Yazd Qantas Culture and Khuzestan River Civilization, the Cradle of Water Mills in Iran

Mohammad Bahramzadeh and Neda Mollahzadeh Nazem

Department of Humanities, College of Archeology, Abhar Branch, Islamic Azad University, Abhar, Iran
MA Student Department of Humanities, College of Archeology, Abhar Branch, Islamic Azad University, Abhar, Iran

A B S T R A C T

No doubt, in human history, water resources, were base and foundation of Ancient civilizations. Some of these civilizations were formed and developed along rivers and Happened buttons ,one obvious example is, Shoonh planors current Khuzestan, and by having Triple Rivers of Karun, Dez and Karthikeh is creating living conditions for people and their needs. Other civilizations also due to geographical differences and the lack of perennial rivers and Streams, Were formed in areas in order to supply their water needs, extract the water and brought in to subterraneous waters And for using Subterraneous waters construct Qantas on them. Formed Civilization in these Areas where large parts of Iran Such as Yazd, Khorasan, and Kerman and . . . Include to flume called civilization. Water at any point, is the accessible element which to provide the necessities of life like food and supplies is essential. One of the tools that help water for human survival and growth of the human body under the force protection role is mill. Water mills are symbols of Iranian civilization and in different parts of Iran were made on river path or were established in or on the Qantas and canal; the wheels were spinning their everyday people needs to the most efficient manner. Mills built on tributaries of the Karun and Dez rivers in the Khuzestan province as well as the mills built on The Qantas of Yazd in Iran are the best mills in addition to submit their original application. Also Indicate two different source of water supply.

I N T R O D U C T I O N

Natural factors in the phenomena of historical, cultural, social and society has a crucial and determining role. Water is including these natural factors, that with their primary source, rivers and beaches have historically been the foundation of all civilizations. Culture and civilization of Iranian society over the centuries have made that was resulted of natural, human and technological ‘s factors. Ancient people, their settlements were established along rivers where suitable place for human life was and made up the core of the major settlements. Way of living that people choose in the margins of the rivers was agricultural and Animal Husbandry that was the development factor of societies. Climate change and the natural environment and demit of perennial rivers in some parts, make major difference in foundation of civilization. This Climate change not only causes loss of civilization theme otherwise formed Different living style in the desert regions. Civilization that is founded on this basis, are to survive itself with a technological called Qantas which is a unique innovation of Predecessors that has value in the desert and wilderness areas. Rivers and Qantas are, two main sources of the earth's surface waters and subterraneous water in addition to use for water supplies and the agricultural use, are needed in other cases, the various forms existed since ancient times. Hidden Energy lies in the flood water, produce the second feed material, after water, which human is depended on. Mill or “Tahuneh” is device which by its Turning to the non-stationary carefully at the far edge provided human food. Watermills were the individual and collective movement points and where each regional clean energy and allow runoff would spin off its stone work. Mills along the rivers and the Qantas and Qantas construction were long periods of time in human service and have been associated with human life and step. Mills on every decades and villages were the symbols of development so that Firdausi when want to describe development Said:

“One came to the mountain of intercepted.
Since its inside was the spring and mill
1. **Khuzestan and Yazd, two different civilizations:**

The most basic of human civilizations and societies that the vote efforts and efforts as chief and customs and laws and practical aspects of art and building communities are emerged. In the classic sense, civility is the character set of pleasant measures in a progressive public life. Sometimes Civilization will shine and sometimes a nation's civilization is declining. A decline in both people and other ethnic shine on Civilization will be reviewed and the wealth Ethnic leading Temperature reached its fall, decline is inevitable. (Uniqueness: 1352: 87 and 88) after human used to Social life establish its permanent home at the edge of cities and rivers like the narrow strip of verdant valleys and plains passed and so soon began to construct houses on the sides of Rivers and Agriculture . (Paul Todd: 1954: 42) Khuzestan plain is a place of the ancient civilization that was once the capital of Persian civilization as placed at southwestern edge of the Zagros. That mountain is the source and origins of big rivers that water the fields are flooded. These rivers that have considerable number have become Khuzestan plain water volume into the center of the unique and favorable provide for agriculture. These generally plains are limited to Persian Gulf to the South and West, Lower Arvand River and swamps Tigris.

