

The Hydrography of Ancient Sur. The Life Sources of the Harbour City of Tyre

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Throughout ancient history, all prosperous civilisations are always connected to water sources, such as the Nile in Egypt, the Tigris, and the Euphrates in Mesopotamia. Concerning the Lebanese coast, the civilisation that flourished in Tyre's area did not really have a river or a strong single source to depend on. It rather had a more diverse hydrography system helping the area to develop as one of the centres of civilisation.

Keywords: Tyre, hydrography, harbour city.

This article mostly studies ancient water sources which gave rise to the first human settlements and civilisations surrounding the city of Tyre. The water that represented the source of life by supplying the first inhabitants with drinking water as well as abundant quantities of water to irrigate fertile agricultural fields. This paper will study the regions extending from Ra's Naqura to the south, to the river Abu el-Aswad to the north, as well as the plains surrounding Tyre. This area will be the focus of this study.

Below are listed the aforementioned sources of water, starting from the south to the north (**fig. 1**).

Wadi Hamoul

Wadi Hamoul water source may be the farthest one south. The name of the valley is associated with the cult of Hamon-Baal; Hamon – whose worship spread

inside the archaeological city of Oum-el-'Amd¹ located on the southern bank of the valley. The Wadi Hamoul valley source is currently a seasonal source, as most valleys in Lebanon, due to the scarcity of the sources feeding it, mainly damaged by construction. Large-sized stones are found scattered in the vicinity of this valley flood plains, a detail that might indicate the past existence of some sort of a special building near the mouth of the valley.

This valley contributed to the flourishing of its surrounding area and also was the main reason for the first settlements that developed into Oum-el-'Amd archaeological city although most evidence indicates a Greek settlement as well as Phoenician and Persian eras in Oum-el-'Amd. The city receives most of its water through this valley where an aqueduct supplies the city by the water from the upper part of the valley.

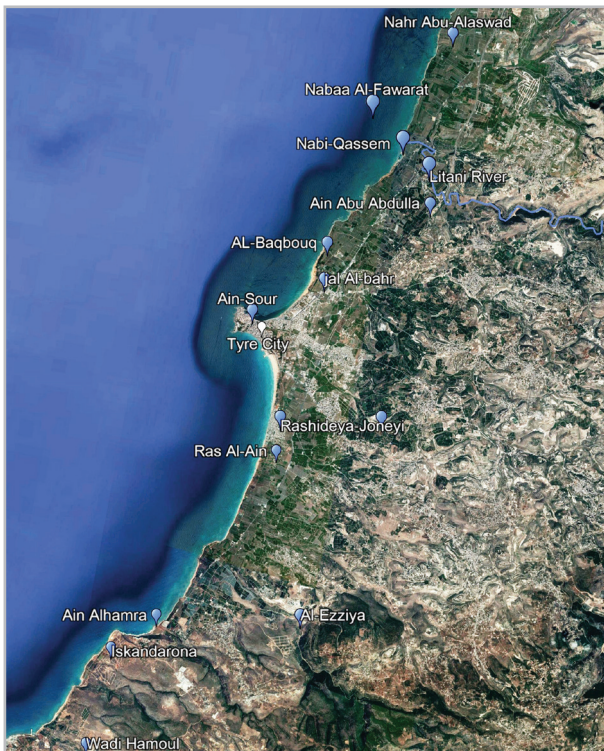


Fig. 1- Location of the main water source for ancient Tyre area.

The Iskandarouna Spring

The Iskandarouna Spring is located 22 km to the south of Tyre, it flows through a narrow coastal valley also known as the Iskandaroun Plain. These names are derivatives of the name Iskandar (Alexander), and it is estimated that the name emerged in the fourth century BC, after the arrival of Alexander the Great to the city of Tyre. The spring source is located within the agricultural plains. Next to the source, the remains of a watermill are found. They are indicative of industrial activities (also close to the source are the remains of the ancient port of Iskandarouna; **fig. 2**), a port mentioned by the traveller Ibn Jubayr in the year AD 1186.² This lesser-known port is currently being studied by the author and by the archaeologist Zeina Haddad. Many archaeological remains of ancient villages are scattered on the hills surrounding Iskandarouna. The surface study of these remains indicate that their later periods were during the sixth century AD, such as Kherbet Iskandarouna and Kherbet Ermet.

The existence of these archaeological settlements on the two hills along the Iskandarouna Valley is closely related to the existence of the water source in that area. Closer study of these archaeological remains on these hills indicates that the last dated era is around the sixth century AD where it is believed that their establishment may date to the Iron Age. It is worth mentioning that a historical text of the traveller Ibn Jubayr, from the twelfth century AD, mentions the existence of a walled city and a busy commercial port. Until the twentieth century, the watermill was still functional, and part of that old building can still be found to this day, after the modern roadway separated it from its water source and took away parts from its original structure. In this particular plain, the settlements along the two hills surrounding it as well as the agricultural fields, the old port, and the industrial structures, all owe their existence to the water source known as the Iskandarouna Source.

