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Babylon in a New Era: The Chaldean and Achaemenid Empires (330-612 BC)

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Abstract

The new rise of Babylon is reported and its domination of the old world is described; when two dynasties ruled Neo- Babylonia from 612 BC to 330 BC. First, the Chaldeans had taken over from the Assyrians whom they had defeated and established their empire, which lasted for 77 years followed by the Achaemenid dynasty, which was to rule Babylonia for the remaining period as part of their empire. Out of the 77 years of the Chaldean period king, Nebuchadnezzar II ruled for 43 years, which were full of military achievements and construction works and organization. Apart from extending the borders of the empire, he had managed to construct large-scale hydraulic works which were intended for irrigation, navigation and even for defensive purposes. He excavated, re-excavated, and maintained four large feeder canals taking off from the Euphrates, which served the agriculture in the whole area between the Euphrates and the Tigris in the middle and lower Euphrates regions. Moreover, he was concerned with flood protection and so he constructed one large reservoir near Sippar at 60 km north of Babylon to be filled by the Euphrates excess water during floods and to be returned back to the river during low flow season in summer. His works involved river training projects, so he trained the Euphrates by digging artificial meanders to reduce the velocity of the flow and improving navigation and allow the construction of the canal intakes in a less turbulent flows. It seems also that he had diverted the river during the building of Babylon Bridge and trained the Euphrates River penetrating Babylon by constructing riverside revetments. Nebuchadnezzar II had the foresight for building extensive defensive fortifications to secure the country against possible enemy attacks from the north and adding to the walls and fortifications deep moats filled with water for higher security. This was the case with the wall he built north of Sippar. It extended over the whole distance between the two rivers, and the wall

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around Sippar itself. Similarly, he had dug a great moat alongside the wall of Babylon, which he supplied with water from the Euphrates. Moreover, he had introduced improvements on the four large feeder canals and the extensive canal networks that belonged to them to be used as water barriers against the advance of any enemy troops. Building temples and grand royal palaces and the Babylon Bridge took part of Nebuchadnezzar's attention and his name was linked with the "Babylon Hanging Gardens", one of the seven wonders of the ancient world, which he had built to please his wife. Description of the gardens according to historians is given in this book in addition to reporting the results of archeological digging of the supposed site, which can shed light on the irrigation method used to irrigate these elevated gardens. The flourishing agriculture and wealth and prosperity it had brought to Babylon during Nebuchadnezzar's reign is described in details, and the active trading and commercial dealing it had generated is also treated. The first banking services in history related to this period, which was linked to one Jewish family known as "House of Êigibi" is described. This family continued to serve for very long time by collecting the land rents and water taxes for canals use for the government, in addition to concluding contracts and ratifying transactions for the public. As bankers, they gave farmers loans to invest in all types of agrarian operations and practiced money transfers between various cities which helped trading especially with large scale export and imports of the various crops. The Chaldeans rule of Babylon came to an end in 539 BC when Babylon fell to the Achaemenids attacks that were already established in Persia led by Cyrus II. Babylon, however, kept a special position between the various capitols of this empire due to its splendor and wealth. It served therefore as the economical capitol and the winter residence of the kings Achaemenid Empire for most of this period while its agriculture continued to generate a great portion of the empire's revenue. The archive gave us information on the agrarian relations and the agricultural outputs in Babylonia at that period. During the Achaemenid times, as it was the case during the Chaldean times, irrigation systems in Babylonia were kept under close observation and good maintenance which kept agriculture at its best. The inevitable decline of this empire came in the end due to the rule of weak kings, conspiracies and palace intrigues, and finally the bitter defeat came on the hands of Alexander the Great who entered Babylon in 331 BC and kept it as the Jewel of his new empire.

Keywords: Babylon, New Era, Chaldean, Achaemenid Empires, Iraq

Apart from short periods of disobedience under the Assyrian Empire, the Akkadian and Babylonian cities of Southern and Middle Mesopotamia lived peacefully, but they were reduced to provincial cities governed by the Assyrian Kings or their vassals for the whole period of the Assyrian Empire of almost 300 years.

The inhabitants continued to pay taxes and other dues to the central government, which were essential to maintain the upkeep of the Assyrian armies, support the King's campaigns, and sustain the prosperity of Assyria. The provincial governors or King's vassals saw to the collection of the levied taxes and dues; and especially

those originating from trading and agriculture. Agriculture was therefore, of great importance and interest to those rulers, who kept an open eye on it and made sure that the irrigation systems were maintained regularly in the usual routines that were common for the previous hundreds of years. We do not expect, however, that the methods and ways of irrigation had changed much from previous practices, since these methods and ways had been brought up already too high level of efficiency during the past times. Salinity and the salinization of land, however, remained a constant threat to the fertility of the land.

Flood protection was the other communal activity which deserved constant attention and actions; and the people continued to combat the dangers of the Tigris and Euphrates high floods. Again such protection works remained the same as previous and we may add that the same were applied in the following years up to the days of modern Iraq. The inhabitants of Lower and Middle Mesopotamian cities continued their normal ways of life for all the time they were under the umbrella of the Assyrian Empire, and they were sure that no foreign invader could infringe on their territories, as long as they were there. At the same time, they were sure that any uprising if they had ever contemplated would be crushed in the brutal way that was known for the Assyrians.

