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Cover Photo: Falak-ol-Aflak Castle - Khorramabad

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Merry Christmas And Happy New Year

Upon the occasion of celebrating the birth of Christ and the advent of the New Year, and with high hopes for deliverance from the calamity of the Coronavirus, I wish all the peoples of the world much joy, especially the Christian members of Joint Chambers of Commerce of the two countries, Iran and Britain.

Doubtless, the coming year, with widespread delivery of the vaccine and the containment of this virus, will be different from 2020. Depending on the after effects of the advent and spread of the Coronavirus globally, the coming year will be one in which authorities responsible for the well-being of human societies, shall be obliged to take steps towards the replacement of the current ineffective welfare systems with true welfare. This will necessitate decreasing production and consumption in order to create proportionality between living costs and incomes. They would also be obliged to decrease the relative amount of debts of all societies by placing taxes on wealth and capital outflow, and consequently reducing both the depth of the current economic class gap and the social tensions that ensue.

The Chambers of Commerce all over the world should make support of the achievement of this goal globally among their major tasks.

Dr. Amir Houshang Amini

Iran's foreign trade during the Third month of year 1399

(20 March to 20 June 2020)

According to the statistics of the I.R of Iran's Customs Department, the Iran's foreign trades volume during the Third

month of the year 1399 are as indicated in the following tables:

Primary import/export statistics of non-oil goods with the calculation of gas's Liquidities during the Third month of 1399

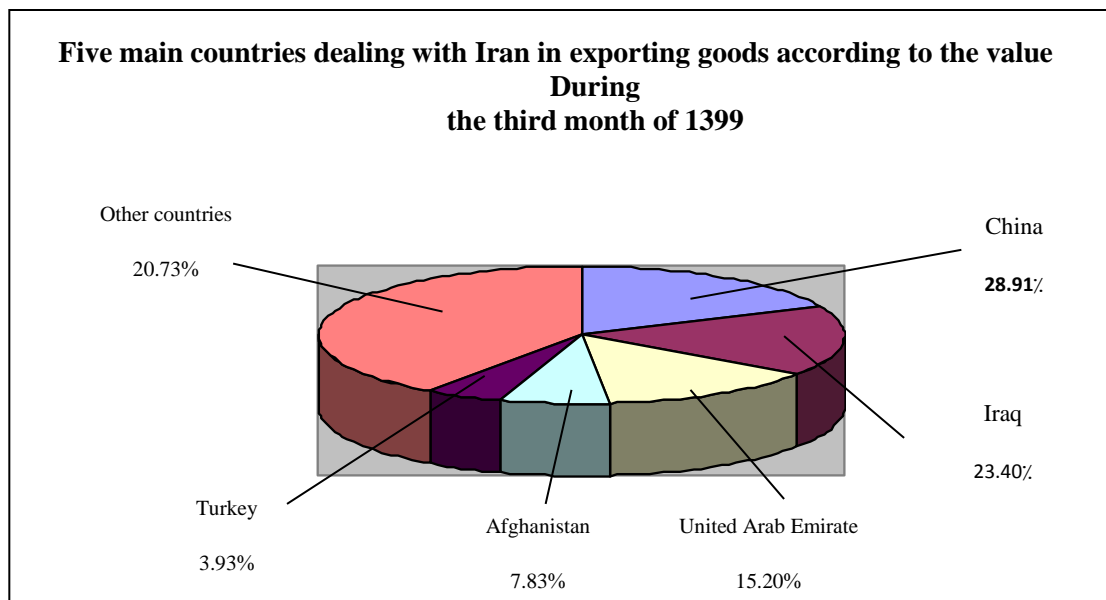
| Activity | Third month of the year 1399 | | Third month of the year 1398 | | Percent of changes | |
|---------------|------------------------------|---------------------------|------------------------------|---------------------------|--------------------|--------|
| | Weight (Thousand tons) | Value (Million Dollar) | Weight (Thousand tons) | Value (Million Dollar) | Weight | Value |
| Import | 8.924 | 7.620 | 8.993 | 10.403 | -0.78 | -26.76 |
| Export | 21.929 | 6.364 | 39.962 | 11.359 | -45.12 | -43.98 |

Exports:

The most important exports during the first month of 1398, have been done with countries, as follows:

1) "China" with 1.840 million Dollars and 28.91 percent of value, 2) "Iraq" with 1.489 million Dollars and 23.40 percent of value, 3) "United Arab

Emirate" with 967 million Dollars and 15.20 percent of value, 4) "Afghanistan" with 499 million Dollars and 7.84 percent of value and 5) "Turkey" with 250 million Dollars and 3.93 percent of value.

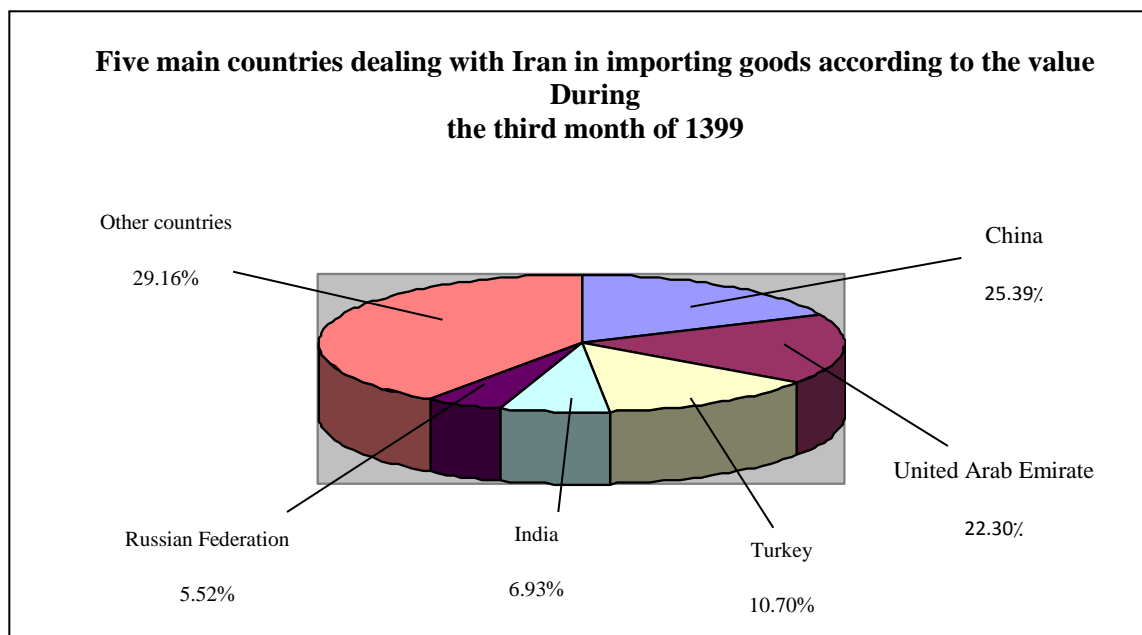


Imports:

The most important imports during the third month of 1399, have been done with countries, as follows:

1) "China" with 1.935 million Dollars and 25.39 percent of value, 2) "United Arab Emirate" with 1.700 million Dollars and 22.30 percent of value,

3) "Turkey" with 815 million Dollars and 10.70 percent of value, 4) "India" with 529 million Dollars and 6.94 percent of value and 5) "Russian Federation" with 421 million Dollars and 5.52 percent of value.



Customs announced:

Foreign Trade Statistics of Iran and Britain in the 11 Months of the Year 1397

Foreign Trade statistics of the Islamic Republic of Iran and Great Britain in the 11 months of the year 1397, has been announced by the Customs of the Islamic Republic of Iran.

According to Bourse Press News Agency, based on the 11 months' statistics of the Customs of the Islamic Republic of Iran, the total export of the country last year reached 40 billion dollars, and the total import of the country reached approximately 38.5 billion dollars.

Meanwhile, sanctions and other problems that existed in foreign trade caused considerable changes in foreign partners.

Bank sanctions and shipping problems in the previous year made foreign trade with farther countries harder, and in the meanwhile, increased attention to neighbour countries having common border with the Islamic Republic of Iran correspondingly.

However, after the exit of the United States of America from JCPOA, Germany, France and Great Britain that were negotiation parts with the Islamic Republic of Iran in JCPOA, had promised not to let the sanctions imposed on our country by the United States of America to be effective. The three countries had also promised to find solutions to confront the sanctions, a solution that finally led to a financial channel called INSTEX.

But despite all these agreements, a glance at the trade statistics of these three countries in the first 11 months of the year 1397 shows that not only they failed to keep their promises of remaining by the side of the Islamic Republic of Iran, but also they considerably decreased their economic cooperation with our country.

The trade volume of these three countries with the Islamic Republic of Iran in the mentioned period has decreased both in terms of weight and in terms of value, reaching to a total of 4.4 billion dollars. This means that the three countries have had 4.123 billion dollars export to the Islamic Republic of Iran, in return for their 282 million dollars import from our country. In other words, the export of these three countries to the Islamic Republic of Iran has been 14.5 times their import from our country; and the trade balance of Iran with these three countries has been -3.8 billion dollars.

Iran's import from Britain has been 932 million dollars and Iran's export to Britain has been only 27 million dollars; while in the same period in the previous year – 1396 – Iran's import from Britain has been 989 million dollars and Iran's export to Britain has been 43 million dollars. This means that in the 11 months of the year 1397, Britain's export to the Islamic Republic of Iran has decreased only 5.6% and its import from Iran has decreased 38%. In this period, the decrease of Britain's import from Iran has been much more than its export to Iran.

Khorramabad

&

Falak-ol-Aflak Castle



Khorramabad is capital of Lorestan province, which is located in the western part of Iran on the Zagros Mountain chain, running on the northwest to southeast axis, from Kermanshah to Fars with a breadth of 150–180 km.