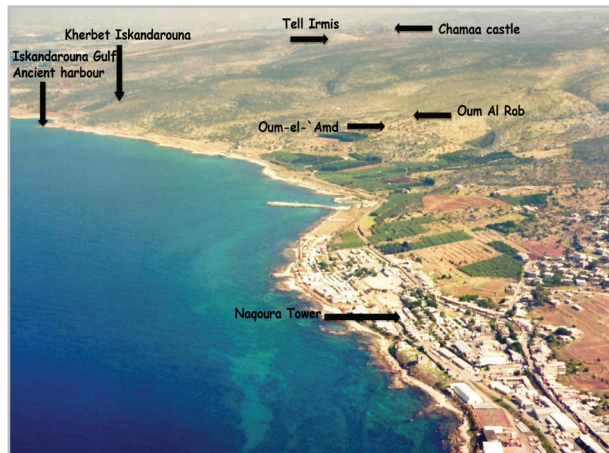


Fig. 2- The landscape of south Tyre includes Iskandarouna and several archeological sites.

'Ain el-Hamra (Red Spring)

'Ain el-Hamra (Red Spring) is located near al-Ras-al-Abyad. The name comes from the particular red colour of its walls. In the vicinity of this source, there is an unknown archaeological hill. I investigated the preliminary studies of its top soil and they

indicate the existence of structures dating back to the Roman/Byzantine era. It appears as though this source used to irrigate the surrounding plains and may have been the main reason behind the development of the archaeological hill near it. The remains of the construction of this lake can be dated to the Roman era despite the current renovation works.

Al-Izziye Source

Al-Izziye source is located in the village of Izziye, this source used to irrigate the plain known as the Izziye Plain and al-Hinniye Plain as well as part of the Mansoura Plain. Part of an ancient water canal still exist to date as well as a watermill close by. The spring flows through this valley and it is further supplied by many existing sources in the Zibqeen Valley known as the Nafkha Valley where many Roman and Byzantine archaeological sites are found.

Ras-al-‘Ain Springs and Basins

Ras-al-‘Ain water sources are located 5 km to the south of the city of Tyre. A Neolithic site was recorded around these water sources.³ In the areas of Ras-al-‘Ain, four water sources are substantially flowing, namely two sources of Safsafa and the sources of Israwiyya and Sayde.⁴ These sources once irrigated the narrow coastal plain from the village of Mansoura to the south and the village of Abbasiyya to the north, fulfilling its historical role to this day as the primary source of drinking water as well as agricultural irrigation. Located in Ras-al-‘Ain in the middle of plains with very fertile soil, these sources were the anchor for historical settlements around 5,000 years BC.⁵ Although the archaeological evidence does not point to any human activities during the pre-Roman era, archaeological conclusions indicate human activities going back to the Bronze and Iron Ages as well as post-Roman historical periods.

The water sources of Ras-al-‘Ain are currently characterised by their large octagonal buildings dating back to the Roman era, similar to those of the Israwiyya

(**fig. 3**) and Safsafa sources with thick walls sometimes measuring 3 m in thickness. The octagonal shape may be symbolically linked to the eight-pointed star of Ishtar Venus, the goddess of water sources. Although architecturally it is closer to a circular shape, the perfect shape from an engineering perspective to build water towers, allowing for the internal water pressure to be evenly distributed along the external walls.



Fig. 3- The octagonal building of Israwiyya spring basin in Ras-al-‘Ain – Roman period.

Ras-al-‘Ain sources were suitable to power watermills, as is clearly evident on the site in four different locations at least, with a probable estimation of more. The archaeological site has not been thoroughly surveyed to determine the function of some abandoned ruins on location.

The water aqueduct system used to deliver water from Ras-al-‘Ain to the plains surrounding the city of Tyre through built canals, underground tunnels, or raised on arches, is one of the best examples of ancient water engineering. It attracted all the travellers that passed by Tyre since the 4th century through the 18th, and 19th century such as Pococke, Cassas, Condor, Kitchner, and Lortet. According to the historian William of Tyre, the construction of these basins was considered an awe-inspiring achievement during the era of the Franks when visitors came to marvel at the unique engineering techniques used.

