

The Basins and Aqueduct of Ras-el-Ain near Tyre

Ali Badawi
Archaeologist DGA

30

"The population of this colony having grown over the years along with the increase in trade, the Tyrian's need for water also grew and thus they built the aqueduct. The skills they are known to have had during the time of Salomon dates the aqueduct to that particular century..."(1).

Ras-el-Ain is situated approximately 5 kms south of Tyre in a fertile agricultural land (2). The source of four streams, the al-Sayde, the al-Asrawi and a further two both known as as-Safsafa, is also located there. Aside from its main role in the agriculture of the region, the source also provides Tyre and its surrounding areas with drinking water. Based on a network of canals, these streams irrigate a surface area of over 30 square kilometres of cultivated land that stretches from the southern plain of al-Mansouri (about 10 kms from Ras-el-Ain) to the northern fields of al-'Abassia (approx. 8 kms from Ras-el-Ain) (fig.1).

Until the 13th century these irrigation canals also extended westward near Tell el-Ma'chouq providing water to the city of Tyre. Today the reservoirs that are fed by the al-'Asrawi and as-Safsafa streams are connected to a single canal that flows to the west before deviating north and south. Because of its poor output, the al-Sayde reservoir is mainly used to irrigate the neighbouring low lands as well as the coastal plains (fig. 2).

The springs emerge at between 3 and 7 metres of alti-

tude and natural pressure raises the water level in the reservoirs to about 18 metres thus watering the adjacent lands that are between 1 and 15 metres of altitude. The aqueduct stretches from Ras-el-Ain over 700 metres and at a height of 18 metres. This elevation diminishes progressively in tandem with the inequalities of the terrain.

History of the site

The first human settlements date back to the Neolithic Period and Copeland and Wiscombe(3) refer to a large plain to the south of the reservoirs called the "Big Garden". Large amounts of flints can still be found. The earliest archaeological excavation that took place in the area was the 1903 Macridi Bey excavation. East of Tell Rachidiye (Usu) and at about 1000 metres from the springs, the excavation uncovered Iron Age tombs (4). In 1988 an accidental discovery led to the 1994 excavation by the DGA which revealed an ancient road and Byzantine ruins. In view of its strategic location there is little doubt that the area has been continuously inhabited since the Stone Age.

The northern foundation wall of the as-Safsafa basin dates the surviving remnants of the reservoirs to the Roman period (fig.3). The local residents however had probably developed the system of canals long before. The most important indication of this was the growth of the city of Usu situated in close proximity to the springs, throughout the Bronze and Iron Ages.

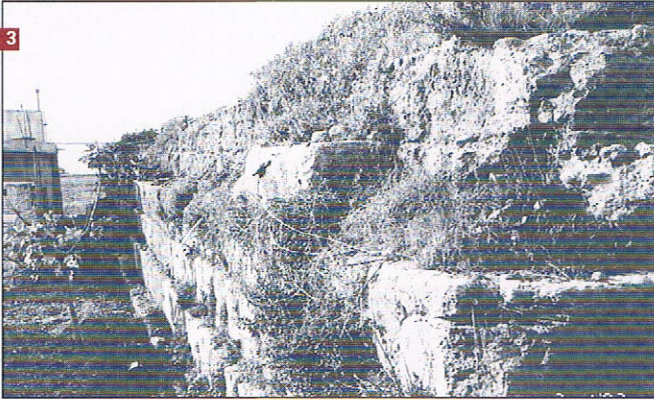
1. M.C.F. Volney, *Voyage en Egypte et en Syrie*, 2nd series, vol II, 1959, p.302-303.

2. E. Renan, 1864, *Mission de Phénicie*, Paris, p. 578, 579, 582, 593.

3.L. Copland, & P. Wiscomb, 1966, « Inventory of Stone-Age Sites in Lebanon. Part Two : North, South and East-Central Lebanon », *Mélanges de l'Université St Joseph*, XLII, p.51.