These wetlands are as a barrier against Iraq or the connection between the ancient Sumerian civilization of the province and the Elam civilization. Since of this reason the largest relations between these two ancient civilizations were accomplished in the north than the Northwestern Plains as part of Khuzestan (Guardian: 1375: 30 and 31). Breadth of the vast plain of Khuzestan, the fertility of the soil and abundance of water in the desert, caused to attract early human community. Northern plains of Khuzestan, where the arrival of three great rivers Karkheh, Karun and Dez copper with superior quality and the number of Soil, is the fertile plains of one of the richest in the world. Beginning of agriculture in this region of the ancient world and the first World Agricultural Center, were made in this area. These early settlements fruitful results in the creation of human life and community and primary settlements gradually. Due to the aforementioned rivers,

Inhabitant Living economy was Based more on Numerous agricultural plains and hills that have been the basic social continually Lodging and one after the other ancient civilizations had significant activity in this area. (Guardian: 15) Including special areas for cultivation for the region which created suitable floor for early humans, was the, Mianaab plain Bifurcate from the Karun River and the Pius of them together and then with dose river connection is obtained. Mianaab plain has the ancient city of Shoosh in its place which is a more traditional monthly according a fiction, was made by Great Shapur. In a pre Islam period was an important pre-Hakhamaneshian and Sassanid kings local that often it was the state capital of Khuzestan province. (Tall: 1348: 39). Historians Branch the Name of the term "Shusha" or "SOSA" means "pleasant that although some consider it "the camel king" that means The "City King". Some people, it's the percentage that has been due to the entrance of S Is, "six", some say Susa have superior characteristics. Privileged positions and appropriate living conditions due to its proximity to the vast natural barriers in the path of Karun River, provide possible causes Suitable for family settled in this area historically. (Warrior: 1388: 42) Special characteristics of city Historically, however, is that the scientific principles of construction of dams and canals are different branches and the barren lands Because of the Khuzestan fertile soil was round, shortly after being drinking, irrigation costs as centesimal Proceeds will benefit them. (Ex: 39) Construction of hydraulic structures such as dams of Mizan, shadrawan, and span entrance ofDaruyon In the Castle Creek, that created the largest geo-historical turning point of city. (Arjmandfar: 1377: 20) Karun the most important River of this green plain, with its main branches called "Gargar" and "Shaty" formed Shooshtar Island that is called Mianaab plain. (Guardian: 41) Dezful city, other Khuzestan city, beside the fact dose has been placed And its construction Attribute to the Sassanid era. Different names lining the city's name is well known from times past: Dezful, Dezfyl, Dezhpul, Qantrh, anda mesh, and Desful, dezful.

Hamdollah Mostofi attributed Dezful construction to Ardashir and says there is a bridge in this city which was built on Gondi Shapur water and has a length of520 and width 15 steps that has 42 springs. The basic core of Dezful Was Fortress that now no trace of it has left behind, and many historians, including Yaghut hamdavi and Hamdollah Mostofi called it "Ranash" and "Andalmsk". During the Safavieh period, the family called "Rnashyan" has lived that were Shoosh government, despite the existence of any relationship between this Family name and its old Dezful name was mentioned., but in writer opinion there it is possible, that family name was driven of Dezful old name after arriving governments position. What is clear is that the land the fertile surrounding Dez water is frequently caused by the formation of primarily agricultural. People of this city more continue jobs of their ancestors. Generally continued farming and agricultural lands and the livelihoods of people were the most important asset of them.

