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ARTICLE

AN INVESTIGATION OF TREES AND SHRUBS IN KERMANSHAH AND NORTHERN ZAGROS REGION

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ABSTRACT

Kermanshah is located at west of Iran which most part of it is covered by range of Zagros. According to the latest statistics, latitude of Kermanshah forests has been estimated to be about 500000 Hectares. If correct, 20 % of the provinces are covered by forest. Zagros forests are spread in 11 provinces of Iran with a latitude about 6 million Hectares which comprised 40 % of Iran's forests. Among these 11 provinces located in growth zone of Zagros, Fars, Lorestan and Khozestan are at first, second, and third place, respectively, in terms of growth latitude. Kermanshah has a cold and dry climate according to amperage to formula. It is mountain region with average annual precipitation of 414/72 mm and average high temperature of 37 ºc in July while average low temperature is – 20 ºc in December. Herbal cover was investigated by floristic method and then biological shapes and spread of each plant was identified. Among most dominant trees and shrubs in Zagros are: Daphne, Q. libani Quercus brantii Var persica, Q. infectoria. Amygdalus prientalis subsp. orientalis, Acer monspessulanum subsp. cinerascens mucronata, cerasus microcarpa subsp. Tortuosa. Species that are seen in the collection just once: Pyrus glabra, Ficus carica var. rupestris, Lonicera nummularifolia, Pistacia attlantica subsp kurdica, Rhamnus kurdica var. persica. The most known species under – investigation region are a part of Iranian – Toranian Ones. The number of each species in the region shows that all species are more than 1700 SPP.

KEY WORDS
Kermanshah, Zagros forest, geographical spread, biological shape, Flora

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INTRODUCTION

Forest is comprised of a group of herbs and trees which are in balance with their own environment. In silvers, forests are a society of trees as its dominant members. Alongside trees, there are shrubs, bush, small trees, and alive grass cover, useful and useless animals which are always under influence environment [1-5]. A person who studies forest should have practical experiences along ecological knowledge and he should be in the know about his job place that is base or habitat. Zagros forests as the widest are spread in 11 provinces with an area of 6 million Hectares and comprises 40 % of Iran's forests [6-8]. Among these 11 provinces located in growth region of Zagros, Fars, Lorestan and Khozestan have first, second and third place in terms of trees and forests habitats. Kermanshah, in western Iran, is a mountain region which is covered by a part of Zagros. According to the latest data, latitude of Kermanshah s forests has been estimated to be about 500000 Hectares. If correct, 20 % of the provinces are covered by forest. The forest in south part is spread over forests of Ilam, Lorestan and Bakhteyari. It connects northern forests of Iraq from west and western north combined with forests of Kurdistan. The Kermanshah province is comprised of 14 counties, 31 districts and 86 rural districts. Zagros forest is the widest ones in Iran are spread in 11 provinces with an area of 6 million hectares [7-10] which is 40 % of all forests in Iran. Forests of northern zagros are spread from the north part of Iranshahr in western Azarbijan to Shaho crest across Kermanshah and Kurdistan's boundaries. Northern Zagros is cold and snowy. The average of annual precipitation is 414/72 mm and the average of high temperature is 37 ºc in July the average low temperature is – 20 ºc in December. Fig. 1 shows rain curve and temperature of Kermanshah region.

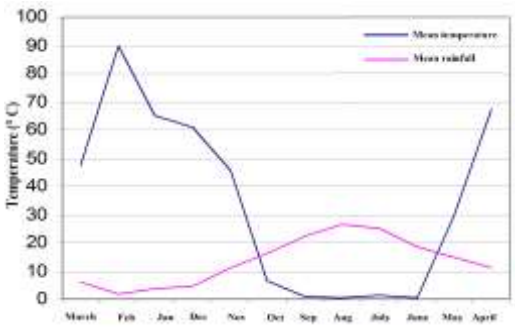

Fig.1: Rain and temperature of Kermanshah region.

MATERIALS AND METHODS

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To investigate the flora in the region, the plants were collected in different parts from early April 2013 to the end of January 2014. In this study, perfect and healthy samples were used. After herbarium preparation, all samples were investigated in herbarium of Payamenoor University. Then in agricultural faculty of Razi University in Kermanshah. The identification was done by various sources: Yazd flora [14] and Iranica flora [19], names of plants dictionary [14], Iraq flora [21], Turkey flora [22], growth elements [6], common families and genus of flora in Iran [14], and Oalaho flora in Kermanshah [13].