4. Th. Macridy, 1904, » *Caveaux de tell el-Rachédieh, à Tyr* », *Revue Biblique*, I, p. 564-572 ; C. Doumet, 1992, « Les tombes IV et V de Rachidieh », *Annales d'Histoire et d'Archéologie, Université St Joseph, faculté des lettres et des sciences humaines*, I, p. 89-135 ; C. Doumet & I. Kawkabani, 1995, « Les tombes de Rachidieh : remarques sur les contacts internationaux et le commerce phénicien au VIIIe siècle av. J.-C. », *Actes du IIIe congrès international des Etudes Phéniciennes et Puniques*, Tunis 11-16 novembre 1991, p. 379-395.



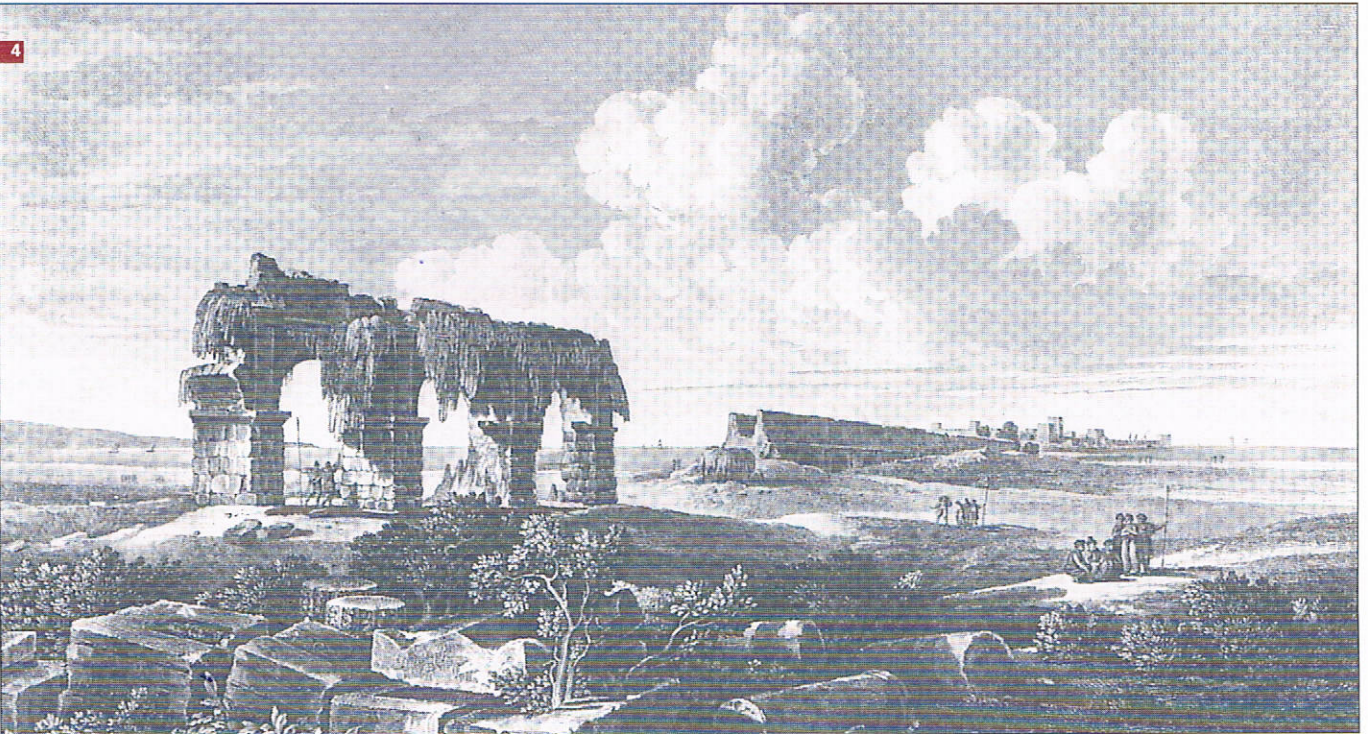
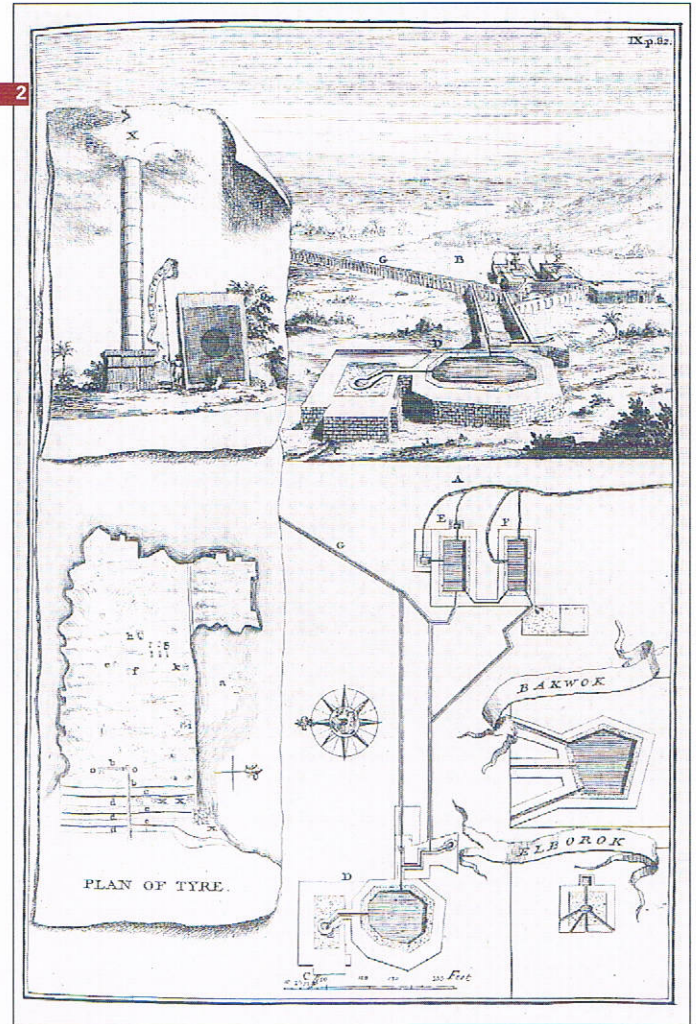


