

**WATER IN JERUSALEM AT THE END OF THE OTTOMAN PERIOD  
(1850-1920)  
TECHNICAL AND POLITICAL NETWORKS<sup>1</sup>**

In the foreword to a report written at the end of the 1880s, the Ottoman engineer Franghia Bey stresses that "the suffering of the inhabitants of Jerusalem, the main cause of which is the lack of water, has made public opinion rank water supply highest among all the issues which involve the Holy City for more than ten years; as the days go by, the need becomes more pressing, more urgent."<sup>2</sup> From its source in the nearby *Gihon* which supplied the city at its beginnings, to the distant *Golan* plateau which today acts as a vast water tower for "greater Jerusalem", the issue of water has always been a source of collective anxiety and permanent conflicts. Even when attempting to view it as political history, it is clear that the problem of water in Jerusalem is far from being solely the efficient and proven mark of urban administrations. Here more than elsewhere, it is a vital necessity connected to the topography of a city perched on the summit of the desert mountains of Judea, a capital which is above all a political and religious capital that has seemingly defied the basic laws of geography forever.<sup>3</sup>

The water supply has thus always been a clearly identified subset of the monumental historiography of Jerusalem. Generations of scholars more or less familiar with the science of hydraulics, from the crusader monk to the colonial engineer, have elaborated a detailed cartography, which presently provides a fairly accurate view of the successive systems of supply

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<sup>1</sup> The illustrations appear in the French text.

<sup>2</sup> Historical Archives of the Jerusalem Municipality (HAJM) Folio: Water Supply (WS), c. 614, "Rapport sur l'adduction des eaux d'Arroub", G. Franghia, 1908, p.5.

<sup>3</sup> This article is part of an international research program "Réseaux techniques et réseaux de pouvoirs", directed by Denis Bocquet (EFR) and Samuel Fettah (MMSH) financed jointly by the MMSH (Maison Méditerranéenne des Sciences de l'Homme, Aix en Provence) and the EFR (Ecole Française de Rome), presented in September 2000 in Berlin at the annual EAUH (European Association of Urban Historians) congress.

and evacuation of the waters of Jerusalem.<sup>4</sup> The reason is obvious: Jerusalem is unquestionably a parched city, and there are extensive archeological surveys on its inner workings of underground pipelines. However, this purely technical history does not exhaust the issues prompting renewed concern today, of a history *of* techniques, which is proving itself to be a new and revitalizing contribution to the overall history of the political, economic and social dimensions of urban history. The analysis of the complex territorial strategies which have guided and oriented technical water supply projects appears to offer a convincing perspective to go beyond the traditional- from the top - view of urban conflicts in Jerusalem. This reversal of perspective, which switches analysis to the ground level, can itself shake up the religious, essentialist and community-focused reading which has dominated the historiography of the city for centuries.

Such an analysis of technical networks in terms of their political dimension requires a description of the context for this study, set at the end of Ottoman rule, at the time when the Empire made a certain number of structural reforms, known as *tanzimât*.<sup>5</sup> The issue of the real or presumed impact of these *tanzimât* alone occupies a whole facet of Ottoman historiography. One of the challenges of this study on the technical networks of Jerusalem is hence to make a new contribution to this discussion. Are these reforms the last gasp of the 'sick man' or rather a truly modern initiative? Although most studies have used the traditional, high politics approach, examining the upper echelons of the centralized power of the Sublime Gate, and the efficiency of administration in the Empire, I suggest testing these reforms on the concrete level of "low politics" - in a province, and under the paving stones. This approach is based on a field study, and the analysis of the municipal archives of Jerusalem, which shed light on the various levels of skill, and the various loci of power, and help follow the sinuous path of an emergent municipal policy.

The *tanzimât* took place in Jerusalem against the backdrop of the brusque arrival of western powers on the scene, characterized by a well-documented topographic and architectural rivalry. Each power chose its hill, built its neighborhood, rang its bells and raised its flags. But this belfry belligerence in the Holy Land was also affected, in a more subtle way, by the competition among engineers for the mastery of the technical

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<sup>4</sup> On this topic, see the helpful overview by Purvis, James D., *Jerusalem the Holy City: A Bibliography*, vol.II, Metuchen, N.J. and London, 1991, p. 53-57, *water supply*.