According to the statements, Khorramabad with plenty of natural and historical attractions, such as: Castle Museum Falak-ol-Aflak, a Sasanian monument built on a hillock, Hareh Baq Graveyard – which is also located on a hillock in the village of Hareh Baq, that few of the graves have 'Kufic' engravings on them dating back to the 5th and 6th centuries AH. The tomb of Sheikh Mehdi, one of the reputed personalities of this, Dousheh Cave, The Broken Bridge Shapouri, Qajeh (Moqar) Cave, Kiyou Lake, Sangi Whirlpool, Khorramabad Valley and . . . are some of the most visited Tourism attractions of Lorestan for developing Iran national tourism, both domestically and internationally.

Preface: Lorestan province covers an area of 28,294 sq km, with estimated population of nearly 2 million.

The name “Lorestan” means “land of the **Lors**”. In the wider sense, it consists of that part of western Iran coinciding with **Ilam Province** and extending for about 650 km on a northwest to southeast axis from **Kermanshah** to **Fars**, with a breadth of 150–180 km. The terrain consists chiefly of mountains, with numerous ranges, part of the **Zagros** chain, running northwest to southeast. The central range has many summits that almost reach the line of perpetual snow, rising to 4000m and more. It feeds the headwaters of Iran's most important rivers, such as



Zayanderud, Jarahi, Karun, Dez, and Karkheh. Between the higher ranges lie many fertile plains and low hilly, well-watered districts.

The highest point of the province is the **Oshtorankuh** peak at 4,050m. The low-lying areas being in the southernmost sector of the province are approximately 500m above sea level. **Oak** forest covers the outer slopes, together with elm, maple, walnut, and almond trees.

Western Lorestan comprises a series of parallel fertile valleys running high in the Zagros Mountains. The Posht Kuh region is in the western foothills of the **Kuhe Kabir** range. The **Pish-Kuh** region lies to the east of **Kuhe Kabir**. This area had human settlements during the **Bronze Age** as early as the mid-3rd millennium B.C.

Climatically, the province can be divided into three parts: the mountainous regions, such as **Boroujerd**, **Doroud**, **Azna**, **Nourabad** and **Alashtar** that experience cold winters and moderate summers. In the central region, the spring season begins from mid-February and lasts until mid-May. The township of khorramabad is in this realm. Southern areas such as **Pol-e-Dokhtar** and Papi are under the influence of the warm air currents of Khuzestan and have hot summers and relatively moderate winters.

The climate is generally subhumid continental with winter precipitation, a lot of which fall as **snow**, because it lies on the westernmost slopes of the **Zagros Mountains**, annual precipitation in Lorestan is among the highest anywhere in Iran south of the **Alborz Mountains**.

At khorramabad, the average annual precipitation totals 530 millimetres (21 inches) of rainfall equivalent, while up to 1270 millimeters (50 inches) may fall on the highest mountains. The months June to September are usually absolutely dry, but Khorramabad can expect 4 inches of rainfall.

Temperatures vary widely with the seasons and between day and night. At Khorramabad's summer temperature typically ranges from a minimum of 12 °C (54 °F) to a hot maximum of 32 °C (90 °F). In winter, it ranges from a minimum of -2 °C (28 °F) to a chilly maximum of 8 °C (46 °F). Lorestan includes eleven counties (shahrestans): **Aligudarz County**, **Azna County**, **Boroujerd County**, **Delfan County**, **Dorud County**, **Dower County**, **Khorramabad County**, **Kuhdasht County**, **Selseleh County**, **Poldokhtar County**, and **2013 Rumeshkan County**. Since the creation of the above map, Kuhdasht County has been divided into **Rumeshkan County** and a smaller **Kuhdasht County**.

Transportation: Lorestan is in good condition in term of transportation, because it is located on Tehran-Bandar Emam Khomeini highway.

This highway consists of road 56 and road 37 (Iran) with a junction at Boroujerd. Freeway 5 is the 2nd road for rapid transport between Tehran and Khuzestan with connections in Boroujerd and Khorramabad.

Airports: Khorramabad Airport is the only active airport in Lorestan with daily flights to Tehran. The second airport is going to be built in the north of Boroujerd.

Railway: Due to its mountainous conditions, Lorestan has one of the important railways in Iran. The Lorestan rail route is 215 km long, and has 15 stations. Lorestan has 133 railway tunnels. The railway follows the rivers **Dez** and **Sezar** in Bojnourd.

History: The ancient history of Lorestan is closely interwoven with the rest of the Ancient Near East's. In the third and fourth millennium BC, migrant tribes settled down in the mountainous area of the Zagros Mountains. The **Kassite**, an ancient people who spoke neither an **Indo-European** nor a **Semitic language**, originated in Lorestan. They would control **Babylonia** after the fall of the **Old Babylonian Empire** ca. 1531 BC and until ca. 1155 BC.

Parts of Lorestan were invaded and settled by the Iranian **Medes** in the second millennium BC. The Medes absorbed the indigenous inhabitants of the region, primarily the **Kassite** as well as the **Gentians**, by the time the area was conquered by the **Persians in the first millennium BC**.

In February 2017, archeological discoveries related to the **Achaemenid** era were made in Lorestan for the first time.



Dousheh cave, painting



Lorestan, bronze

Disc-headed pin depicting a female figure as decoration, found in Lorestan, kept in **Rietberg Museum, Zürich**.

Small **Lorestan bronze** artworks, usually dated about 1000 to 650 BC, reached the outside world from the late 1920s and are kept in museums all over the world, where they are valued for their vig-



orous style, with many representations of animals. But actually, the beginning of this bronze-making tradition goes back to the mid-3rd millennium BC. Archaeologists characterized these techniques by the metallurgical analysis of different artifacts. We have characterized these practices by the compositional and metallurgical analysis of grave goods from several cemeteries in the region including six dating to different phases of the Bronze Age (**Early Dynastic I to Ur D III**, circa 2900–2000 BC) Kalleh Nisar, Bani Surmah, Chigha Sabz, Kamtarlan, Sardant, and Gulal-i Galbi—and four dating to different phases of the Iron Age (circa 1300 B.C.–600 B.C.)—Bard-i Bal, Kutul-i Gulgul, Sar Kabud, and War Kabud.

Technically, the term “Lorestan bronze” usually refers only to the later bronze objects, although they have many similarities. The earlier bronze objects were made during the Elam period.

Lorestan was successfully integrated into the **Achaemenid**, **Parthian** and **Sasanian** empires. Parts of the region managed to stay independent during the **Arab**, **Seljuk** and **Mongol** invasions.

According to the *Encyclopedia of Islam*, the **Lors**, previously open adherents of the Ahl-e-Haqq faith, revere bread and fire like the **Zoroastrians**. “Being split up into numerous tribes and sections, they migrate to their summer pastures as separate bands without overall command.

In 1936, **Reza Shah's** army conquered them, forcing many of the survivors to settle in villages under landlords.

In the early 1930s, when British explorer **Freya Stark** visited Lorestan, she reported that few Europeans had visited the area before her, partly due to its remoteness, but also because of the dangers one could expect to encounter among lawless tribespeople.

People and culture: The Lors constitute part of the southwestern branch of the Iranian peoples, who are spread across the Iranian plateau and beyond, stretching from the **Hindu Kush** to central **Anatolia**

and from the **Caucasus** and **Central Asia** to the **Persian Gulf** — a region that is sometimes termed **Greater Iran**. Their language called (**Lori or Lorish language**), is closely related to Persian, and there are two distinct dialects. “Lor-e-Bozorg” (Greater Lor) is spoken by the **Bakhtiaris**, and “Lor-e-Kuchek” (Lesser Lor), spoken by the Lors themselves. People in Boroujerd speak in Boroujerdi Dialect, a local Lori Persian dialect extracted from Lori. Northwest of Lorestan Province is dominated by Laki speakers. Professor **Richard N. Frye** wrote: “Lors and their dialects are closely related to the Persians of Fars province, and naturally belong to the southwestern branch of the Iranian peoples.”

The overwhelming majorities of Lors are Moslems (**Shia**), with a small minority of Yarsanis of the Laki subgroup.

In Khuzestan, Lor tribes are primarily concentrated in the northern part of the province, while in Ilam they are mainly in the southern region.

Before the 20th century the majority of Lors were **nomadic** herders, with an urban minority residing in the city of Khorramabad. There were several attempts by the Pahlavi governments to forcibly settle the nomadic segment of the Lor population. Under Reza Shah, these campaigns tended to be unsuccessful. The last Shah of Iran, Mohammad Reza Pahlavi, used less forceful methods along with economic incentives, which met with greater, though not complete, success. By the mid-1980s the vast majority of Lors had been settled in towns and villages throughout the province or had migrated to the major urban centers.

A number of nomadic Lor tribes continue to exist in the province. Among the settled urban populace the authority of tribal elders still remains a strong influence, though not as dominant as it is among the nomads.

Northern region: In the northern part of Lorestan, formerly known as Lesser Lorestan (Lor-e-Kuchek), live the Faylis, divided into the Pishkuh Lors in the east and Poshtkuh Lors in the adjoining Iraqi territory in the west.

Southern region: The southern part of the province, formerly known as (“Lor-e-Bozorg”), comprises the Bakhtiaris region of the province of Khuzestan and the districts of the Mamasanni and Kohgiluyeh Lors, which are in Fars province. At one time, Greater Lorestan formed an independent state under the Atabegs from A.D.





Falak-ol-aflak Castle

1160 until 1424. Its capital, Idaj, survives as mounds and ruins at Malamir, sixty miles southeast of the city of Shushtar in Khuzestan.

Lorestan bronze with Master of Animals, 9th-8th century BC. Lorestan Soumak saddle bag, late 20th century

Ilkhanid period, Built during the Relief resembles a fish tailed woman holding snakes (Elamite era).