City fertile and abundant water makes the city a new face to its primary use in agriculture. Dose River presence was Factor that concentric city expand centrally. Shore West doses with fertile land, was intended only for agriculture and farming. One of these factors was the safety of city. Doz river like a huge moat, protected the city from the onslaught of the enemies of the West and the buildings in which they are constructed on the other side, have little defense against enemy attacks because they were outside the fence. (Shinning: 1381: 47) B. Therefore, the rivers are as the Natural elements in this place and are the factors of broad field and human development which has an important role in the development Agriculture and production for their inhabitants.
and founded its economic it’s besides civilizations by agriculture. Against The civilizations that have shaped in the river margins, there are other civilizations that their life shaping and their Settlements were shaped another way. In some parts of Iran, with a developing area of desert, by climate change the drying air, the dried up rivers, some dependent settlements will be transformed.

These changing conditions and Leads to the formation of another type of culture and civilization which is called Curry’s (Qanats) civilization. This area inhabitant cave Qanats to supply their water requirements. A phenomenon that is not based on rivers and streams resulting which is the creation of Exploring and modern mind of Iranians and is artificial.

Qantas or curry’s is one of the most complex and the most amazing human inventions To meet the critical needs of human societies means water supplying for low water areas or no water area. One of Characteristic of human societies is to adapt with the natural environment. I.e. The people Have lived along the river with environment changes are consistent and their culture has changed. These changes Includes system Economic, cultural, social, artistic, and... Changes. (Paply: 1: 1379: 12) A prominent feature of the canal's civilization, is that the ratio of the places have formed along the rivers Have been less wrath by powerbrokers. As discharge of Qanats is less than rivers And products derived from them is low, so are less attacked by an enemy attack, Similarly, Confiscation and seizure of the rulers were lower; Alternatively, if a river civilizations was a conquest, and domination of kings and rulers Moreover, due to the low volume of water they couldn’t reach that level of power to have The ability To exert their power over the people And they extended their power into political power. And in the heart of a water management system, create Pharaonic rule. (same: 14) A little water and poor pasture and agricultural land and nature, causes, the people provide their resources through crafts Trade and savings. Thus despite of the river Civil that is base of economic based on agriculture in the Fertile land, here is the base of economy based on crafts and trade that make this people identification (Same: 16) If there wasn’t Qanats originally city like Yazd wasn’t created or a few villages in range of Shirkookh Mountains were created. Yazd city, Daroleaden of Iran, is the Ancient and historic city with a The specific origin that Still retains its beauty. this city has changed a lot during the history and Hassan pirnia mentioned its old name "Aysayys" or "Frafer" that enjoy Iran during Hakhamaneshian period but some other historians such as Ibn balkhi, called it "Keshe", Seljugh king called it “Darolebadh” and "Darolsyadeh".

Historians have attributed its building to Yazdegerd that knows the city of him since city is the pre-Islamic Zoroastrian holy. (Ansari: 1353: 41) Yazd has Rates of than other cities in the country One of the advantages is that Yazdi had great skill in digging Qantas And wherever they wanted to build a Qanats And aqueducts to bring they wanted people of Yazid to help.

They spend hours and days were dedicated to this sacred. Until one day succeed to flowing water along the foot of the basement hill, and emerge it on the ground and turn cottage to a rustic villages. (B.: 1353: 32)

In Iran, the emergence, development and urban location to comply with the specific features of time and place, from the distant past to the present day is formed on dependent to being close and far of water. Parallel to the development of irrigated agriculture and Qanats techniques Spatial expansion of cities and population growth also occurred. Therefore, the water and Qanats has a major role in Societies and life civilizations. (Rahimi: 1383: 204).

2. Look at the history of mills:

The predecessors have the correct information’s of force Lies within the current waters and the slope factor of it. And used the water force so much. On of the obvious reason for tins statement is watermills construction. Those still are used in different areas of Iran.