<sup>5</sup> See for example the chapter by Dumont, Paul, in Mantran, Robert (ed) *Histoire de l'Empire Ottoman*, Paris, 1989, p.459 -522.

networks. This involved supplying water to Jerusalem or having water supplied, or contributing financially to a project or even printing the technical report which was awarded the contract. For the European powers and for the religious institutions which were often their Trojan horses this was durable territorial claim-making on the physical, political and symbolic levels. Among the players in this contest were, in addition to the western powers as such, the religious institutions (who owned several public pools), private clans (who controlled most of the cisterns), Zionist organizations and financial networks. The sharp rise in Jewish immigration at the turn of the century and the exponential increase in the need for water which resulted from this transformed the Zionist banks and enterprises into key players in what was rapidly becoming a real market. To analyze this technical competition as political rivalry, I have consulted the diplomatic and consular sources and the collection of documents preserved in the Central Zionist Archives in Jerusalem.

This specific context at the end of the Ottoman reign should not outweigh the impact of time or the importance of real or fantasized holdings in the water infrastructure of Jerusalem. Historical sources refer continuously to the lost golden age of Solomon's aqueduct, Sultan's Pool or the miracle of the Probatical Pool, thus underscoring the importance of reuse and symbolic re-investment which traverse the eminently political history of water in Jerusalem. This chronological viscosity alone serves to account for the territorial extent of the stakes, i.e. it provides a glimpse into what Maurice Halbwachs called the "*Topographie légendaire des Lieux Saints*." A careful re-reading of travelogues and excavation reports, which seem to be far our chronological framework, should not be neglected.

I. The traditional supply networks: when archeology goes back to the source

In the middle of the nineteenth century, domestic water supply was provided by a certain number of complex supply networks, which varied as a function of the area of the city, the altitude, and the uses of water (domestic hygiene or consumption of drinking water), and the seasons. An unstable equilibrium served to satisfy most needs, even though crises were frequent. This equilibrium was generated by a relative stability of the population, both quantitatively and qualitatively, but this 'traditional era' was nevertheless not one of harmony. A typological analysis of the various systems of traditional water supply shows three fault lines within the urban Jerusalem society: competition between communities for autonomy and control over water reserves, competition between the city and the surrounding countryside for rural springs, and conflicts between public and private players over cisterns. These three fault lines provide the necessary

background to understand the context of scholarly debates, which enlist archeology to delimit city authority.

#### a.Domestic cisterns

Designed to collect and store rain water, private cisterns were found in almost all the homes in the city. Field counts and reports from travelogues provide ample proof. In fact they show that these cisterns covered the basic water needs for domestic hygiene, which was estimated depending on the sources at about 30 liters per person per day (i.e. 300 m<sup>3</sup> per day for a population of 10,000 inhabitants in 1850). The engineer E. Pierotti, in his exploration of Jerusalem published in 1864, counted 992 private cisterns in the city.<sup>6</sup> In the early 1920s, the Mandate engineers counted 7300. Although the accuracy of these figures may be questioned, this seven-fold increase in the number of cisterns in fifty years matches the increase in the urban population of Jerusalem. This arithmetical index can be confirmed by a legal source: E.W.G. Masterman, in a treatise on the hygienic conditions in Jerusalem, mentions an Ottoman law which restricted granting of a building permit to the presence of a cistern on the roof or in the basement of the future building.<sup>7</sup> These dovetailing indices indicate that the response to the problem of water in Jerusalem was primarily private. The only resource which changed significantly in quantitative terms between 1850 and 1920 was clearly the number of private cisterns; it enabled a flexible response to the increase in the population. Whereas the morphology of a city says something about its social structure, this pervasive presence of private cisterns paints the picture of an Arab Jerusalem, according to the criteria suggested by Dominique Chevallier, in *L'espace social de la ville arabe*. These cisterns are good examples of the "honeycombed urban structure" mentioned for example by Roberto Berardi as regards Tunis.<sup>8</sup> This relative reliance on the domestic sphere caused severe hygiene problems, as the engineer Franghia Bey stresses: "*the dirtiness of the water from the cisterns, particularly high at the end of the summer when the water, with lesser volume, developed animalcules in prodigious amounts...especially malaria.*"