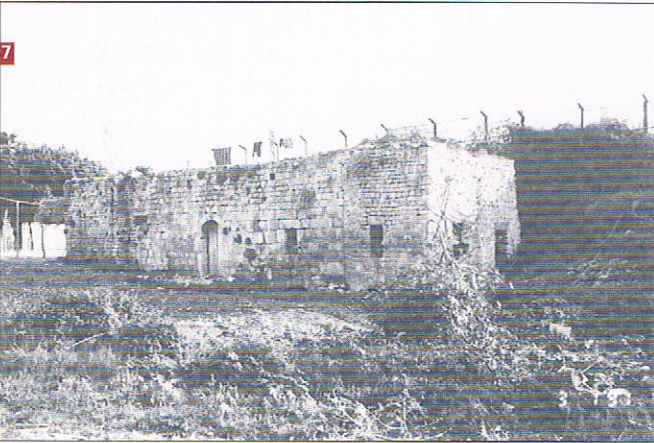
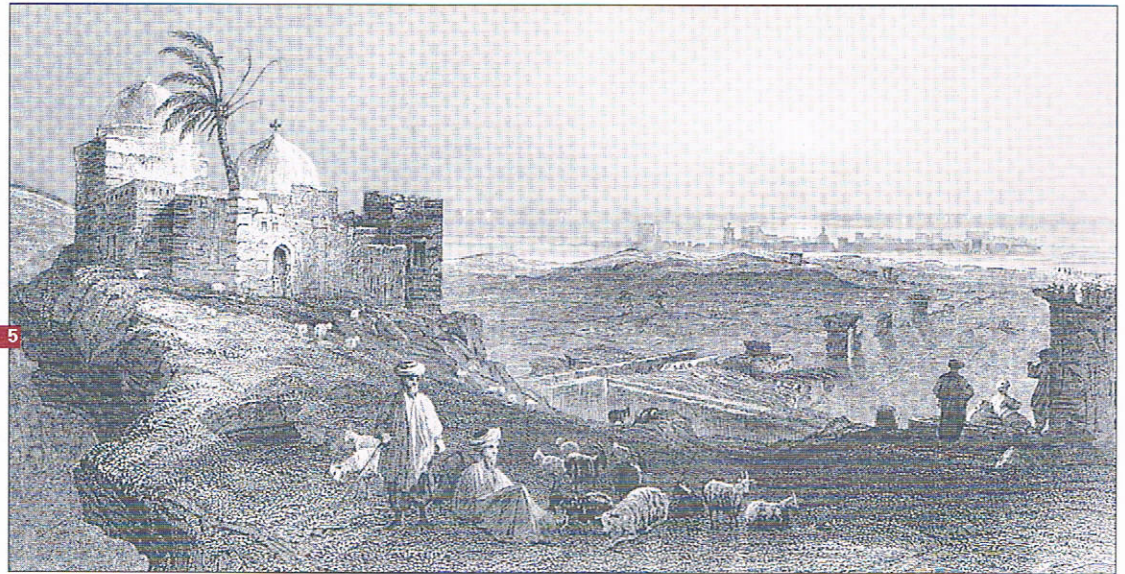
1. The source of as- Safsafa.