Water mills are usually domestic realm, mostly in the direction of the sea and aqueducts constructed, and the social climate in the property Machinery and equipment into the domestic realm where several fabrics stone and wood and metal that existed in certain places and the number of Two stone built as form of one circle to another stone placed above the stone. in the middle hole of stone There is great Ferrous vertical columns connected to the other part of the board that were mired wheels and Was stick to it and Part of it trough where the water was flowing, and it was fixed and that iron column was called Blade mills (’s: 1360: 64) Some researchers have attributed the invention of watermills that which is really the art of water making butter, to 23 BC. M. and knows as profession of Islamic country which had come from there to western countries.

(PROSPER: 1373: 137) The water mills are made of different parts: channel underwater stokehole or tower of mills, Wood turbine Grain storage, wooden gutters and stone grinding mill, which is a constituent of the main parts that each Are responsible for a particular function. (Corus: 13 55: 221) Sometimes the word mill to measure water was used. When they wanted to measure the river water it was expressed with the word "Asia". For Example, they say X Qanats has three or four “Asia of water.

(Bastani Parizi: 1346: 617)

The issue of security and safety system at the mill are the issues that are important to the Milling. Water after dealing with the wheel blades in the furnace by a corridor to a height of 1.5 m.
Under construction mill is driven from the outside. This is the same Way that when the mill is not working can be entered into it. To prevent the entry of people and animals, Central corridor wall is closed by water and only water passes through a meter long stone pipe and after Continuing will be exit of that corridor. This Operation was the same principle of creating a defense system against animals and the safety of mills man. In connection with the mill, flour and bread, are very interesting terms already in some places that are used in Iran:

1 - Bakhrur: The major cereals that are high in value from tens of course, refers to information such that one or more of the internal grain sack is called Bakhrur.

2 - Mashtak: (a plus M), the amount of corn flour balls that are ready to be fed from a quarter to ten, often a event occurs that a Mashtak Takes several stacked, in which case the Mashtak is shifted.

3- Khariz (fraction H) by a high stone moves and moves mill to three meters in length and its diameter at Approximately 35 inches and is made of solid wood. (Ex: 1360: 60) Most people think the mills are only work with water and aqueous streams are built on them, but in addition to rivers and Streams also Qanats, are as well as the second most resources water Supplying to mills that sometimes there are several mills along Qanats. The presented Article seeks to show constructed Qanats on rivers and streams in the two cultures with different economies.

3. Khuzestan and Yazd mills:

As mentioned above, the Mianaab plains between the two branches of the Karun River water or Branch is surrounded by an appropriate route for agricultural products which are enjoying of it. Between the two branches of the Its lower part, has three diversion tunnels for Water exiting that one of these three is used for feeding and unleashing Water mills that are located in the beach on the right hand, the other water tunnel and momentary surplus go to Gargar Downstream flows and Third Qanats is the most important and longest canal, while guiding water to city tunnels, water conductivity, Feed mills on the left. (Arjmandfar: 1377: 25)

Water mills of the Shooshtar, are including unique works in the field of water utilities worldwide which their construction beginning back To the Hakhamaneshian period. Gargar dam moves from south of the river of the same name in the Sassanian Period digging, To the bridge section looks Gargar through three tunnels were dug into the mills set. Every mill has Warehouse space, the location of the stone mill and stokehole. Likely number of 33 mills that existed in the collection of the Wheat ingredients such as sesame, sugarcane and maize as well as in the mill. Ownership of the mill was personal and some states. On top of some of the mill buildings were Flung wide the place of worship and prayer. (Salahshoor: 1388: 43) Windmill Tower Bridge cross section in one and half kilometers of Gargar dam, other mills of shooshtar which are cutting the quality of Rocks Bridge architecture section, the layout of a space higher than Gargar mills have been enjoyed. (Rajabi: 1371: 221), there is a lot of ground in one spot, motivated move Of The group that had been created for grinding wheat and barley is buried Perhaps the confluence of northern trips of Plain water among farm, was shooshtar mills. This was effective in fixed view of the city and its development. Enjoying