Golden masks excavated in Kalmakareh, dated first half of 1st millennium BC..

Khorramabad

As mentioned before, Khorramabad is the capital of Lorestan Province, and is situated in the chain of Zagros Mountains. The city population is predominantly Lor and Lak, although the two groups are closely related.

According to the 2016 Census of Iran, the population of the city of Khorramabad was 506,471, approximately 28.7% of the total population of the province. Khorramabad is also the most populous city in the province.

In the midst of the city, there is a tall citadel called Falak-ol-aflak (The Heaven of Heavens), a relic of the Sassanid era, which is now nationally popular.

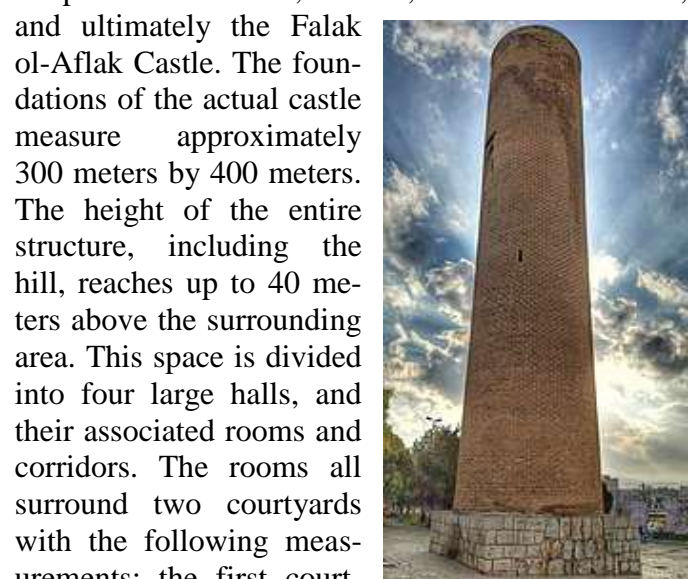
Regardless of Shahpour Khast Castle, which is called Falak-ol-aflak castle, Khorramabad has plenty of ancient attractions.

Shahpour Khast Castle, (Dež-e Shāpūr-Khwāst, Falak-ol-Aflak Castle) known in ancient times as



Sang Nebeshteh

Dezbaz as well as Shapur-Khast, is one of the most impressive castles in Iran. It is situated on top of a large hill with the same name in the city of Khorramabad, the regional capital of Lorestan province. The Khorramabad River runs past the eastern and south-western side of the Shapur-Khast hill providing the fortress with an element of natural protection. Today, the western and northern sides of the hill are bordered by the residential districts of Khorramabad. This gigantic structure was built during the Sassanid era (226–651). It has been known by a number of names since it was built over 1800 years ago. Recorded names have referred to it as Shapur-Khast fortress, Dezbaz, Khorramabad castle, and ultimately the Falak ol-Aflak Castle. The foundations of the actual castle measure approximately 300 meters by 400 meters. The height of the entire structure, including the hill, reaches up to 40 meters above the surrounding area. This space is divided into four large halls, and their associated rooms and corridors. The rooms all surround two courtyards with the following measurements: the first courtyard measures 31×22.50 meters and the second 29×21 meters. When originally built, the castle used to have 12 towers, but only 8 remain standing today. The building's entrance is situated towards the north, within the body of the north-western tower.



Brick Minaret

From the initial day of erection, the castle served a whole variety of purposes including political, military, governmental and social. Now (December 2019), archaeology and anthropology museums are located inside the castle. Bronzes of Lorestan are among the interesting handmade objects inside the archaeology museum. This scarce monument has been inscribed on the national heritage list under the registration number of 883.

Brick Minaret: Brick Minaret is a cylindrical brick tower from Saljuq and Buyid dynasties located inside the ancient city of Shapur Khast, south of Khorramabad.

The Iranian minarets are a combination of the Indian Stupa, commemorative columns, central Asia tradition of tower building for defensive and communication purposes. Brick Minaret of Khorramabad

was probably used as a guidepost for caravans that pass the city, i.e. for communication purpose.

The current height of the minaret is 29.45 meters. Since one of the windows of the minaret is located on top of it, undoubtedly its height was higher. A cylindrical column was built inside the minaret and through 99 spiral staircases around the column one can reach to the top of the minaret. The entrance is open to the west and its characteristics are as follows: length: 80 cm, height: 220 cm. The minaret has six windows of different sizes. The windows spread the light into the dark corridor. Brick and mortar are its main construction material.

This monument has been inscribed on the national heritage list under registration number 1930.

Sang Nebeshteh: Sang Nebeshteh (inscribed stone) is an engraved cubic shape monument with 3.54m height located at the eastern part of Khorramabad city. It dates back to 1119 AD and Saljuq dynasty era. It has been written in Kufic script and its subject is governmental rules of Shapur Khast, which is currently known as Khorramabad city. The carved name of Shapur Khast city can be clearly seen on this monument. This name verifies the existence of Shapur Khast city during old days. It has been inscribed on the national heritage list.

Pol-e Gap: Pol-e Gap is a Safavid multi-arch bridge passing through Khorramabad city and located near to Shapur Khast castle. Its twenty arches except its breakwaters and piles are made from bricks and mortar. The height of bridge is about 18 meters. The bridge is very similar to Si-o-se-pol at Isfahan. About fifty years ago, an inscription has been found inside one of the ruined arches. The inscription has two meters length and 85 centimeters height. Probably, it has been written to protect the bridge from evil eyes and natural phenomena. The bridge has been constructed on Khorramabad river (Gela river) by the order of Shahpour I, during Sassanian period. It was built in the historic rout between Shahpour Khast, Tarhan and Ctesiphon, the capital of Sassanian. Lorestan has more than 70 historical bridges



Kashkan Bridge up for renovation



Gap Bridge

and from this perspective is considered as the capital of ancient Iranian bridges.

Shapouri bridge has 312 meters length and elongated in the east-west direction. Some scholars believe that this bridge was the first gigantic bridge in Lorestan province and other bridges in the province has been built by inspiring from it. It has 28 arches and 27 piles, and a surface of 61 square meters. Currently, five of its arches are intact; the others have been destroyed by natural phenomena. The arches of the bridge have been made in the form of a wishbone. The piles and breakwaters of the bridge are in the form of six lateral lozenges made of limestone. Probably the bridge also was used to distribute water. Materials of the bridge are river stones and stone chips in the arches and truncated stones in the piles. The bridge floor is paved in red block stones that have lost their square shape due to erosion. This attractive, huge bridge from Sassanid dynasty has been inscribed in the national heritage list under registration number 1058.

Kashkan Bridge up for renovation

Kashkan Bridge in Lorestan Province is to be renovated, said the deputy head of Lorestan Cultural Heritage, Handicrafts and Tourism Department.

Mohammadreza Assadi added that the brick arch of the bridge, which goes back to the Qajar era, has been destroyed in the recent floods, IRNA reported. He said Kashkan Bridge is among the historical bridges of Iran. At present, three spans are on the verge of destruction due to floods, he added.

He continued that 100 ancient bridges have been identified across Lorestan Province, of which 97 have been registered on the national heritage list.

“Our funds are meager. We need support at the provincial and national levels to preserve the historic bridges,” he concluded.

Built over a river by the same name, Kashkan Bridge is situated along the ancient route linking Khorramabad to Tehran — a district in Kuhdasht county in Lorestan Province. In the ancient writings

Kashkan was referred to as 'Kazhaki'. The local Lor population of the region call it 'Kashkoo'.

Tablets in Kufic Arabic scripts have been found on the remains of the bridge, dating back to the 9th century CE. According to one script engraved on the base of the bridge, the edifice was built around 10th century CE, but archeological excavations and architectural evidence confirm its antiquity to the Sassanid era.

It is thought that the date on the tablet could have pertained to one of the early renovations.

The bridge is 300 meters long, and originally had 11 columns and 12 arches, some parts of which are in ruins and have not survived. The highest point of the bridge is 26 meters.

Kashkan Bridge is one the most spectacular attractions of Lorestan Province



Akhound Abu House

Akhound Abu House: Akhound Abu House is located in the historical texture of Khorramabad city near to Baba Taher neighborhood and Shahpour Khast castle. It belonged to Mirza Mohsen Ghazi, who was chief justice of the city during late Qajar and early Pahlavi dynasties.

The house is semi-introverted and is divided to winter and summer sections. The first one which is used during winter has two important rooms: Panjdari and Sedari. Panjdari is also called Shahneshin and was the most attractive room of the house. Muqarnas, Zigzag bricks (Khefteh-Rasteh), Golandaz are the main decoration of the house. The construction materials of the house are stone, brick, wood and mortar.

Currently, museum of Lorestan's handicrafts is located inside the house. Tickets to visit this house are free. This monument has been inscribed on the national heritage list under registration number 2432.

Keeyow Lake:

Keeyow Lake in Khorramabad city is a natural lake located in the Northwest of Khorramabad city. In 1975, it has been constructed by the order of Ali



Keeyow Lake

Mohammad Saki, the late mayor of Khorramabad. This lake spans a seven-hectare area and has a depth of 3 to 7 meters. It is the sole natural lake in Iran located inside a city. The lake is an appropriate place for aquatic animals, native and migratory birds. The amusement park as well as other recreational facilities next to the lake enhances its aesthetic and *geotouristic values*. The main spring of the lake is located in the northern part of the lake and is supplied by aquifers from nearby mountains. Since the spring is a seasonal one, during winter the water is supplied from another permanent spring located under Shapur Khast castle, **Golestan spring**.

During holidays many **tourists** and locals spend their leisure time in the amusement park or use other facilities inside a park located near the lake, **Keeyow Park**. It is the most important park of the city. Every morning, many locals come to use the sporting facilities and/or do the hiking and running around the lake.