#### b.Community cisterns and ritual baths

The status of the water reserves owned by religious communities is ambiguous because it lies on the borderline between the private and the public sphere. In addition, the proximity of these water reserves to religious

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<sup>6</sup> Pierotti, Ermete, *Jerusalem Explored: Being a Description of the Ancient and Modern City*, London, 1864, vol I, p.63.

<sup>7</sup> Masterman, E.W.G., *Hygiene and Diseases in Palestine in Modern and Biblical Times*, London, undated.

<sup>8</sup> Berardi, Roberto:"Espace et ville", in Chevallier, Dominique (ed) *L'espace social de la ville arabe*, Paris, Edition Paris IV, 1979.

sites and places of pilgrimage in Jerusalem often gave them, as though through capillary action, a holiness. This is the case for example for the famous Probatical Pool located on the French domain of the Church of Saint Anne. A pagan holy place with curative virtues, these pools cut into the rock were dug in the second century BCE to supply water to the nearly Jewish Temple. In a very classic fashion, the Romans adopted this tradition by building a temple to the god Seraphis-Asclepius, and the New Testament story in John recoups this whole tradition by situating the cure of the paralytic on this site.<sup>9</sup> The Byzantines re-utilized the foundations of the Roman temple to build a basilica, the Basilica of Saint Mary, whose name itself seems to combine all the traditions of the site, since the birth of the virgin is now located here as well as the Probatical Pool, where cattle were also washed before sacrifices in the Temple. The property was granted as an extra-territorial privilege to France by the Sublime Gate in 1856 at the end of the Crimean War. Renamed "Domaine national de Sainte-Anne de Jérusalem", in reference to the mother of Mary, the site took on a political value, as is shown by a letter from the Superior of Saint Anne to the consul of France on July 12, 1890, at a time when there were plans to purchase new strips of land around the domain.<sup>10</sup> "*This is the only way France can own a domain of the highest importance in political, territorial, and religious terms in the Holy City and in the immediate vicinity of Solomon's Temple.*" The words of this non-neutral witness need to be taken literally to make a geopolitical reading of water in Jerusalem at the end of the nineteenth century; for this water, often viewed as holy, is also part of the international rivalry for the control of the Holy Places.

### c. Pools and Public Fountains

These are perhaps the most highly visible and yet the least useful forms of water storage in Jerusalem. This symbolic visibility and relative uselessness for practical purposes is true for both the large open-air public pools and for the network of neighborhood fountains. The position of six public fountains - the *sabil* - built by Suleiman the Magnificent in 1536 testify more to a political will than to a practical concern. They line the road used most often by Moslem pilgrims on the way to *Haram-El-Cherif*. Once again, the purpose is to proclaim sovereignty over the Holy City by

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<sup>9</sup> John, V 2-4 "For the angel of the lord descended at times in the pool and moved the water."

<sup>10</sup> Ministère des Affaires Etrangères (MAE) Nantes, Série Jérusalem - Domaines Nationaux, Saint Anne, V. Letter from Father Federlin to the Consul of France Ledoux, July 12, 1890. Quoted in Trimbur, Dominique, "Sainte Anne, lieu de mémoire et lieu de vie français à Jérusalem" forthcoming in *Chrétiens et Sociétés - XVI<sup>e</sup>-XX<sup>e</sup> s.*, Université Lyon II.

water points which are used more for the pilgrims' ritual washing than for local domestic consumption.