The Sources of Tell Rashidiyye

The sources of Tell Rashidiyye are located at 2 km from Tyre, east of the archaeological hill known as Tell Rashidiyye (early known as Tell Hobeich) and they are known as the Genovese basins (from Genova, Italy). The name could have been a remnant from the era of the Crusades when many Genovese were part of the Crusader's campaigns in Tyre. These springs are currently the source of drinking water for the city of Tyre, and may have been during different historical periods. Not much is known about the Rashidiyye Hill which is currently covered by the recent construction of refugee camps. Our current archaeological information are from the excavation of Mekridi bey in 1903 as well as the archaeological diggings of Kawkabani and Hafez Shehab⁶ on behalf of the Directorate General of Antiquities in Lebanon. All of the aforementioned studies date the site back to the Iron Age, although the archaeological indications and conclusions date the human settlements on the hill to a much more ancient period. It is possible that the basins of the springs used to supply the historical island of Tyre with water when it was shipped by boat to the island during the Amarna period in the thirteenth century BC, and these water sources were the most probable source of water to be shipped to the island by boat.

It currently seems that most of the built structures around the sources date back to the 12th and 13th centuries AD. But since the activities in Tell Rashidiyye date back to the Iron Age, it is concluded that the springs and its structures date back at least to the Iron Age.

Al-Jazeera Water Sources (The Island of Tyre)

Archaeological excavation on the historical island of Tyre itself have revealed a few water sources, one of which is located on the site of the city itself in the area of the thermal basilica. The quality of the water, however, was found to be poor in terms of taste and it was supposed that the water source might have been of limited usage.

The other water source on the historical island of Tyre is the source known as 'Ain Sour or 'Ain Hiram (**fig. 4**) as some travellers or Orientalists used to call it. On this particular source, a military tower is erected to protect it and it is still in the same state as it was described by Ibn Jubayr who visited the city in AD 1185.⁷ One can also suspect from the architectural aspect of the tower that the current building dates back to the Roman era or possibly earlier and underwent several restoration and maintenance interventions during all the following periods up until the twentieth century when it was still used by the inhabitants of Tyre as a water source. At the beginning of spring, each year, the people of Tyre had brought sea water and poured it in the source until it had regained its natural colour before they dyed their rags with pigments from the murex seashell and started a journey to Tell Ma'ashouq, 2 km to the east of Tyre. They would then go back to the city as



Fig. 4. The tower built over a water spring in the city of Tyre known as 'Ain Sour or 'Ain Hiram.

part of a legendary ritual probably symbolising a myth of a marriage between sea and land, when its echoes resonated still within the city of Tyre.

Sea Sources

The sea of Tyre is characterised by the existence of fresh underwater sources around the city. The largest of which is located to the north of Tyre and its potency can be observed on the surface of the sea since the rather shallow seabed where the source gushes from is around 30 m underwater. This water source is well known amongst fishermen who used to drink from it at times. Samples of water were taken from the surface and analysed to show some salinity⁸ although the quality of water can be better closer to the seabed.

The most important question, however, is whether historically the people of Tyre used this water source or not. Was this source one of the factors that allowed them to withstand Nebuchadnezzar, the Babylonian King's siege for thirteen years, as well as the period of the Tell Amarnah letters when the King of Tyre complained that his water supply was cut from the seaside.

Al-Baqbouq Water Source

Located to the north of the city of Tyre, al-Baqbouq (also known as 'Ain Habrian or Abrain) is a significantly strong source currently used to irrigate the agricultural plains to the north of Tyre. It appears as though the source is a cluster of water springs arranged in an octagonal shape; a shape that reminds us of the Ras-al-'Ain springs basins (**fig. 5**). I had the chance to see this spring during a dry period in 2017 and noticed two smaller basins inside the large one, each of which had also an octagonal shape. I also noticed the existence of coloured marble tiles in the space separating the two basins or may I call it pool. Ernest Renan mentioned a text found in al-Baqbouq region⁹ from which he inferred the existence of a bath in that area and the clues he mentioned indicate that I have found the bath from the text. Renan also spoke of medicinal water, where people used to visit for therapy.

The water of al-Baqbouq source still irrigates the adjacent fields and may have been one of the reasons behind the development of a village or a city still preserved under the archaeological Tell Mheileeb sitting close by.



Fig. 5- Al-Baqbouq water source surrounded by octagonal structure – Roman period.

'Ain Abu'Abdallah Spring

'Ain Abu'Abdallah spring is located on the southern bank of the Litani River, the area of which is known as Qasimiyya. It flows from an area relatively elevated from the river. It was mainly used to irrigate the upper southern banks of the river and was surrounded by a large basin to store its water. The construction techniques used to build the walls of the lake date back to the Roman era. This large storage basin was eventually demolished, and its waterway was diverted. One side of its rather large walls is still visible. Furthermore, a mill was located on the northern side of the basin.