Qajeh (Moqar) Cave: This cave is located in the southeast of the Mountain called Koohe Yafteh in the district of Changi Khorramabad.

The opening of this cave faces east, and inside there are pools with very cold water to the depth of 1.5m. The cave also has stalactites and stalagmites. The cave forms a shelter for hunters and is a sightseeing area with its natural surroundings.



Khorramabad Valley

Khorramabad Valley – The valley is 15 km long, nestling among the Limestone Mountains at an elevation of 1170m. Enhanced with natural beauty in addition to the springs, rivers, forests and caves in the vicinity.

There are some well categorized Hotels in Khorramabad such as Shaghayegh Hotel.

Sangi whirlpool which is called Gerdab Sangi or Gerdau Bardina is a cylindrical shape monument from Sassanid dynasty (224-651 CE) located in Takhti Square. The main construction materials are lime-mortar and rocks exploited from SefidKouh mountain. Encircling several springs, the edifice sits near the prehistoric Qamari Cave. The construction was once used for rationing and distributing potable and agricultural water among local population and farmers. Its surrounding cylindrical stone wall has a height of 10 meters and a diameter of 18 meters. There are a few different-sized outlets in the wall for controlling the flow of water into a canal on the west of the structure. Originally, there were seven such outlets, however, today only one is functional. This outlet measures 160 by 90 centimeters and opens and closes like a drawer. There is traces of another outlet from which the water was flowing and was reaching to a stream called Nahr-e Naseri. The flowing water after a path of approximately 12 kilometers, would eventually made its way to a valley called Baba Abbas. The main interesting thing is the way that they have conducted the water to the stream. Gerdab Sangi has been inscribed on the national heritage list in 1976.

Kalmakareh Cave: This Cave is located 20 km southwest of Pol Dokhtar on the way to the province Khuzestan, situated in a historical and ancient valley known as Darreh Bagh on the heights of Kuh Mahalleh. The cave is valuable, both as a natural phenomenon and from the cultural aspect. Vast spaces and crevices have created a mysterious atmosphere in the cave. The cave holds great importance regarding the remnants of ancient civilizations. At the entrance and within the cave are evidences of the presence of humans and animals of the past. Due to earthquakes or natural erosion of the mountain, some of the so-called 'halls' in this cave have been blocked. The heights of the Kuh Mahalleh are in a triangular shape, with the two rivers of Seimareh and Kashkan running on either sides. This brings into focus as to why this area was favored by man in the pre-historic and historic ages, especially during the Elamite, Parthian and Sassanian period. Vestiges such as earthenware, large pots covered with limestone residue, can be noted within

the cave, as well as the hill-locks surrounding it. This cave does not seem to have been permanently inhabited, but was a good hiding place or refuge at the time of



Sangi Whirlpool

attacks and war for the inhabitants of 'Kuh Mahalleh'. There is also a possibility that the cave was used as a shelter by out-laws and revolutionaries in the past. Some of the silver relics found in the cave, including wild animal figures, silver jugs, rhytons, gold and silver coins are kept at Falak-ol-Aflak Museum in Khorramabad. Also, some of the cave's objects are kept at National Museum of Iran in Tehran, and the museums of Tabriz and Ilam. In addition, Persian Griffin Cup, which dates back to Achaemenid Era, was found in Kalmakareh Cave. Many of the historical and precious objects discovered in Kalmakareh Cave in 1989, which have been referred to as one of the six global treasures, are today in French, German and Japanese museums. Many of the objects taken abroad have been displayed in the museums of New York, Los Angeles, London and Vienna. The artistic relics of Kalmakareh Cave are valuable not only because of their exquisite design and production, but also as precious specimens of Iran's cultural heritage. Their repatriation from foreign museums should be pursued.



Kalmakareh Cave

Abubakr Zakaria Razi



Philosopher of Rey

Abubakr Zakariya Razi, the Iranian physician, also known as philosopher of Rey (ca. 865-925) was a Persian polymath, physician, alchemist, philosopher, and important figure in the history of medicine. He prepared compilations that were influential in Western medicine for centuries. His monograph on smallpox and measles is still considered a medical classic. He also wrote on logic, astronomy and grammar.

George Sarton remarked him as "the greatest physician of the Medieval Ages".

Biography: Razi was born in the city of Rey situated on the Great Silk Road that for centuries facilitated trade and cultural exchanges between East and West.

In his youth time, Razi moved to Baghdad where he studied and practiced at the local hospital. Later, he was invited back to Rey by Mansur Ibn Ishaq, the then governor of Rey. Popular as a physician, Razi was invited to Baghdad where he assumed the responsibilities of a director in a new hospital named after its founder al-Mu'taḍid (d. 902 CE). Under the reign of Al-Mujtahid's son, Al-Moktafi (r. 902-908) Razi was commissioned to build a new hospital, which should be the largest of the Abbasid Caliphate. To pick the future hospital's location, Razi adopted what is nowadays known as an evidence-based approach suggesting having fresh meat hung in various places throughout the city and to build the hospital where meat took longest to rot.

He spent the last years of his life in his native Rey suffering from glaucoma. His eye affliction started with cataracts and ended in total blindness. The cause of his blindness is uncertain. One account mentioned by Ibn Juljul attributed the cause to a

blow to his head by his patron, Mansur ibn Eshaq, for failing to provide proof for his alchemy theories; while Abulfaraj and Casiri claimed that the cause was a diet of beans only. Allegedly, he was approached by a physician offering an ointment to cure his blindness. Al-Razi then asked him how many layers does the eye contain and when he was unable to receive an answer, he declined the treatment stating "my eyes will not be treated by one who does not know the basics of its anatomy."

The lectures of Razi attracted many students. As Ibn al-Nadim relates in *Fehrest*, Razi was considered a *sheikh*, an honorary title given to one entitled to teach and surrounded by several circles of students. When someone raised a question, it was passed on to students of the 'first circle'; if they did not know the answer, it was passed on to those of the 'second circle', and so on. When all students would fail to answer, Razi himself would consider the query. Razi was a generous person by nature, with a considerate attitude towards his patients. He was charitable to the poor, treated them without payment in any form, and wrote for them a treatise *Man La Yahḍuruḥu al-Ṭabīb*, or *Who Has No Physician to Attend Him*, with medical advice. One

former pupil from Ṭabarestān came to look after him, but as al-Biruni wrote, Razi rewarded him for his intentions and sent him back home, proclaiming that his final days were approaching. According to Biruni, Razi died in Rey in 925 sixty years of age. Biruni, who considered Razi as his mentor, was among the first who penned a short biography of Razi including a bibliography of his numerous works.

Ibn al-Nadim recorded an account by Razi of a Chinese student who copied down all of Galen's works in Chinese as Razi read them to him out loud after the student learned fluent Arabic in 5 months and attended Razi's lectures.

After his death, his fame spread beyond the Middle East to Medieval Europe, and lived on. In an undated catalog of the library at Peterborough Abbey, most likely from the 14th century, Razi is listed as a part author of ten books on medicine.

The statue of Razi in the "Scholars Pavilion" in United Nations Office in Vienna

The modern-day Razi Institute in Karaj and Razi University in Kermanshah were named after him. A "Razi Day" ("Pharmacy Day") is commemorated in Iran every 27 August.

In June 2009, Iran donated a "Scholars Pavilion" to the United Nations Office in Vienna, now placed in the central Memorial Plaza of the Vienna International Center



*The statue of Razi in the "Scholars Pavilion"
In United Nations Office in Vienna*

The pavilion features the statues of Razi, Avicenna, Abu Rayhan Biruni, and Omar Khayyam.

Contributions to medicine, Psychology and psychotherapy

Razi was one of the world's first great medical experts. He is considered the father of psychology and psychotherapy.

About Smallpox vs. measles, Razi wrote: Smallpox appears when blood "boils" and is infected, resulting in vapours being expelled. Thus juvenile blood (which looks like wet extracts appearing on the skin) is being transformed into richer blood, having the color of mature wine. At this stage, smallpox shows up essentially as "bubbles found in wine" (as blisters)... this disease can also occur at other times (meaning: not only during childhood). The best thing to do during this first stage is to keep away from it, otherwise this disease might turn into an epidemic.

This diagnosis is acknowledged by the *Encyclopædia Britannica* (1911), which states: "The most trustworthy statements as to the early existence of the disease are found in an account by the 9th-century Persian physician Razi, by whom its symptoms were clearly described, its pathology explained by a humoral or fermentation theory, and directions given for its treatment."

Razi's book *al-Judari wa al-Hasbah* (*On Smallpox and Measles*) was the first book describing smallpox and measles as distinct diseases. It was translated more than a dozen times into Latin and other European languages. Its lack of dogmatism and its Hippocratic reliance on clinical observation show Razi's medical methods. For example, he wrote:

The eruption of smallpox is preceded by a continued fever, pain in the back, itching in the nose and nightmares during sleep. These are the more acute symptoms of its approach together with a noticeable pain in the back accompanied by fever and an itching felt by the patient all over his body. A swelling of the face appears, which comes and goes, and one notices an overall inflammatory color noticeable as a strong redness on both cheeks and around both eyes. One experiences a heaviness of the whole body and great restlessness, which expresses itself as a lot of stretching and yawning. There is a pain in the throat and chest and one finds it difficult to breathe and cough. Additional symptoms are: dryness of breath, thick spittle, and hoarseness of the voice, pain and heaviness of the head, restlessness, nausea and anxiety. (Note the difference: restlessness, nausea and anxiety occur

more frequently with "measles" than with smallpox. At the other hand, pain in the back is more apparent with smallpox than with measles). Altogether one experiences heat over the whole body, one has an inflamed colon and one shows an overall shining redness, with a very pronounced redness of the gums. (Rhazes, *Encyclopaedia of Medicine*)

Meningitis: Razi compared the outcome of patients with meningitis treated with blood-letting with the outcome of those treated without it to see if blood-letting could help.