The public open-air pools adhere to the same logic. The largest, Sultan's Pool, is located directly below Jaffa Gate at the bottom of Hinom Valley. All the sources concur that in the nineteenth century these pools were almost always empty and only played a very temporary and above all symbolic role. After the first heavy rains for instance, the people would gather around these pools suddenly filled with water to celebrate the end of the dry season. Each would bring his donkey and families would take advantage of the opportunity to fill their home cisterns a little more. A few early photographs show these gatherings around the collective water points and what Rousseau called "la fête autour du puits", highlighting the political dimension of the watering hole as places of sociability and exchange. Today located precisely on the dividing line between East and West Jerusalem, Sultan's Pool has been drained permanently and transformed into a vast amphitheater, and has been used in the last few years for performances and concerts which attract the young people of the city. The topography of the place suggests a kinship between these places of urban sociability over and above their strictly practical usage.

#### d. The local springs

Although the private cisterns cover most of the needs for domestic hygiene, the local springs (mainly the Gihon spring and Bir Ayub in the Kidron valley) provide most of the drinking water, even though eye-witness reports tend to be contradictory. The political dimension of the Gihon spring stems from the fact that archeologists generally locate the original site of Jerusalem around this watering hole, which each of the communities in the city attempt very logically to claim as its own. By a classic desire to break with Old Testament tradition, the symbolic Christianization of the site is achieved by a toponymic shift which plays on the proximity of the spring to the tomb of Mary. For the Christians of the city, the Gihon spring becomes the spring of the virgin, involving no commitments. Nevertheless the political use of the Gihon spring goes far beyond a mere toponymic debate. It is known that in December 1867 the British archeologist Charles Warren discovered and explored a tunnel measuring 530 meters in length which connects the spring to the Silwan pool below, and which made it possible to divert the water from the spring which came out outside the city, just within the ramparts of the time. This was in fact the guarantee of an autonomous water supply for Jerusalem in case of siege. In 1880 Warren discovered the famous "Silwan inscription" on the walls of the tunnel, which commemorate the meeting of the two tunnel digging teams. Dated 701 BCE., it helps attribute the first water carrying infrastructure to Ezechias, a Jew. Today the precious inscription can be found in the

Istanbul museum, but the historical museum of Jerusalem, whose Zionist orientation shocked such people such as the former assistant mayor Meron Benvenisti, displays a replica to better claim Jewish sovereignty over the city by recalling the memory of Ezechias' tunnel.<sup>11</sup> In addition, the site itself of the tunnel and the Kidron valley are fundamental for the faithful of both messianic religions -- Christianity and Judaism. This talweg and this topographic confluence are simultaneously a line of contact and a line of symbolic confrontation. The original site of the city, it is at the same time the connecting point between the Mount of Olives (the place where the messiah will come in the Jewish religion, adopted by the gospel stories to be the place of Jesus' arrest) and the Temple Mount (site of the apocalyptic Last Judgment narrative). The proof is in the recent architectural and tourist-oriented use of the site by the Israeli authorities, who are attempting to short circuit the Christian axis, which connects the Garden of Gethsemane to the Via Dolorosa by a new promenade in stone which connects, on the diagonal, the ruins of the *Ophel* (the city of David) to the Jewish cemetery via the superb tomb of the prophet Zachariah. In this perspective, the Ezechias tunnel is a subterranean reinforcement for this new urban axis.

e. The rural springs

Extremely low precipitation prevents Jerusalem from becoming self sufficient as regards the water supply, even when including water from local springs to that of the cisterns within the city proper<sup>12</sup>. The city has always relied on more distant, and authentically rural sources of water supply. Solomon's Pools and the aqueduct are one example. Located eleven kilometers as the bird flies to the south-west of Jerusalem, on the road connecting Bethlehem to Hebron, the three pools of Solomon have a total theoretical capacity of over 150,000 cubic meters. The aqueduct connects these pools (on the side with an altitude of 768m) to the basins located under the *Haram-el-Cherif* (the lowest point of the city, at 736m). This is thus a work of art of great precision, since the total gradient is only 32 meters for a length of 24 kilometers, which corresponds to scarcely 130 centimeters per kilometer. In the nineteenth century, water hardly ever flowed out of the end of the aqueduct, despite frequent repairs. In his report presented to the city in 1894 and published in 1908, the engineer

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<sup>11</sup> Benvenisti, Meron, *Jérusalem, une histoire politique*, Solin-Actes Sud, 1996, p.11-16.