Al-Qasimiyya Spring

Al-Qasimiyya spring is located on the southern bank of the Qasimiyya River, and it is near the khan known as Khan-al-Qasimiyya; at least we know about the

name since the sixteenth century AD.¹⁰ This source irrigates part of the plain to the south of the river, and it is currently surrounded by a basin. The locals hold a certain reverence to this place where they abstain from fishing and they even throw food to the fish living in its waters, in a clear indication to the connection this water source has to the Khan-al-Qasimiyya dating back to the Roman era. This khan was once a military tower during the Crusades, and the source supplied it with water. Even though the river is much closer to the tower, the water source was the main supplier.

Al-Qasimiyya River

The Litani River is known as the Qasimiyya River in that region probably due to the existence of the holy site of Nabi Qasem (the Prophet Qasem) in the area inside the al-Qasimiyya khan.

The Qasimiyya River irrigates part of the coastal plain, and since the river water is much lower than its banks, many illustrations from the 18th and 19th centuries¹¹ show water wheels that were used to elevate the water from the river to the adjacent banks. The water from this river was used primarily to irrigate the fertile agricultural plains to the north, mainly the plains of Abu Aswad, Qasimiyya, and Adloun plains. An important agricultural necessity, the river was an essential requirement to the development of many villages and historical settlements in the plain reaching the village of Adloun to the south. The Qasimiyya River did not receive its deserved share of studies and a few preliminary reports even mention many areas worth studying such as cemeteries in the pyramidal hills on the southern banks (**fig. 6**). On the northern bank, however, a well-preserved watermill can be found in its original location.

Al-Qanater Water Source

It is located to the north of the river, directly next to the floodplain. Built features around it indicate that this water source was first used for irrigation a long time ago.



Fig. 6- The pyramidal burial hills on the Litani Qasimiyya, sudden bank.

Abu el-Aswad River

This relatively smaller river is known as Abu el-Aswad and it is a seasonal river where it dries up during the summer, rendering it unusable for irrigation. However, owing to its strong flow during the winter and spring seasons, a stone bridge can be found constructed during the Roman era (**fig. 7**). It was part of the road system toward Tyre and was well preserved until the nineteenth century.

It seems that most of the water sources of Tyre were springs and streams rather than rivers, and that gave the chance for the early settlement, especially in the Neolithic period to settle in the surroundings of the water sources where water was abundant drinking and irrigating the surrounding fertile fields. The early settlement is well recorded in Ras-al-'Ain, Rashidiyye, and Izziye whereas the other site may have early settlement activity as those mentioned. However, it will take some time to conduct an archaeological survey in the area to prove its early datation. In the Early Bronze Age, with the foundation of the city of Tyre and the rise of urban development, it seems that most of the water sources were part of an organised agriculture network. In all the mentioned sources, the existence of watermill houses is recorded indicating the use of this water source power in industrial production. With foundations of cities and the gathering of people

in one place, the needs of water rose and technical engineered solutions to transfer water for longer distance, this appears as the aqueduct of Ras-al-'Ain (Tyre). One must not forget the early Phoenician attempt in the Early Iron Age to transfer water by boat to the island of Tyre. It was a sophisticated work that needed a huge infrastructure for filling the water at the beach in a harbour area and discharging it on the island harbour with all the storage and city supplying networks. Part of the development of water usage, besides life necessities in drinking and irrigation, and then in industrial use, we noticed the use of these basins for leisure activities as the existence of the bath in the Roman period in al-Baqbouq spring.

a number of springs in both banks of the river, where evidence showing that the river was used for irrigation by the techniques of water rising by water wheels and aqueducts.



Fig. 7- Roman bridge over Abu el-Aswad seasonal river.

Conclusion

The hydrography of Tyre depended on spring sources that were easy to deal with, to live next to, and adapt it to be used in industrial and leisure activities. Fears of destructive floods was apparently not an obstacle. The high number of these sources compared to their area of existence supply the region with a diversity of sources to depend on to manage its life and not a single major source that makes the life of people attached to it. The single strong river that exists in the area was of minor rules, probably for the existence of

Notes

- 1- Dunand and Duru, 1962.
- 2- ابن جبیر 1981، ص. 277.
- 3- Copland and Wiscomb 1966, p. 51.
- 4- Badawi 1997, p. 30.
- 5- Copland and Wiscomb 1966, p. 51.
- 6- Doumet-Serhal 1982.
- 7- ابن جبیر 1981، ص. 283.
- 8- Pairman Brown 1966, p. 60.
- 9- Renan 1864, p. 594.
- 10- الصفدي 1969، ص. 69.
- 11- ویلسون 1995، ص. 60.

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