Pharmacy: Razi contributed in many ways to the early practice of pharmacy by compiling texts, in which he introduces the use of "mercurial ointments" and his development of apparatus such as mortars, flasks, spatulas and phials, which were used in pharmacies until the early twentieth century.

Ethics of medicine: On a professional level, Razi introduced many practical, progressive, medical and psychological ideas. He attacked charlatans and fake doctors who roamed the cities and countryside selling their nostrums and "cures". At the same time, he warned that even highly educated doctors did not have the answers to all medical problems and could not cure all sicknesses or heal every disease, which was humanly speaking impossible. To become more useful in their services and truer to their calling, Razi advised practitioners to keep up with advanced knowledge by continually studying medical books and exposing themselves to new information. He made a distinction between curable and incurable diseases. Pertaining to the latter, he commented that in the case of advanced cases of cancer and leprosy the physician should not be blamed when he could not cure them. To add a humorous note, Razi felt great pity for physicians who took care for the wellbeing of princes, nobility, and women, because they did not obey the doctor's orders to restrict their diet or get medical treatment, thus making it most difficult being their physician. He also wrote the following on **medical ethics:** The doctor's aim is to do well, even to our enemies, so much more to our friends, and my profession forbids us to do harm to our kindred, as it is instituted for the benefit and welfare of the human race, and God imposed on physicians the oath not to compose mortiferous remedies.

Books and articles on medicine:

(*Ketab al Hawi*) This 23-volume set medical textbooks contains the foundation of gynecology, obstetrics and ophthalmic surgery.

The Virtuous Life (*al-Hawi* الحاوي).

This monumental medical encyclopedia in nine volumes—known in Europe also as *The Large Comprehensive* or *Continents Liber*—contains considerations and criticism on the Greek philosophers Aristotle and Plato, and expresses innovative views on many subjects. Because of this book alone, many scholars consider Razi the greatest medical doctor of the Middle Ages.

The *al-Hawi* is not a formal medical encyclopedia, but a posthumous compilation of Razi's working notebooks, which included knowledge gathered from other books as well as original observations on diseases and therapies, based on his own clinical experience. It is significant since it contains a celebrated monograph on smallpox, the earliest one known. It was translated into Latin in 1279 by Faraj ben Salim, a physician of Sicilian-Jewish origin employed by Charles of Anjou, and after which it had a considerable influence in Europe.

The *al-Hawi* also criticized the views of Galen, after Razi had observed many clinical cases which did not follow Galen's descriptions of fevers. For example, he stated that Galen's descriptions of urinary ailments were inaccurate as he had only seen three cases, while Razi had studied hundreds of such cases in hospitals of Baghdad and Rey.

Razi was possibly the first Persian doctor to deliberately write a home medical manual (remedial) directed at the general public. He dedicated it to the poor, the traveler, and the ordinary citizen who could consult it for treatment of common ailments when a doctor was not available. This book is of special interest to the history of pharmacy since similar books were very popular until the 20th century. Razi described in its 36 chapters, diets and drug components that can be found in either an apothecary, a market place, in well-equipped kitchens, and in military camps. Thus, every intelligent person could follow its instructions and prepare the proper recipes with good results.

Some of the illnesses treated were headaches, colds, coughing, melancholy and diseases of the eye, ear, and stomach. For example, he prescribed for a feverish headache: "2 parts of *duhn* (oily extract) of rose, to be mixed with 1 part of vinegar, in which a piece of linen cloth is dipped and compressed on the forehead". He recommended as a laxative, "7 Grams of dried violet flowers with 20 pears, macerated and well mixed, then strained. Add to this filtrate, 20 grams of sugar for a drink. In cases of melancholy, he invariably recommend-

ed prescriptions, which included either poppies or its juice (opium), *Cuscuta epithymum* (clover dodder) or both. For an eye-remedy, he advised myrrh, saffron, and frankincense, 2 drams each, to be mixed with 1 dram of yellow arsenic formed into tablets. Each tablet was to be dissolved in a sufficient quantity of coriander water and used as eye drops.

Doubts About Galen (Shukuk 'ala alinusor)

In his book *Doubts about Galen*, Razi rejects several claims made by the Greek physician, as far as the alleged superiority of the Greek language and many of his cosmological and medical views. He links medicine with philosophy, and states that sound practice demands independent thinking. He reports that Galen's descriptions do not agree with his own clinical observations regarding the run of a fever. And in some cases he finds that his clinical experience exceeds Galen's.

He criticized Galen's theory that the body possessed four separate "humors" (liquid substances), whose balance are the key to health and a natural body-temperature. A sure way to upset such a system was to insert a liquid with a different temperature into the body resulting in an increase or decrease of bodily heat, which resembled the temperature of that particular fluid. Razi noted that a warm drink would heat up the body to a degree much higher than its own natural temperature. Thus the drink would trigger a response from the body, rather than transferring only its own warmth or coldness to it.

This line of criticism essentially had the potential to completely refute Galen's theory of humors, as well as Aristotle's theory of the four elements, on which it was grounded. Razi's own alchemical experiments suggested other qualities of matter, such as "oiliness" and "sulphurousness", or inflammability and salinity, which were not readily explained by the traditional fire, water, earth, and air division of elements.

Razi's challenge to the current fundamentals of medical theory was quite controversial. Many accused him of ignorance and arrogance, even though he repeatedly expressed his praise and gratitude to Galen for his contributions and labors, saying:

I prayed to God to direct and lead me to the truth in writing this book. It grieves me to oppose and criticize the man Galen from whose sea of knowledge I have drawn much. Indeed, he is the Master and I am the disciple. Although this reverence and appreciation will and should not prevent me from doubting, as I did, what is erroneous in his theo-

ries. I imagine and feel deeply in my heart that Galen has chosen me to undertake this task, and if he were alive, he would have congratulated me on what I am doing. I say this because Galen's aim was to seek and find the truth and bring light out of darkness. I wish indeed he were alive to read what I have published.

Crystallization of ancient knowledge, and the refusal to accept the fact that new data and ideas indicate that present day knowledge ultimately might surpass that of previous generations.

Razi believed that contemporary scientists and scholars are by far better equipped, more knowledgeable, and more competent than the ancient ones, due to the accumulated knowledge at their disposal. Razi's attempt to overthrow blind acceptance of the unchallenged authority of ancient sages encouraged and stimulated research and advances in the arts, technology, and sciences.

The Diseases of Children

Razi's *The Diseases of Children* was the first monograph to deal with pediatrics.

Translated Works

Razi's notable books and articles on medicine (in English) include:

- *Mofid al Khavas*, The Book for the Elite.
- *The Book of Experiences*
- *The Cause of the Death of Most Animals because of Poisonous Winds*
- *The Physicians' Experiments*
- *The Person Who Has No Access to Physicians*
- *The Big Pharmacology*
- *The Small Pharmacology*
- *Gout*
- *The Doubt on Galen*
- *Kidney and Bladder Stones*
- *The Spiritual Physik of Razi.*

Alchemy



A western depiction of Razi

Chemical instruments and substances: Razi developed several chemical instruments that remain in use to this day. He is known to have perfected methods of distillation to gain alcohol and extraction. Razi dismissed the idea of potions and dispensed with magic, meaning the reliance on symbols as causes. Although Razi does not reject the idea that miracles exist, in the sense of unexplained phenomena in nature, his alchemical stockroom was enriched with products of Persian mining and manufacturing, even with sal ammoniac, a Chinese discovery. He relied predominantly on the concept of 'dominant' forms or essences, which is the Neoplatonic conception of causality rather than an intellectual approach or a mechanical one. Razi's alchemy brings forward such empiric qualities as salinity and inflammability - the latter associated to 'oiliness' and 'sulphurousness'. These properties are not readily explained by the traditional composition of the elements such as: fire, water, earth and air, as al-óhazali and others after him were quick to note, influenced by critical thoughts such as Razi's.

Major works on alchemy: Razi's works present the first systematic classification of carefully observed and verified facts regarding chemical substances, reactions and apparatus, described in a language almost entirely free from mysticism and ambiguity.

* *The Secret (Al-Asrar)*

This book was written in response to a request from Razi's close friend, colleague, and former student, Abu Mohammed b. Yunis of Bukhara, a Muslim mathematician, philosopher, and natural scientist. In the book *Sirr al-Asrar*, Razi divides the subject of "Matter" into three categories, as in his previous book *al-Asrar*.

1. Knowledge and identification of the medical components within substances derived from plants, animals and minerals, and descriptions of the best types for medical treatments.
2. Knowledge of equipment and tools of interest to and used by either alchemists or apothecaries.
3. Knowledge of seven alchemical procedures and techniques: sublimation and condensation of mercury, precipitation of Sulphur, and arsenic calcination of minerals (gold, silver, copper, lead, and iron), salts, glass, talc, shells, and waxing.

This last category contains additional descriptions of other methods and applications used in transmutation:

* the added mixture and use of solvent vehicles.

* The amount of heat (fire) used, 'bodies and stones', (*'al-ajsad'* and *'al-ahjar'*) that can or cannot be transmuted into corporal substances such of metals and Id salts (*'al-amlah'*).

* The use of a liquid mordant which quickly and permanently colors lesser metals for more lucrative sale and profit.

Similar to the commentary on the 8th century text on amalgams ascribed to Al- Hayan (Jabir), Razi gives methods and procedures of coloring a silver object to imitate gold (gold leafing) and the reverse technique of removing its color back to silver. Gilding and silvering of other metals (alum, calcium salts, iron, copper, and . . .) are also described, as well as how colors will last for years without tarnishing or changing.