<sup>12</sup> HAJM, WS, c.614, "Rapport sur l'adduction des eaux d'Arroub", G. Franghia, 1908, p.14." The amount of rain in millimeters is on the average for the last ten years is 0.636m. It is not less than 0.455m (winter 1887-1888) or more than 0.958m (winter of 1890-1891)."

Franghia comments that these pools "were restored by Izet Pacha, the Governor of Jerusalem" and then stresses that "the aqueduct underwent its last repair in 1888 which apparently was not very efficient since the aqueduct currently doesn't work."<sup>13</sup> In the 1870s, Charles Warren reported that "the Solomon aqueduct was repaired with taxpayers' money... the poor fellahin were forced to bring their own stones and mortar to the site."<sup>14</sup> This was nothing less than forced labor, since the fellahin had to maintain a piece of infrastructure which was of no use to them and even deprived them of some of the water resources in their immediate environment. This competition between city and countryside is confirmed by a tourist guidebook published in Hebrew in the 1890s in which the author, Abraham Moses Luncz, describes the unsatisfactory repair of the aqueduct in 1866 by the famous British philanthropist Montefiore. "Moses Montefiore, who was in Jerusalem at the time, donated 300 pounds for this purpose. Nevertheless the inhabitants of our city did not enjoy the benefits for long. Water carriers and the residents of Bethlehem sabotaged the pipes soon afterwards, because they claimed sole ownership of Solomon's pools."<sup>15</sup> Bethlehem, which has always been a satellite of Jerusalem, thus rejected an infrastructure which crossed it underground, and which only served the inhabitants of Jerusalem, the provincial capital. The political and social reading of these water conflicts is confirmed by a report written by Max Magnus, published in 1909 by the Carl Franck Institute of Bremen. To cast doubts on the plan to re-use and modernize Solomon's aqueduct, defended by Franghia, the German engineer cites the legal claims to the source of the Arub which feeds Solomon's Pools: "I was told that the inhabitants of the villages around the Ein Arrub spring can need 500 cubic meters per day for themselves. If we recognized their rights, it would no longer be possible to provide the city of Jerusalem with enough water, even in the beginning..."<sup>16</sup> Use of the classic tools of the social sciences - for example the analysis of the conflicting interests between the city and its surroundings - enables us to break with essentialist historiography which interprets every conflict in Jerusalem primarily as a war of religion or a conflict between communities.

## II. The era of engineers and entrepreneurs: towards a political history of decision-making

The shaky balance between the multiple water resources and the still limited demands collapsed at the turn of the century. The population of

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<sup>13</sup> HAJM, WS, c.614, Franghia, 1908, p.20.

<sup>14</sup> Warren, Charles, *Underground Jerusalem*, 1876, p.441

<sup>15</sup> Luncz, A.M., *Guide of Eretz Israel and Syria*, p.131.

<sup>16</sup> HAJM, c. 614, Rapport sur l'alimentation de Jérusalem en eau, M. Magnus, 1909, p.7.

Jerusalem went from 10,000 inhabitants in about 1850 to 70,000 at about 1910, which increased basic water requirements from 300 cubic meters per day to more than 2000. At the start of the century, the engineers submitted water carrying plans which could provide 2000 cubic meters daily and in the future up to 5000 cubic meters to the city. Two-thirds of the sharp increase in the population of Jerusalem can be attributed to Zionist immigration. Whereas the three communities had about 4000 people in about 1850, the Jewish population of the city rose from 4000 to almost 40,000. At the same time the Christian and Moslems in the city each doubled their population, from 4000 to 10,000 each. However beyond the stakes raised by the Zionist project, analysis of previous failed attempts at modernization should lead to consideration of the abilities of the Ottoman administration to modernize, the various levels of provincial and municipal powers, in short to a political history of expertise and decision-making. In Jerusalem, the vulgate historiography concluded years ago that the Ottoman rulers were incapable of modernizing the urban networks. The colonialist ideology of the British mandate combined with the Zionist discourse to reject the image of the Ottoman period as a modernizing enterprise.<sup>17</sup> This is the condescending image of an "immobile and complicated East", the "long slumber of Jerusalem" from 1517 to 1917, and the overblown contrast between the impotence of the Ottoman administration and the golden age of Solomon's rule. If control over water, since the civilizations of High Egypt up to medieval Venice, has indeed always been the incontrovertible sign of political efficiency, Ottoman incompetence to satisfy the water supply needs of the Holy City would confirm its structural backwardness. It should however be pointed out that the situation never became catastrophic. The flexibility of the traditional systems always made it possible to respond to emergencies. This empirical adaptation did not impede a desire for a complete modernization of the system, as the technical projects preserved in the municipal archives show.