Of natural dams and river conditions are major factors to probe the Gargar dam in the consolidation of mills of shooshtar that their construction is due to these factors. (Arjmandfar Far: 1377: 28) shooshtar mills has placed in three different parts of Shooshtar, West North and East. Mills in the western part of the tunnel floor are fed by the water of the river prior to arrival Tunnels, and then gathered behind a rock leads to the mills. Mills in this part totally drilled rocks and this is why they are not stokehole probe behind the rock pools rather than operate stokehole to. Mills in east Section are dug like Western section in the rocks, but due to the high altitude of the river, opposite the western part, some digging stokehole That is not characteristic of this section. Mills downstream in the northern part of Gargar dam is to the heart of the inside hero which are located in the foot of a cliff or a bridge has been constructed on it, so all the parts built on a cliff (same as 33) it have built a mill on the substrate, the sandstone is due to their extraordinary Mills strength that Has a special feature of the building. Buildings on stone mills because are built, on the Massive stones. Need no Foundations and columns are the stones as walls have been integrated into that have no space. Therefore Following the relocation of the meeting and there were no cracks in any of the sections of the mill. Mills are generally three types:

1 - Stokehole or Windmill Blade 2 - Windmill Chair 3 - Floating Windmill.

Windmill Systems of shooshtar is the Third Kind. This mill type building that dates to the tenth century AD, are only used as a province like Khuzestan has large blades during rowing time. As its name suggests, comes floating in the river, and due to the great need of moving water to remove Blades, and was built dams and provisions that provide the required amount of water. And for this reason Gargar dam is the most appropriate location for the construction of mills. (F: 13, 76: 96).