Razi classified minerals into six divisions:

1. Four spirits (*AL-ARWAH*) mercury, Sal ammoniac, sulfur, and arsenic sulphide (orpiment and realgar).
2. Seven bodies (*AL-AJSAD*): silver, gold, copper, iron, black lead (plumb ago), zinc (Kharsind), and tin.
3. Thirteen stones: (*AL-AHJAR*) Pyrites marcasite (*marqashita*), magnesia, malachite, tutty Zinc oxide (*tutiya*), talcum, lapis lazuli, gypsum, azurite, magnesia, haematite (iron oxide), arsenic oxide, mica and asbestos and glass (then identified as made of sand and alkali of which the transparent crystal Damascene is considered the best),
4. Seven vitriols (*AL-ZAJAT*): alum (*al-shabb* الشب), and white (*qalqadis* القلقديس), black, red (suri السوري), and yellow (*qulqutar* القلقطار) vitriols (the impure sulfates of iron, copper, etc.), green (*qalqand* القلقند).
5. Seven borates : natron, and impure sodium borate.
6. Eleven salts (*AL-AMLAH*): including brine, common (table) salt, ashes, naphtha, live lime, and urine, rock, and sea salts. Then he separately defines and describes each of these substances, the best forms and colours of each, and the qualities of various adulterations.

Razi gives also a list of apparatus used in alchemy. This consists of 2 classes:

1. Instruments used for dissolving and melting metals such as the Blacksmith's hearth, bellows, crucible, thongs (tongue or ladle), macerator, stirring rod, cutter, grinder (pestle), file, shears, descensory and semi-cylindrical iron mould.
2. Utensils used to carry out the process of transmutation and various parts of the distilling apparatus: the retort, alembic, shallow iron pan, potters kiln and blowers, large oven, cylindrical stove, glass cups, flasks, phials, beakers, glass funnel, crucible, alundel, heating lamps, mortar, cauldron, hair-cloth, sand- and water-bath, sieve, flat stone mortar and chafing-dish.

Razi's known books on alchemy, mostly in Persian:

Philosophy: Metaphysics: The metaphysical doctrine of Razi derives from the theory of the "five eternal", according to which the world is produced out

of an interaction between God and four other eternal principles (soul, matter, time, and place). He accepted a pre-socratic type of atomism of the bodies, and for that he differed from both the falasifa and the mutakallimun. While he was influenced by Plato and the medical writers, mainly Galen, he rejected taqlid and thus expressed criticism about some of their views. This is evident from the title of one of his works, *Doubts About Galen*.

Excerpt from *the Philosophical Approach*: In short, while I am writing the present book, I have written so far around 200 books and articles on different aspects of science, philosophy, theology, and *hekmat* (wisdom). (...) I never entered the service of any king as a military man or a man of office, and if I ever did have a conversation with a king, it never went beyond my medical responsibility and advice. (...) Those who have seen me know that I am not into excess with eating, drinking or acting the wrong way. As to my interest in science, people know perfectly well and must have witnessed how I have devoted all my life to science since my youth. My patience and diligence in the pursuit of science has been such that on one special issue specifically I have written 20,000 pages (in small print), moreover I spent fifteen years of my life -night and day- writing the big collection entitled *Al Hawi*. It was during this time that I lost my eyesight, my hand became paralyzed, with the result that I am now deprived of reading and writing. Nonetheless, I've never given up, but kept on reading and writing with the help of others. I could make concessions with my opponents and admit some shortcomings, but I am most curious what they have to say about my scientific achievement. If they consider my approach incorrect, they could present their views and state their points clearly, so that I may study them, and if I determined their views to be right, I would admit it. However, if I disagreed, I would discuss the matter to prove my standpoint. If this is not the case, and they merely disagree with my approach and way of life, I would appreciate them only use my written knowledge and stop interfering with my behaviour.

In the *Philosophical Biography*, as seen above, he defended his personal and philosophical life style. In this work, he laid out a framework based on the idea that there is life after death full of happiness, not suffering. Rather than being self-indulgent, man should pursue knowledge, utilize his intellect and apply justice in his life. According to Al-Razi: "This is what our merciful Creator wants. The One to whom we pray for reward and whose punishment we fear."

In brief, man should be kind, gentle and just. Al-Razi believed that there is a close relationship between spir-

itual integrity and physical health. He did not implicate that the soul could avoid distress due to his fear of death. He simply states that this psychological state cannot be avoided completely unless the individual is convinced that, after death, the soul will lead a better life. This requires a thorough study of esoteric doctrines and/or religions. He focuses on the opinion of some people who think that the soul perishes when the body dies. Death is inevitable, therefore one should not pre-occupy the mind with it, because any person who continuously thinks about death will become distressed and think as if he is dying when he continuously ponders on that subject. Therefore, he should forget about it in order to avoid upsetting himself. When contemplating his destiny after death, a benevolent and good man who acts according to the ordinances of the Islamic *Shari'ah*, has after all nothing to fear because it indicates that he will have comfort and permanent bliss in the Hereafter. The one who doubts the *Shari'ah*, may contemplate it, and if he diligently does this, he will not deviate from the right path. If he falls short, Allah will excuse him and forgive his sins because it is not demanded of him to do something which he cannot achieve.

Books on philosophy: This is a partial list of Razi's books on philosophy. Some books may have been copied or published under different titles.

- *The Small Book on Theism*
- *Response to Abu'al'Qasem Braw*
- *The Greater Book on Theism*
- *Modern Philosophy*
- *Dar Roshan Sakhtane Eshtebaah*
- *Dar Enteghaade Mo'tazlian*
- *Delsoozi Bar Motekaleman*
- *Meydaneh Kherad*
- *Khasel*
- *Resaaleyeh Rahnamayeh Fehrest*
- *Ghasideyeh Ilaahi*
- *Dar Alet Afarineshe Darandegan*
- *Shakkook*
- *Naghseh Ketabe Tadbir*
- *Naghshnamehyeh Ferforius*
- *Do name be Hasanebne Moharebe Ghomi*

Notable books in English:

- *Spiritual Medicine*
- *The Philosophical Approach (Al Syrat al Falsafiah)*
- *The Metaphysics*

Chess: Razi was a chess rival of Abbasid Caliph al-Motawakkel. Al-Nadim lists Razi among a group of five authors of books on *Shatranj* (Chess), who were: Abū Bakr al-Šūlī, Al-'Adlī, Abol-Faraj al-Lajlāj and Ibn al-Uqlīdasī. The title of Razi's book was: *Ketāb al latīf fī Shatranj* (كتاب لطيف في الشطرنج) 'A Delightful Book about Chess.

The Ten Point Plan for a Green Industrial Revolution



Two centuries ago the UK led the world's first Industrial Revolution. Powered by innovation and private investment, this transformation gave birth to many of our great cities and effectively created the modern world. Today we will mobilise the same forces to level up our country and enable our proud industrial heartlands to forge the future once again. By investing in clean technologies – wind, carbon capture, hydrogen and many others – Britain will lead the world into a new Green Industrial Revolution.

As the world begins to recover from the devastating impact of the coronavirus on lives and livelihoods, a broader transformation is taking shape. We will create hundreds of thousands of new jobs by investing in pioneering British industries while simultaneously protecting future generations from climate change and the remorseless destruction of habitats.

Britain is already leading the way. Over the last 30 years, we have shown that economic success and environmental responsibility go hand in hand. We expanded our GDP by 75% while cutting emissions by 43%. Our low-carbon industries already

support over 460,000 jobs, from electric vehicle manufacturing in the Midlands and the North East to our thriving offshore wind industry centred on the Humber and the Tees. In 2019, we became the first major economy to adopt a legally binding obligation to reach net zero greenhouse gas emissions by 2050.

This year, our Ten Point Plan will lay the foundations for a Green Industrial Revolution. We will start by supporting 90,000 jobs across the UK within this Parliament, and up to 250,000 by 2030. Engineers, fitters, construction workers and many others will be engaged in harnessing British science and technology to create and use clean energy and forge great new industries that export to new markets around the world. Our Lifetime Skills Guarantee will equip people with the training they need to take advantage of these opportunities.

The government has announced over £5 billion to support a green recovery. This plan mobilises £12 billion – and potentially more than three times as much from the private sector – to place green jobs at the heart of our economic revival. As the world goes green, we will seek to put the UK at the fore-



front of global markets for clean technology. One measure of the opportunity is that 83% of the \$13.3 trillion of global investment in electricity systems by 2050 could be in zero-carbon technologies.

We will generate new clean power with offshore wind farms, nuclear plants and by investing up to half a billion pounds in new hydrogen technologies. We will use this energy to carry on living our lives, running our cars, buses, trucks and trains, ships and planes, and heating our homes while keeping bills low. And to the extent that we still emit carbon, we will pioneer a new British industry dedicated to its capture and return to under the North Sea. Together these measures will reinvigorate our industrial heartlands, creating jobs and growth, and pioneering world-leading SuperPlaces that unite clean industry with transport and power. All of these ambitions will be propelled by doubling down on Britain's world-leading expertise in green finance and innovation.

Finally, we will harness nature's ability to absorb carbon by establishing new National Parks and Areas of Outstanding Natural Beauty, and making them even greater havens of biodiversity, with the aim of protecting 30% of England's countryside by 2030. We will use the freedoms we regain by leaving the EU to support Britain's farmers so that, alongside producing high-quality food, we ensure healthy soils which will also retain and – over time – capture carbon. We will restore our peatlands and woodlands, create the Nature Recovery Network and wilder landscapes, generating new jobs in nature and land management. And we will better adapt and protect our communities from the al-

ready visible effects of climate change by investing in flood defences and using nature-based solutions to increase flood resilience.