RESULTS AND DISCUSSION

Floristic investigation in Zagros region shows that subspecies of *Acer monspessulanum* L. grow in all parts of the region in forests of western Azarbijan, Kordestan, Kermanshah, Lorestan, Chaharmahal, Bakhtiari, Kohgiluyeh and boyer – ahmad, Isfahan, and Khozestan. Table 1 and -2 give the species found under this study.

This species regenerates in two generic or non-generic ways. It has a great capacity for propagation or regeneration of coppice scrub. It is light – orienting and resistant to lights of heights. Among land forms, valley has the best condition for this species. Also, it tends towards west more than other geographical directions. In terms of soil, the best conditions for this kind are habitats with a remarkable percentage of lime, carbonate and bicarbonate with magnesium, phosphorus and nitrogen in lower layers. Iranian oak is a common species in Kermanshah's forests which has changed from seed plants to coppice due to excessive destruction.

Table 1: Species and family name of plant in area

Family	Taxon	Karyotype
Aceraceae	*Acer monspessulanum L.*	IT-ES
Aceraceae	*Acer negundo L.*	IT-ES
Anacardiaceae	*Pistacia atlantica Desf.*	IT
Anacardiaceae	*Pistacia mutica Fisch.et mey.*	IT-SS
Caesalpinaceae	*Cercis siliguastrum L.*	IT-ES
Campanulaceae	*Campanula erinus L.*	IT-SS
Caprifoliaceae	*Loniceranumm ulariifolia jaub.et spach.*	IT-SS
Corylaceae	*Corylus avellana L.*	IT

Table 2: Species and family name of plant in area

Family	Taxon	Karyotype
Cupressaceae	*Platycladus orientalis (L.) Franco*	IT
Fagaceae	*Quercus brantii Lind L.*	IT
Fagaceae	*Quercus infectoria olive. roy, Emp*	IT
Fagaceae	*Quercus Libani*	IT
Juglandaceae	*Juglana regia L.*	IT-ES
Loranthaceae	*Loranthus europaeus Jacq Enum Stirp*	IT
Loranthaceae	*Loranthus grewinkii Boiss et Buhse*	IT
Moraceae	*Ficus carica*	IT-ES
Moraceae	*Morus nigra*	
Moraceae	*Morus alba L.*	IT-ES-SS
Oleaceae	*Fraxinus rotundifolia(Foangustifolia Vahi) L.*	IT-ES
Oleaceae	*Ligustrum Vulgare L.*	IT
Papilionaceae	*Spartium junceum L.*	IT-ES
Pinaceae	*Pinus eldarica Medw.*	ES
Plantaceae	*Platanus orientalis L.*	IT
Punicaceae	*Punica grantum L.*	IT-ES
Rosaceae	*Amygdalus haussknechtii (c.k Schneider.) Bornm.*	IT
Rosaceae	*Amygdalus lycioides Spach Var.*	IT
Rosaceae	*Amygdalus scoparia spach.*	IT
Rosaceae	*Cerasus Vulgaris Miller, Gard.*	IT-ES
Rosaceae	*Crataegus pontica C.koch*	IT
Rosaceae	*Cydonia oblong Miller, Gard.*	IT
Rosaceae	*Rosa sp.*	IT
Rosaceae	*Rosa sp.*	IT
Saliacaceae	*Populus caspica Bornm*	IT-ES
Saliacaceae	*Salix acmophylla Boiss.*	IT-ES
Saliacaceae	*Salix alba L.*	IT-ES
Saliacaceae	*Salix excels J.F. Gmel*	IT-ES
Tamaricaceae	*Tamarix sp*	IT-ES
Thymelaece	*Daphna mucronata Royle.*	IT-ES
Vitaceae	*Vitis sylvestris Gmelin*	IT

Ulmaceae	*Celtis caucasica Willd.*	IT
Ulmaceae	*Ulmus campetris L.*	IT-ES

Among common trees and shrubs species are: *Quercus brantii*, *Q. infectoria, Q. libani,* var *persica, cratagus pontica, Daphne mucronata, Cerasus microcarpa* subsp. *Tortuosa, Acer monspessulanum* subsp. *cinerascens, Amygdalus orientalis subsp orientalis.*

Species which have been in the collection once: *Ficus carica* var. *rupestris, Lonicera nummularifolia, Pistacia atlantica* subsp *kurdica, Pyrus glabra, Rhamnus kurdica* var *persica*

The Zagros's oaks is spread from western and eastern Azarbijan to Bakhteyari forests and western south of Iran. The western Azarbijan is full of *Quercus*. The species are *Q. brantii* in Sardasht and *Q. infectoria* and Q. libanii and profound in western Azarbijan.

CONFLICT OF INTEREST
There is no conflict of interest.

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FINANCIAL DISCLOSURE
None

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