2 R. Pococke, 1745, *A Description of the East and some other countries.*

3 Roman foundation of as- Safsafa.

4. Louis-François Cassas, 1854, *Voyage pittoresque de la Syrie, de la Phénicie, de la Palestine et de la Basse-Egypte.*





5. W. H. Bartlett, Tyre from the mainland, (1836 reprint).
6. The aqueduct on the al-Bass excavation.
7. The mill.
8. Over use of cement on the channels.
9. Urban construction over the aqueduct.

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33

The aqueduct's itinerary

Following the annexation of the island of Tyre to the mainland in the 4th century AD, canals linking the city of Tyre to Tell-el-Ma'chouq

were added. Previously, drinking water had been supplied to the island by boat. None of these survived the total destruction of Tyre by Sultan al-Achraf Khalil in 1291. By the end of the 19th century when the city of Tyre was in full expansion, water supplies were once again provided through a network of terracotta canals from Tell el-Ma'chouq. Evidence of these channels were found during construction work in the area of al-Bass (5). Nothing however remains of those supplying the land south of Ras el-Ain. The aqueduct north of Ras el-Ain is 700 metres long although in parts deposits of silt have covered some of the arches. These reappear in Tell el-Ma'chouq and extend over a distance of 2 km into the centre of Tyre (fig.4).

Over a distance of 1 km and starting from Tell el-Ma'chouq, a section of the aqueduct going in the direction of Tyre was built upon without the landowners knowledge. Arches were found under these houses only after large segments of arable land was dug up. At this point, no further evidence of the aqueduct has survived. Proof of its existence only remains in illustrations made by 13th century travellers to the area (fig.5).

Construction work has revealed a few foundations and some remnants of the terracotta canals laid during the

19th century to supply Tyre with its drinking water. On the al-Bass excavation site not far from the Arc of Triumph, a well-preserved section of the aqueduct can be seen (fig.6). A flour mill was built near the al-'Asrawiyya reservoir which supplied it with the necessary water pressure. This remained in use right up until the fifties. The building itself seems little changed when compared to Taylor's 1875 drawings (fig.7). In the same way, an olive press close to the as-Safsafa reservoir was also built. The history of both the mill and the press runs directly in parallel to that of the water basins.

The aqueduct is still in use today as it was during the Roman period. However, modern day problems such as the proliferation of urban construction on the Ras el-Ain site and the over use of cement on the channels of the aqueduct, remain (fig.8,9).

The DGA is in the process of trying to restrict further construction at Ras el-Ain with a view to restore the complete tracing of the aqueduct (fig.10) and highlight the importance of Ras el-Ain and its reservoirs.

5. DGA , 1995 excavations (unpublished).



10

10. Plan of the aqueduct.