The cumulative effect of this plan will be to reduce UK emissions by 180 million tonnes of carbon dioxide equivalent (MtCO₂e) between 2023 and 2032, equal to taking all of today's cars off the road for around 2 years. But this is only the start. Over the next year we will work with industry to devise further sectoral plans and meet our carbon budgets and target of net zero by 2050. To drive our progress towards this national priority, the Prime Minister will establish a new Task Force Net

Zero, putting a systems approach at the heart of our thinking.

But action by the UK alone will not be sufficient to avoid catastrophic climate change. Our Ten Point Plan strengthens our ability to bring other countries with us and positions Britain as a leader in the green technologies we all need to employ. Through our Presidency of the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties 26 (COP26) in Glasgow, the UK will urge ambitious action from countries, businesses, cities, and investors alike. Together we will deliver the promises of the 2015 Paris Agreement and drive progress towards global net zero. And next month, alongside the UN and France, the UK will host a Climate Ambition Summit five years after COP21 in Paris to rally the world behind the goal of a greener, more resilient and sustainable future.

Point 1: Advancing offshore wind

Point 2: Driving the growth of low carbon hydrogen

Point 3: Delivering new and advanced nuclear power

Point 4: Accelerating the shift to zero emission vehicles

Point 5: Green public transport, cycling and walking

Point 6: Jet zero and green ships

Point 7: Greener buildings

Point 8: Investing in carbon capture, usage and storage

Point 9: Protecting our natural environment

Point 10: Green finance and innovation

Short Economic News

World Short Economic News:

'Scores' detained as students in Belarus protest against President Lukashenko

Students protest in Minsk protesting against the disputed re-election of Belarus' authoritarian president Alexander Lukashenko.

Belarusian police confirmed that a number of people were detained as they marched towards the Education Ministry building in the capital Minsk.

Social media videos verified by Euronews show students breaking through police cordons as authorities attempted to force the crowd to change route.

Some held banners demanding freedom for political prisoners, as passing vehicles sounded their horns in support.

The demonstrations marked a fourth week of mass protests that have rocked the country since the disputed election result on August 9.

The Viasna human rights centre reported that at least 62 people were detained, including eight journalists. Euronews has seen images of injured protestors who say they were assaulted by police.

"This regime is based on lies and violence, and it will never protect us," says Nadia, a student who took part in the protests. "Every day people are being beaten and detained in prison, but we continue, because we want this horror to end."

Michaś, a student at the Belarusian State Medical University, did not strike from classes, but later joined an estimated 200 students on the university's steps after his studies.

"It has to change," he told Euronews on Tuesday.

"By this protest, we want to show that...all kinds of people here in our country are against Lukashenko's government, many strains of people are participating".

After an internationally condemned violent crackdown in the immediate aftermath of the election, Belarus' authorities have moved to threats of legal action and detention in an attempt to contain the unrest.



Organizers of demonstrations at industrial plants have been detained, and legal proceedings brought against members of the so-called 'Opposition Council'.

Students taking part in the walkouts told Euronews they were prepared to risk arrest to get their message across.

"We want to live in this country, but we have to build our dream on our own," another student, Anastasia, told Euronews.

"I'm not afraid of being arrested but I am afraid to live in this violence and dictatorship that I see."

"My friends and family do not see a future in this country with the current government," added Veronica, who also took part in demonstrations in Minsk on Tuesday.

"We will go out every day until we are heard and we have taken back our rights".

[It marks a change of tactics by the government, which has avoided the large-scale violence against protesters witnessed amid the ferocious crackdown immediately after the election](#)

Boris Johnson tells UK parents to send their children back to school



In this Aug. 10, 2020, file photo, Britain's Prime Minister Boris Johnson visits St Joseph's Catholic Primary School, London.

Britain's prime minister has asked parents to set aside their fears and send their children back to school next month when schools in England, Wales and Northern Ireland fully reopen for the first time since the coronavirus pandemic shut them down more than five months ago.

Prime Minister Boris Johnson said it was the government's "moral duty" to reopen the schools as he stressed that authorities now know more about COVID-19 than they did when the country went into lockdown on March 23.

Johnson's comments came hours after Britain's top public health officials issued a joint statement saying that children were more likely to be harmed by staying away from school than from being exposed to COVID-19.

"This is why it's vitally important that we get our children back into the classroom to learn and to be with their friends," Johnson said in a statement released late Sunday. "Nothing will have a greater effect on the life chances of our children than returning to school." The statements come as parents and teachers have express concerns about reopening schools amid fears that social distancing measures won't keep children safe. Unions have demanded that Johnson's Conservative govern-

ment make sure that social distancing measures and other protective procedures are in place to ensure the safety of students and staff.

Labour leader Sir Keir Starmer criticised Johnson, saying that the safe return of pupils to schools had been put at serious risk due to the botched handling of the A-level exam results, adding that a crucial two weeks' of preparation had been lost limiting the fallout of the fiasco.

In an interview with The Observer newspaper on Sunday, he said: "I want to see children back at school next month, and I expect the prime minister to deliver on that commitment. However, the commitment is now at serious risk after a week of chaos, confusion, and incompetence from the government."

Schools across the UK closed in March as the government sought to control the spread of coronavirus. Some students in England were allowed to return in early June, but classes weren't mandatory and only about 18 per cent of students took part.

In Scotland, pupils made a full return to schools last week, nearly five months after they closed due to the pandemic. Social distancing has not been

enforced in most schools but hygiene and safety measures have been put in place.

Long-term harm

The chief medical officers of England, Scotland, Northern Ireland and Wales said in their statement that children are less likely to catch COVID-19 than adults and they have "an exceptionally low risk" of dying from the disease.

By contrast, they said studies show that not going to school limits children's ability to succeed in life and may worsen physical and mental health problems.

"Very few, if any, children or teenagers will come to long-term harm from COVID-19 due solely to attending school," the medical officers said. "This has to be set against a certainty of long-term harm to many children and young people from not attending school."

In a statement, Dr Patrick Roach, General Secretary of the teaching union NASUWT said: "As we have made clear since the start of this crisis, gov-

ernments and administrations must follow the scientific evidence and advice when planning for the reopening of schools.

"The joint statement issued by the UK's chief medical officers underlines the critical importance of safe working practices in schools, ensuring that social distancing and stringent hygiene measures are in place and secure at all times, particularly for those with underlying health conditions."

Britain has the highest confirmed virus-related death toll in Europe, at 41,515 people, and Johnson's government has been strongly criticized for not locking down sooner, not getting medical workers enough protective equipment and not properly protecting the elderly in care homes from the virus.

Thousands of British travellers had to cut short vacations and rush home earlier this month after the government abruptly announced it was slapping 14-day quarantines on people returning from France.

Watch: UK PM Boris Johnson quizzed over summer exams fiasco



Britain's Prime Minister Boris Johnson speaks during a Cabinet meeting of senior government ministers.

Boris Johnson was pressed on his government's efforts to safely return people back to work and school after the coronavirus lockdown, in the first Prime Minister's Questions since the summer break. It comes as British children return to the classroom following the lockdown measures aimed at curbing the spread of COVID-19.

Johnson was criticised over the government's decision to scrap exams and use an algorithm to calculate results, which resulted in 40% of grades being lower. The government later made a U-turn and used teacher assessments to grade students.

Responding to criticism from the opposition, Johnson refused to say when he found out that there was a problem with the algorithm.

"Doing the decent thing and this prime minister don't go together," Labour opposition leader Keir Starmer said, saying the summer was wasted.

Starmer said the policy changes were "mess after mess" and "U-turn after U-turn". Johnson defended his record, stating that the UK had invested in vaccines and treatments for COVID-19 and that UK children were going back to school. Starmer said going back to school was safe but said Johnson's education secretary was "incompetent". It came after the head of Ofqual said in the written statement on Wednesday that the Department of Education was aware of the potential "risks" and "impact" of using teacher assessments.

PRINCE WILLIAM LAUNCHES 'PRESTIGIOUS' €55M PRIZE TO FIND CLIMATE CHANGE SOLUTIONS



The Duke of Cambridge launched the prize with an appearance on the BBC alongside David Attenborough

A new environmental prize launched today by the Duke of Cambridge will see €55m awarded over

10 years to those finding solutions to the climate crisis.

The **Earthshot Prize** is being called “the most prestigious global environment prize in history” and aims to help save the planet by 2030. In the next 10 years, five €1.1m prizes will be awarded every year, with a goal of funding at least 50 environmental projects.

It is inspired by John F. Kennedy’s “moonshot” plan which united millions of people behind the idea of humans setting foot on the moon.

There are five “Earthshots”, or goals, to protect and restore nature, clean our air, revive our oceans, build a waste-free world and fix our climate.

The Earthshot Prize Council, whose members span six continents, will decide on a winner per category, alongside the Duke of Cambridge.

Meet Norway’s 21st Century Viking



Espen Hatleskog and his Alaskan malamute, Fenris.

Deep in the wild of Western Norway, Espen Hatleskog and his Alaskan malamute, Fenris, spend their days living like 21st-century Vikings. From

hiking to remote waterfalls to slacklining 1,000 metres above Norway’s glass-like fjords, the duo have attracted a social media fan base of over 300,000 with their epic adventures across the Norwegian wilderness. When he’s not exploring Norway’s arctic tundras and wild forests, the bearded Hatleskog better known on Instagram and YouTube as [@pilotviking](#) re-enacts battle scenes and historic moments with his fellow Vikings [@throrrosland](#), [@untamed_valkyrie](#) and [@karthur](#), among others.

Their life-like costumes, which include wooden shields, metal armour and animal-skins, bring Viking history back to life, all while inspiring their fans to go on epic outdoor adventures in Norway and beyond. So, tell us: would you live out your days adventuring like a 21st century Viking?

