola Mts., 2000 m, 12.6.1989, JOHARCHI & ZANGOUEI 17700 [FUMH].

Distribution in Iran: S, E. (endemic)

Rubia rigidifolia POJARK., Fl. URSS 23: 726 (1958).

Khorassan: C: Gonabad, Senu, Asiabtangal Mts., 1500 m, 14.5.1985, JOHARCHI & ZANGOUEI 12854 [FUMH]. – SE: Ghayen, Khezri, Pir-e Mardanshah, 1700 m, 19.5.1986, AYATOLLAHI & ZANGOUEI 14363 [FUMH]. – Birjand, Bande-e Dareh, 2000 m, 1.5.1995, FAGHIHNIA & ZANGOUEI 25187 [FUMH]. – SE Birjand, Borzaj, 2200 m, 30.4.1998, FAGHIHNIA & ZANGOUEI 30251 [FUMH].

Distribution in Iran: N, W, E, C.

Scrophulariaceae JUSS.

Ref.: FISCHER & al. 1981.

Parentucellia latifolia (L.) CARUEL in PARL., Fl. Ital. 480 (1885), *ssp. latifolia*

Khorassan: N: Darrehgaz, Tiwan, Barfandil Top, 2430 m, 5.7.2004, MEMARIANI & ZANGOUEI 35657 [FUMH].

Distribution in Iran: N, E. Two subspecies can be found in Iran. Here is recorded one of them from Khorassan.

Scrophularia crenophila BOISS., Diagn. Pl. Or. Nov. Ser. 1, 7: 41 (1846).

Khorassan: C: Kashmar towards Neishabur, km 15, 1500 m, 24.5.1999, HOJJAT AND ZANGOUEI 32551 [FUMH]. – Torbat-e Heydarieh, Rudkhaneh village, Yarfazli valley, 2100 m, 22.7.1992, FAGHIHNIA and ZANGOUEI 22293 [FUMH].

Distribution in Iran: N, W, S, E (endemic: Iraq and Iran).

Scrophularia gaubae BORNM., Feddes Repert. 44: 267 (1940).

Khorassan: NW: Bojnord, Aashkhaneh towards Chakhmaghlu, 1600 m, 28.6.2000, ZANGOUEI 33020 [FUMH]. – Bojnord, between Darkash and Kangarzu fall, 1550-1570 m, 20.7.2004, JOHARCHI & AYDANI 35720 [FUMH, FAR].

Distribution in Iran: N, E, C (endemic).

Urticaceae JUSS.

Ref.: CHRTEK 1974, JANIGHORBAN 2001.

Parietaria officinalis L., Sp. Pl.: 1052 (1753).

Khorassan: NW: Bojnord, Darkash, Nargesli toward Ghartal, 1570-1600 m, 20.7.2004, JOHARCHI & AYDANI 35708 [FUMH, FAR].

Distribution in Iran: N, E.

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