#### a. Evaluating the needs and defining a market

The first step in drawing up a plan for water supply is to conduct a financial feasibility study, which presupposes an evaluation of the needs of the population, in order to plan for the scope of a lucrative market. Engineer Franghia discusses the consumption figures for water of several large cities in the world (30 liters per inhabitant and per day in Barcelona,

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<sup>17</sup> This is even true for an illustrious representative of the "new Israeli history" Tom Segev, in *C'était en Palestine au temps des coquelicots*, (original title: *Yemei Ha Kalaniot*), Liana Levi, 2000, p.7: "*Palestine was under Ottoman rule. It was a distant province, without laws or administration. Life unfolded in slow motion, in the bind of tradition and at a camel's pace.*"

50 liters in Cairo, 80 liters in Alexandria, 215 liters in Paris) before concluding the following for Jerusalem. "35 to 40 liters of very pure spring water per day, in addition to the water captured in the cisterns is amply sufficient to place the city within the ranks of happy towns."<sup>18</sup> Although this estimate appears to be basically sound, (roughly 3000 liters per day in 1910) it does not differentiate drinking water, which is the basis for the water market at the Mugrabim Gate, from water destined for domestic use that stagnates in the private cisterns. This differentiation raises the issue of the discrepancy between the assessment of needs and the evaluation of the potential market. The German Max Magnus stressed this feature of Jerusalem in 1909 as follows: "*The water needed for household use is drawn from cisterns and a small quantity of drinking water is brought from the springs around the city, which can only be evaluated as up to 1.5 to 2 liters a day per capita and per day. By installing a conduit in Jerusalem it must be taken into account that the inhabitants, who already have cisterns in their houses, will not buy water from the pipes unless their cisterns are empty.*"<sup>19</sup> He estimated the initial need per inhabitant at a little more than 10 liters, which suggests a market of 1000 cubic meters per day maximum. This doubt as regards the financial viability of the plan was apparently decisive in determining the Zionist strategy in obtaining the concession for the water market. In a confidential report preserved in the Zionist Central Archives, it is stressed that "*the water market as a separate project should not be expected to generate large profits,*" and that the only way to amortize the investment was to link the water concession to electricity<sup>20</sup>. The report develops the same arguments as those made by Max Magnus, stressing that the inhabitants of Jerusalem "*will be slow to replace their cisterns by subscribing to a water supply network. By setting the price of the cubic meter at 70 or 80 cents, we can expect an immediate sale of 1000 cubic meters per day, and in the long term, this amount should increase up to 1700 cubic meters per day.*" The pessimistic estimate of needs and the definition of the water market apparently seem to generate a form of capitalist overbidding in Jerusalem. This overbidding would in fact guide the technical debates concerning the choice of springs.

#### b. Drawing up plans and disseminating information

The political history of the technical networks can also be revealed by analysis of the networks of dissemination of information and the study of lobbies in favor of the various projects. Between 1908 and 1910 there was a recrudescence of these proposals which apparently responded to a

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<sup>18</sup> HAJM, WS, c. 614, Franghia, 1908, p.12.

<sup>19</sup> HAJM, WS, c. 614, Magnus, 1909, p.4.