Other mills of Khuzestan are The Old mill that has been constructed in the city of Dezful on the Dez River. The mill is about seventeen hundred years old and it is the foundation of the Sassanian period. People of this area called Land “Oosyvarana “to theses mills. The name of ” Rana " is taking down the names of ”' Runash " that is the name of on of the oldest locations in dezful. These structures and facilities are of Sassanian established few common applications who are working together to conduct water driven mills and also a source
of Nutrition. Besides these places were promenade to commanders and Sassanid rulers. Because this location was between two seat of government of Sassanian, tisfun and Farsnad for this reason it was a military way that make strengthening in the possibility that the They are part of the preparation of the food supply has been set for temporary military. (Rakhshani: 13, 8, 1: 81) Dezful city that was called more maliky, groups, Dubodar, Sorkheh, Qajyl and afsha castle were placed in three parts of Dez, some of which had taken place under the old bridge, some other shit on top of mashed and The lower, north of the river and the third under the new bridge has been constructed. For construction of the building first they had changed the water path and then moved so that big dams were built full of stones and they were dumped in the water and they would stick to water sealing then pushed in the other direction Part of the water dried up river floor that a mill was built. Dezful mills were built on two parts, the bottom two floors have been Lower chamber for facilities and and the top floor was the location of the grain mill. Two species were single and pair that the single mill, just a stone work and only has one room and the mills that two stone work was a two-chamber mill. (Same: 83 and 88 and 92) in term of mechanical system, dezful mills are floating like shooshstar mills. Floating systems from 10 different sectors are made: Steel Shaft - Shaft Horizontal wood - Blade Grinder - Gargar - Tooth Gargar - Wooden bearings - Dole - Vertical Shaft - coarser stone - stone face. In this way, since of water impact, bladders will move and transferred to Gargar. Gargar since of the involving with Dole transferred horizontal force to vertical forces. Through the vertical shaft, the force is transferred to top stone on the fixed stone, and since of abrasion wheat became flour. (Same: 95) In addition to mills working by the rivers water, some of the mills due to fear Des rivers, are made on the Qanats and with its water move their bladders. Samples of this mill are in the city of Yazd and its functions that still some of them are used Sometimes several mills were built along a Qanats, their built was started from The wells Mom which is the main source of its nutrition and the latest and most deep subterranean wells and is placed in the range of mountains, And the last mill was dig near the Qanats symbol, that this part of Qanats, is located usually in the vicinity of the village or The town. (Mirbagheri: 1379: 112) As noted above, mills have three classes ,those mills of Yazd province are “stokehole” and the Windmill “cycle” “mills. Unlike floating mills that are specified for Khuzestan Province. Stokehole mills and cycles are used for areas which have thrown a limited amount of water and there is a general designation for these areas. Stokehole mills was made of, the vertical tunnel from the higher level to a lower level. Water exits through the bottom of the tunnel to the spokes of the wheels that Meets and brings it into circulation. Flow axis causes one spin in one of two mill stones also Wheat was one of the mills wheel as stokehole mill is horizontal except that it is driven by Gear into the axis. (F: 13, 76: 96) Yazd mill are so high in terms of technical depth and strength stokehole. And their stokehole depth of 8 m to 40 and 50 meters, depending on the amount of subterranean water is Variable. along headrace, a well was drilled to a variety of reasons, such as the water is not necessary to be near stokehole, Stokehole in the water from these wells were used, the wells, term are called locally " mills Chahdan “, in fact, that the wells would cause no water flowing downstream to the village, because of a breakdown mill and stokehole, will be discontinued. (Papy 2: 136 4: 12). In some mills, which have been designed stokehole few meters of them are located outside of the field, when Water exits immediately stokehole is not reflected, but a few more and moves some meters on the earth and since the land is sloping, it is directed from the river which is has upper height of ground. Here it is added to altitude atmospheric In order to be the same height as the left out of the stokehold. Then water enters into the headrace and then rotate Blades and again returns to the underground channels and then during the softball, the new symbol will appear and the Headrace is another. (Same: 19) The mills working on Qanats, have many advantages, they also affect the operation of Qanats to be better. including the cost of maintenance and dredging Qanats that this should be done every year; was done of the Mills income And the owner wasn’t forced to pay for Qanats,. By this action In addition to dredging the Qanats, a new Qanats could be built with the money of mill. (Same: 25) It also prevents the evaporation of water mills were subterranean because if animals revealed the presence of water, about several Kilometers on earth shall be moved. Sometimes, making mills, was for moving water to other area This means that sometime in the future manifestation of Qanats is part of it , that someone purchased subterranean water in order to led it to downstream . Most suitable for this action was that a Qanats will be made and the water will be moved to Stokehole and from stokehole to the new one. In Mills, turbine blades are made of turbine wooden blades are made of Elaeagnus Angustifolia wood since it inflate in waters and Strengths bladders on body and when it is not possible to get out when it is wet. (Same: 20 and 25) two Yazd old mills still remain from the ancient times. These two Asian strangely embedded in the closet. This approach mill has two screws and the dock location was built of brick. Another mill, is “minister” mill which is close to Kushenku and the entrance to the mill center has five screws and At the head of each bolt a skylight was built (, always a square well,) its construction was attributed to Minister Seyed Shah Rukn al-Din Yahya Mozaffari , it would be the eighth century AD . (Afshar: 1374: 760 and 761) There are other mills in the area of meybod that gets services Ashkezar section. these mills is called Rastagh because it is located in Rastagh this mill is one of the biggest mills which was built on the Hemmat abad Qanats.it has a slopping tunnels means a way to enter the main courtyard of insurance corridor 56 meters long and 10/4 meters wide.
The main floor of the mill is a quadrilateral whose each four side has 80/4 and the other four sides, each 75/2 meters. And each of the sides has a small booth to a depth of one meter. Eastern and western sides, with two rooms on 2 Home Frontnumber. Booth floor area of southern states and the mill is aKhura. The ceiling is domed courtyard mill stands on top of the dome which is made of 8 sided polygon domed butter to Taken on a new dome on which 8 ports for light and air have been made. Finally dome with a 32-sided polygon bowl is terminated. Building Mill entirely of brick. And the composition of its roof and floor covered by Mogharnas with geometric designs that have created interesting initiatives of Iranian architecture (same: 140 and 141)