Coronavirus: Supporting Europe's battered fishing industry



Coronavirus: supporting Europe's battered fishing industry

The Coronavirus means European fishermen are weathering a new kind of storm. With fish markets and seafood restaurants shut down, supply chains broken and large vessels staying in port, thousands of jobs are at risk. So, what are the fishermen doing, and how's the EU helping to keep the sector afloat?

The French Riviera is unusually quiet. With luxury yachts and cruise vessels forced to stay at port, only artisanal fishermen like Loïc Gourlaouen are still going out to sea. April to June would normally be the busiest time of year, but the pandemic has changed all that. To stay afloat, Loïc has had to adapt to the new normal.

"Our usual clients are restaurants, and we lost them due to the shutdown. Our remaining customers are private individuals. We've started delivering fish to most of them. We fish in the morning and do deliveries in the afternoon. That makes for long days at work," Loïc says.

Despite losing half his turnover, Loïc and fishermen like him, say they feel a duty to keep providing fresh fish to their customers who are stuck at home. Orders are taken by phone.

With delivery on top of going out to sea, the working day can last anywhere from 4 am to 9 pm. But the fishermen know they are fortunate to still be working. In some parts of the [Mediterranean and the Black Sea, more than 90% of small fishing vessels](#) have been forced to stop operating because of the pandemic.

Although street markets are closed, fishermen in the southern French town of Antibes have been given permission to sell their catch directly at the port. For those who choose to stay at home, there is compensation for lost income: just one of the [emergency measures](#) adopted at EU level to help mitigate the crisis.

Many local fishermen, however, say they prefer to keep working - with the necessary precautions in place - rather than rely on government support.

"I'll be honest with you, I stayed at home for all of March because I was so scared. And I only returned to sea after I saw that the number of new cases in Antibes had gone down. I'm trying to have as little contact with others as possible. So I fish at sea, while my colleague sells what I catch here," says fisherman Jérôme Bottero.

"Subsidies were handed out for those who had no turnover in March. I applied and got it. But when the subsidy was renewed in April, I did not apply, because I'm learning something, even if I'm not making what I usually do. We need to think about those who are making nothing at all," explains Denis Genovese, the President of a local initiative

called [Alpes-Maritimes Committee for Maritime Fisheries and Marine Aquaculture](#).

A Lifeline for Europe's fishermen:

Europe's fishing industry has been battered by the coronavirus lockdown. To find out how the European Union is supporting the sector Euronews' Denis Loctier spoke to [Virginijus Sinkevičius, European Commissioner for Environment, Oceans and Fisheries](#).

Denis Loctier, Euronews: "What's the overall situation in Europe? How badly did this crisis hit our fisheries and aquaculture?"

Virginijus Sinkevičius, EU Commissioner for Environment, Oceans and Fisheries: "It is still hard to draw the final conclusions. Nevertheless, we can say that the fisheries and aquaculture sector has been hit hard already. The demand for the fresh fish dropped dramatically. So for us, it's very important to help the sector. So when the market returns back to normal, the sector as well could return to normal pace."

Denis Loctier, Euronews: "What are the main measures taken by the EU so far?"

Virginijus Sinkevičius, EU Commissioner for Environment, Oceans and Fisheries: "First of all, of course, it's the temporary cessation of activities...as the market of fresh fish went down dramatically, it's clear that some of the vessels cannot continue their activities. That's why fishermen and women are forced to stay at ports. The Commission is going to fund 75 percent of temporary cessation of activities. Secondly, there is still fishing vessels who are out there, fishing, aquaculture farmers - they are basically left with their production. So they need to put their fish somewhere. And storage aid is the second help which helps them basically to wait this period for a better time with their catch and then sell when the market returns. Thirdly, the state aid was increased up to €120,000. The member states can react very quickly, very proactively and help fishermen and aquaculture farmers with the direct funding to them."

"Decreasing productivity costs money"

Many farms are having to sell or freeze their fish once they reach commercial size. The company Cannes Aquafrais near the southern French city of Cannes has the capacity to grow 750 tons of sea bass and sea bream. With restaurants closed, the farm is now selling to food retailers.

"We've stopped growing stock until the markets that we are interested in come back, so farm output has decreased slightly to make sure the fish

density inside the cages doesn't exceed the limits we must maintain," says the fish farm's head of production, Guillaume Gilbert.

Despite that, Michel Moragues, the firm's commercial director admits there will be an impact: "At the same time, there's a clear economic impact. Decreasing productivity costs money. We can maintain our stock, but we cannot retain it indefinitely."

Just like the rest of the supply chain, fish processing factories have been badly hit by the collapse in demand.

The factory '[La Poissonnerie de Puget-sur-Argens](#)' is running at a fraction of its capacity. Serving mainly local take-away restaurants and eateries, it has lost about 80% of its turnover. Come June, the management fears it will lose government support enabling the firm to place staff on partial unemployment benefits.

"Our employees are furloughed 80% of the time. Only five or six people come in a day, depending on the work we have. Some of the days they may come for two or three hours, other days they're not coming in at all. And I think that even after the recovery, we will still be impacted - we'll have lost around half of our turnover," says the factory's owner, Anthony Garnham.

Sourced from the Cannes Aquafrais Farm nearby, the fish are processed at the factory as part of a local initiative. The project was financed through the [EU's European Maritime and Fisheries Fund](#).

The fish are then delivered to seafood restaurants that are still closed to the public, such as establishments like the one run by chef Stephan Miso.

His 'plat du jour' or dish of the day, consists of sea bream in cream sauce with Asian spices, fish skin chips and almonds. It is prepared and then sent to medical staff at a local hospital.

"That's 100 meals, 100 people who will eat as if they ate in my restaurant, but at the hospital where they work. We cooked this fish twice, filleted and also rolled in the form of a rose, baked in the oven, with olive oil and white wine... And voilà, this is what's for dinner! There's a real wave of solidarity and support, from the fishermen, from Europe, from all those who help with funding - and it's a real pleasure to cook again, to reopen our kitchens, to work again and to feel useful. That is important," Miso says.

"We have to work, but always with the pleasure of providing good produce, seeing everyday our customers satisfied with our product — above all, that's what drives us," concludes Loïc Gourlaoué.

IBCCIM's New Members

Member Companies:

Lamerd Cement Co.: Cement & Clinker, M.D.: Ebrahim Gholamzadeh, Address: Postal Code: 7187936866, No. 54, in the corner of Zanbagh, 10 Station, Farhang Shahr, Shiraz, Tel: +98 (71) 36324281, Fax: +98 (71) 36324282, Email: info@lamerdcement.com.

Konam Zar Co.: Foodstuff, M.D.: Ahmad Ali Kianian, Address: Postal Code: 1454955671, Fifth floor, No. 594, Kourosh Alley, Satarkhan St., Tehran, Email: kiani-ana@yahoo.com.

Khobregane Tejarate Pars Co.: Commerce, M.D.: Hadi Movarekh, Address: Postal Code: 1939813953, Flat No. 617, Forth Floor, No. 1, Opposite of Beneton, Dolat & Kaveh Boulevard Intersection, Pasdaran, Tehran, Tel: +98 (21) 88538414, Fax: +98 (21) 89777748 .

Kimiya Gostar Ara Co.: Energy Industry, Renewable Energy, Electrical Cars, Oil & Gas, M.D.: Mohammad Hamed Emam Jomeh Zadeh, Address: Postal Code: 1585944611, No. 11, Dey Alley, North Kheradmand St., Tehran, Tel: +98 (21) 88315100, Fax: +98 (21) 88822947 .

Rayanoosh Soft Drink Co.: Producing different types of Beverage, M.D.: Mahmoud Zare, Address: Postal Code 7373111328, 50 kilometer of Shiraz-Isfahan Road, Shiraz ,Fax: +98 (713) 6249197, Email:mahmoud.berantin@gmail.com.

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Key Economic Indicators in 1398

Population and Labor Force

| | |
|--------------------|----------------|
| Population (1398) | 83.1 million |
| Urban | 62.4 million |
| Rural ¹ | 20.7 million |
| Population Growth | 1.2 percent |
| Population Density | 50.4 per sq km |
| Active Population | 27.2 million |
| Unemployment Rate | 10.7 percent |
| Urban | 11.8 percent |
| Rural | 7.3 percent |
| Male | 9.0 percent |
| Female | 17.5 percent |
| 18-35 years old | 17.9 percent |
| 15-24 years old | 26.0 percent |

Source: Statistical Center of Iran (SCI).

¹Includes non-resident population.

External Sector (million US\$)

| | |
|--------------------------------|-------------|
| Current Account Balance | 3,754 |
| Trade Balance (goods account) | 7,155 |
| Exports (FOB) | 59,391 |
| Imports (FOB) | 52,236 |
| Total External Debt (year-end) | 9,031 |
| Exchange Rate (US\$/IRR) | |
| Interbank Market (average) | Rls. 42,000 |

Monetary Sector (growth rate, percent) (Esfand 1398 compared with Esfand 1397)

| | |
|----------------------------|------|
| Liquidity (M2) | 31.3 |
| Money (M1) | 49.8 |
| Quasi-money | 28.0 |
| Non-public Sector Deposits | 31.9 |

Real Sector

| | |
|---|--------------|
| GDP Growth (1390=100) | |
| Oil | -6.5 percent |
| Non-oil | 1.1 percent |
| Performance of 1398 (current prices; trillion Rls.) | |
| GDP (at basic price) | 23,853 |
| Gross Fixed Capital Formation | 5,447 |
| Private Consumption Expenditures | 12,121 |
| Public Consumption Expenditures | 2,834 |

Tehran Stock Exchange

| | |
|---|-----------------------|
| Tehran Stock Exchange Price Index (TEPIX) (year-end) | 512,901 |
| Value of Shares and Rights Traded | Rls. 4,673.7 trillion |
| Volume of Shares and Rights Traded | 1,086.2 billion |

Source: Central Bank