<sup>20</sup> CZA, Z.2. f. 642 November 1910.

renewed political demand on the part of the municipality. This resurgence of interest reached its peak with the publication of the Franghia report in 1908, and the Magnus report in 1909, and finally with the official publication of a tender by the Municipality in August 1910. The proposal presented by Engineer Franghia, the President of the Technical corps of the Engineering school of Constantinople, head of public works in Palestine, was to divert the sources of the Arub and to modernize Solomon's aqueduct in order to take greater advantage of the gradient to bring 2000 cubic meters of water per day to Jerusalem. Mgr. Damianos, the Patriarch of the Greek Orthodox Church of Jerusalem, who "*believed he was rendering service to the city of Jerusalem... authorized the printing, free of charge, of this study, on the printing presses of the Greek Convent of Saint Sepulchre*" underscores further the political implications of the proposal.<sup>21</sup> In fact it appears that the Franghia report was already obsolete when it was published, because the rise in domestic needs was more rapid than the drawing up and dissemination of the technical proposal. Other sources indicate that Franghia in fact began his study as early as 1889, and that the proposal he decided to have published in 1908 was identical to the one he had proposed to the municipality in 1894. This explains the ease with which the German engineer Max Magnus could refute Franghia's arguments. In a report published in November 1909, the director of the Carl Franck Institute of Bremen challenged the feasibility of the plan to deviate the source of the Arub and argues in favor of deviating the spring at Ein Fara, located 13 kilometers north of Jerusalem. The geographical location of the Ein Fara spring, 500 meters lower in altitude than Jerusalem, would require building electric pumps to carry the water to the Holy City, which implied a total budget of four million francs, double what the Franghia plan would have cost (which was apparently underestimated). Neither project was ever carried out because of lack of funding, and the analysis of these plans would be of limited interest and merely scholarly if the confidential report by the Zionist organizations had not referred to it.<sup>22</sup> This report, dated November 1910, emanates from Jacob H. Kann, a member of the Interior Committee of the Zionist Organization, director at the Jewish Colonial Trust bank, and follows up on a report by the Dutch engineer Meyer, sent to Jerusalem by the Zionist Executive Committee at the beginning of 1910. By comparing this report to other sources, it emerges that the Carl Franck Institute negotiated the writing of a plan at the start of 1909 with Dr. Arthur Ruppin, the director of the Palestine Bureau of the Zionist Organization in which Jewish funds would be mobilized. Apparently no agreement was reached and the August

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<sup>21</sup> HAJM, WS, c. 614, Franghia, 1908, p.3.

<sup>22</sup> CZA, Z.2. f.642, J.H. Kann, November 1910.

1910 tender once again launched the competition. In his report, Jacob H. Kann presents economic and political arguments in favor of involving Jewish banks in the water supply project in Jerusalem. The economic argument attempts to show that the water supply concession in Jerusalem, if it helps in the awarding of other contracts, such as electricity supply or the tramways could be profitable or at least viable financially because it would take benefit from the jumpstart to the Ottoman economy. The argument is primarily political, since Jacob Kann stresses that the success of the plan would help encourage Zionist immigration not only from the European lower classes but also from the 'cultivated classes': "*The water supply to Jerusalem is an important issue because it would contribute to a great extent to the improvement of the social conditions and conditions of hygiene which to this date are an obstacle to the settlement of immigrants from the cultivated classes of European society who are used to a better standard of living.*"<sup>23</sup> This highly political dimension of the history of technical networks in Jerusalem or elsewhere is hence nothing more than an exaggerated reading *a posteriori* by the historian. It is an obvious reality for the players in these conflicts, well aware of distributing water as well as governance through the underground networks.

### 3. The 1914 agreement: an unfinished story

The August 1910 tender, whose deadline was set for October 15, never resulted in any decision by the municipality. The solution to the problem appeared however to be imminent in the final days of the Ottoman period, at the start of the year 1914. On February 14, an 'agreement concerning the concession for the building and operation of the supply of drinking water to the city of Jerusalem' was signed. The bidder awarded the contract was an Ottoman citizen, Euripide Mavrommatis, living in Galata, in the modern districts of Istanbul. His name can also be found in 1926, during negotiations for the awarding of a concession for the supply of electricity to Jerusalem.<sup>24</sup> In the municipal archives, a document dated October 14, 1926 expresses concern over the difficulties of this same Euripide Mavrommatis in his management of work at the Ein Fara spring.<sup>25</sup> One thing is clear: although the War interrupted the concession signed in 1914, it did not prevent Mavrommatis from achieving his goals

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<sup>23</sup> HAJM, WS, c. 614, February 14, 1914.