During all this period, except for some short spells of time, Babylon remained a flourishing and wealthy city and competed with Nineveh in its beauty and grandeur. Babylon was considered by the Assyrian Kings as the sister city to Nineveh and even was ruled for some times directly by some of them until the fall of the Assyrian Empire at the hands of the Chaldeans and their allies leading to the rise of the Neo-Babylonian Empire. So in order to put the reader in the right perspective, it is worthwhile here to give a short summary of the events leading to the rise again of Babylon in this new era.

After the death of the great Babylonian King Hammurabi of the older Babylonian dynasty, the following Kings were weak and Babylonia fell in 911BC to the domination of Assyria. Further migration in the early 9th century BC of nomads from the Levant had occurred with the arrival of the Chaldeans, another nomadic tribe of the northwestern Semitic peoples who were mentioned in the Assyrian annals as the "Kaldu". The Chaldeans settled in the far southwest of Babylonia, joining the already long extant Aramaean and Suteans. By 850 BC the migrant Chaldeans were well established there, and as time passed, the Chaldeans began to cause unrest and troubles to the Assyrians. Babylonia briefly fell to the Chaldeans in 780 BC until 748 when it was subjugated and ruled again by the Assyrian Kings' vassals. It was not until 729 BC that the Assyrian King decided to rule Babylon directly as its King contrary to what his predecessors had done for two hundred years.

The Assyrian King Shalmaneser V was declared King of Babylon in 727 BC until his death. In 722 BC revolt was then fomented against the Assyrian domination by Marduk-apla-iddina II, a Chaldean malka (chieftain) with strong Elamites' support and managed to take the throne of Babylon itself between 721–710 BC. This was brought about at a time when the Assyrian King Sargon II (722–705 BC) was busy

fighting the Scythians and Cimmerians that had attacked Assyria's Persian and te Median vassal colonies in ancient Persia.

Marduk-apla-iddina II was eventually defeated and ejected by Sargon II and fled to his protectors in Elam. Sargon II was then declared King in Babylon, who then was followed by Sennacherib (705–681 BC) his son.

After ruling Babylon directly for a while, Sennacherib placed his son Ashur-nadin-shumi on the throne of Babylon, but the Chaldeans and their allies the Medes continued to stir trouble; a thing which led Sennacherib to invade and subjugate Elam and sack Babylon, laying it to waste and largely destroying the city. Sennacherib died in Nineveh in 681 BC, and the new King, his son; Esarhaddon placed Marduk-zakir-shumi II on the throne of Babylon. Once more, the Chaldeans managed to take over the city forcing Esarhaddon to attack Babylon who then ruled it personally. At this time, he completely rebuilt the city, bringing rejuvenation and peace to the region. But, before his death, and in an effort to maintain harmony within his vast empire, he installed his eldest son Shamash-shum-ukin as a subject King in Babylon, and his youngest, the highly educated Ashurbanipal (669–627 BC in the more senior position as King of Assyria and the overlord of Shamash-shum-ukin.

Despite being an Assyrian himself, Shamash-shum-ukin, after decades of subjugation to his brother revolted against him and led a powerful coalition of peoples also resentful of the Assyrian tyranny, including; Elamites, Medes, the Babylonians, Chaldeans and Suteans of southern Mesopotamia. In the aftermath of bitter fighting, this bloody period ended, and Babylon was sacked again; Elam was destroyed; Shamash-shum-ukim was killed, and the rebels were vanquished by the Assyrian troops who exacted savage revenge on the rebelling people, and an Assyrian governor named Kandalanu was appointed to rule Babylonia on behalf of the Assyrian King.

As the story of Babylon continues to unfold, we see that upon Ashurbanipal's death in 627 BC, his son Ashur-etil-ilani (627–623 BC) became the King. However, the cessation of Egypt from the empire during the last days of Ashurbanipal had already dealt a severe blow to the Assyrian Empire and led to its rapid decline and demise. Following the death of Ashurbanipal, the new governor of Babylon was expelled by a Babylonian Chaldean soldier named Nabopolassar, who had once fought in the Assyrian army but now started a Kingdom for himself. He was recognized as King on 23 November 626, which marked the beginning of the Neo-Babylonian Empire. Nabopolassar continued fighting against Assyria, so that in 616 BC, he defeated an Assyrian force on the banks of the Euphrates, south of Harran in the west. He was forced; however, to retreat when an Egyptian army approached.

In the following year, the Babylonian king changed his strategy and invaded the Assyrian heartland, where he laid siege to Ashur, the religious capital of Assyria. The Assyrians were able to repel their enemy, but late in 615, the Medes, a tribal federation living in modern Iran, intervened. After the winter, they captured Nineveh, and although Nabopolassar arrived too late to help them, he signed a treaty with their King Cyaxares. Berossus, a Hellenistic-era Babylonian writer, wrote

later on that the alliance was cemented by a royal wedding: the Babylonian crown prince Nebuchadnezzar married a princess named Amytis, the daughter of Cyaxares[1].