Conclusions:
According to Presented studies, water resources have the most important role in the emergence and development of civilizations and the establishment of towns and villages and is an important factor linking them. Generally Iran water supplies with regard to water resources have been relied Rivers and streams and canals. , in a country like Iran, where there is not a lot of water resources, the Traditional technology and indigenous inhabitants of dry land in some areas has caused them to live self-sufficient in an area without water for their needs. Subterranean as well as the rivers have significant role of centralization on the different areas of Iran. It make closer human to each other and were used in different ways for human needs. Establish a mill on Rivers and canals are an important source of nutrition for humans, their construction back to the Hakkamaneshian era. In addition to the placards water supply functions best deals on the launch of the water is Along with water, such as rivers, dams, aqueducts can be seen that broadly reflect the growing crops .’s water utilities In the ancient region of Khuzestan and Yazd flour and grain supplies long people were in charge and the other one along rivers The aqueducts have been constructed . Mills those aqueducts were built on the order of water use, In the heart of the earth have been made and where they dock and flour instead of digging the earth and to reach places Pedestrian steps like grinding were carved into the ground . Mills along the river with a less depth were placed on the Rivers Border. Other benefits of the constructed mill on the river were that the expenditure was reached by mills revenue. Or mill owner would fix this attempt to dig new canals. , but Rivers do not cover such expenses. Creating mill Make it possible to spread to other arts, which is more typical example in Yazd That has been noted . Creating water mills arise in the division of labor between men and women. Doing this work manually with an Ace Finder What was the woman's responsibility was assigned to men and seeking women freedom, the other arts of which have survived to the present day Like Zylubafy, crafts, knitting cashmere and ... the women was founded .part of income in some areas was of this way . It has been more through in Yazd civilizations such as the main source of their income Qantas craft, is clearly seen.

REFERENCES
Arjmandfar, M., 1377. Windmill Branch - Bachelor thesis - Cultural Heritage Education Center.
Ansari, Jamal, 1353. Note on the city of Yazd and its legacy - Journal of Arts and Humanities, Number 149.
Ancient underflow, Mohammed Ibrahim, 1346. Central Seven Stones - V. Journal, 43.
Jesus, B., 1353. Yazd to Isfahan after - Journal of Arts and Humanities, Number 145.
Syabhayy work with subterranean water - the magazine of literary essays, 1364 - No. 68
Paul Todd Lewis - The Evolution of Civilizations - Translate Hashem Razi - Publishing Asia, 1954
Rajabi, Seyedfar - Waterfalls Branch - Journal of Work, 1371 - No. 21
Rahimi, Hussein - Subterranean role in the sustainable development of arid and semiarid regions of Iran - Journal of economic and political information 1382 - Number 201 and 202
Shinning, Mary - Windmill Branch - Bachelor thesis - High Center of Cultural Heritage - 1381
PROSPER R - Windmill camera and a blue background in Iran - Social Sciences Allameh Tabatabai University 1373 - Number 5
warrior, H. - Branch City waterfalls and Hydraulic Structures - Journal of Geography, 1388 - No. 89
F, M - engineering on Iran - Press Balk - 1376
Corus, GR - Water and Irrigation Technology in Ancient Iran - Publication of the Ministry of Water and Electricity -1355
’s Nasser - the width of the mill and its location in popular culture - Journal of Cultures and People, 1360 - Number 4
Guardian E. –shooshtar ancient urban center of the universe - Publishing Heritage -1375