<sup>24</sup> Jewish National University Library (JNUL), JL-GF, in 2, *Agreement as to Electricity Concession in Jerusalem - The Crown Agents for the Colonies and Euripide Mavrommatis*, Westminster, 1926. See also Aran, Michael, "*The Mavrommatis Affair: The Electric Power Concession in Jerusalem*" *Cathedra, For this history of Eretz-Israel and its Yeshuv*, 44 (1987), p.191-197.

<sup>25</sup> HAJM, WS, c.615, "Jerusalem Water Concession," October 14, 1926.

under the Mandate. The history of the water supply to Jerusalem at the end of the Ottoman Empire is clearly a chronicle of delays and failures, but the ensuing events show at least that the final plan, adopted in 1914, was viable. This February 1914 agreement must be read as a summary of the previous fifty years as well as the introduction of the Mandate period.

The 1914 agreement serves to confirm the relevance of the traditional forms of water supply mentioned earlier. Article 2 specifies that "*The contractor will have no rights whatsoever to impede the use of currently existing cistern water or wells or prevent the construction by the city or by individuals for purposes of free supply; as well as free use, as in the past, of water outlets in the city of Jerusalem brought by pipes, or the sale of water in barrels, bottles or other means as in the past.*" The municipal engineers and experts thus implicitly acknowledged the existence of parallel distribution networks, the logic of barter and gift-giving, and the complex social customs which had long governed the sharing and circulation of water in the city. This acknowledgement is also a rejection of an absolute monopoly and total commercialization: water in Jerusalem cannot be reduced to a simple commodity. As regards the Franghia plan or the Magnus plan the agreement does not make a choice: but stipulates municipal consultative powers, as indicated in article 3: "*The contractor is asked to draw up two plans, so that the Administration can choose one with the agreement of the contractor. One involves the Arub springs located south of Jerusalem and are described in the preliminary plan drawn up by the municipality in 1894, the other involves the springs at Ein Fara and Ein Fawar, located north of the city and taken into consideration by other writers. The contractor may also present any other plan he wishes. In case of disagreement between the city and the contractor as to which plan to select, the Ministry of Public Works will make the final choice.*"<sup>26</sup> The supposition that the Magnus plan was supported by outside parties and the Franghia plan by the local and municipal authorities appears to be validated. In any case, this is a far throw from the classic image of a *'remote province, without law or administration'*,<sup>27</sup> and apparently control over the affair by various levels of Ottoman power (from the municipality to the governor to the Ministry of Public Works) indeed occurred when the agreement was signed. The desire to compromise between a market strategy and the operation of a public service can be seen in article 11, where it is specified that the contractor must install and maintain 20 public fountains whose flow will be deducted from the 350 cubic meters provided every day to the city free of charge. The same article specifies that fifteen of these fountains will be "operational water points" whereas the five others will be "decorative," and that they

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<sup>26</sup> HAJM, WS, c.614, February 14, 1914, art. 5, p.3.

<sup>27</sup> Segev, Tom, op. cit., p.7.

'will be situated at locations designated by the City' as though to emphasize that the water points are still, at the turn of the century, as much anchor points as points of authority.<sup>28</sup>

Thus in the final months of the Empire, the same stakes and the same concerns can be found as those existing several decades previously: water remains a political issue, the public fountains are still a symbolic symbol and a material base for authority, and the underground water networks are still networks of power. This chronological permeability and this restatement of issues stresses the importance of the inheritances, the patching over and re-uses involved in territorial strategies in Jerusalem. A rapid overview of the situation today seems to confirm this intuition, at a time when the smallest defensive position, and the smallest 'stronghold' from the Golan heights to the Jordan valley settlements, is simultaneously a water tower.

Vincent Lemire

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<sup>28</sup> HAJM, WS, c.614, February 14, 1914, art. 11, p.16.