The fall of the Assyrian Empire and the vanquishing of its territories by the Chaldeans and their allies ushered the new Babylonian era, seeing the Chaldeans as the new masters of Babylon under their new King Nabopolassar. The new Empire became then the most powerful state of the time in the ancient world. But this new empire, however, was short lived compared to the long timeline of Mesopotamian history in general, and the history of Babylonia itself, in particular, Figure 40.

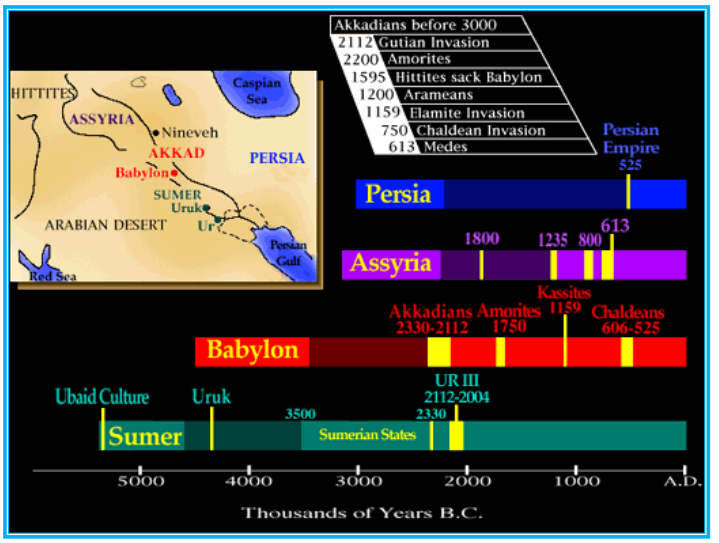

Figure 40: Babylon on the time line scale of Mesopotamia [2].

For the seventy-seven years which made the age of the *Chaldean Empire* (626- 539 BC), only six Kings had ruled. *Nabopolassar* the first King of this dynasty ruled for twenty-one years (626–605 BC) and was busy securing the boundaries of the Kingdom and overtaking the remains of the *Assyrian Empire*. His son *Nebuchadnezzar II* ruled for forty-three years (605–562 BC) and was the one who made *Babylon* great once again. By judging from available evidence it is very clear to historians that *Nebuchadnezzar II* was the wisest of all those Kings and the most efficient builder at home and conqueror outside, and the following growth and prosperity of the Empire were due to him; Figure 41 indicates the extent of the Chaldean Empire at his time.

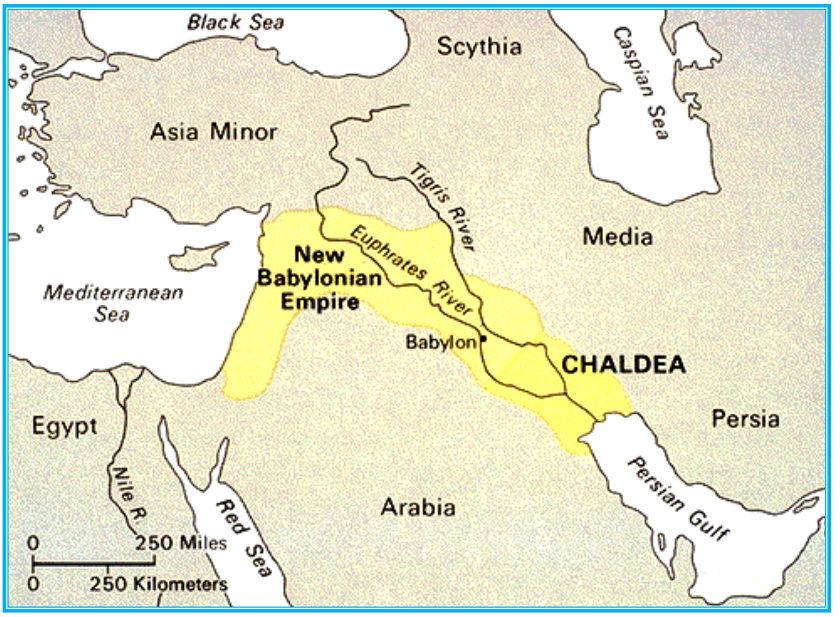

Figure 41: The Neo Babylonian (Chaldean) empire [3].

Upon ascension to the throne of the Kingdom *Nebuchadnezzar II* was very much wary of his powerful northern neighbors, the *Medes*, although he had married the sister of *Ishtuvêgu*, King of the *Medes*, the daughter of *Cyaxares* and his father's ally to consolidate and keep this alliance alive and in order to normalize the bilateral relations between the two neighbors. He kept, however, a watchful eye on the north where the *Medes* danger could come from; and while constructing the *Hanging Gardens* to please his *Median* wife, as the story goes, he constructed great fortifications north of the town of *Sippar* further up north to eliminate any threat from them. In addition, he built the great wall, which extended all the way between the Euphrates and the Tigris Rivers, and he coupled these constructions with excavating vast networks of canals, which served the dual purpose of irrigation and defense. His care for irrigation, however, cannot be denied for one of his important tasks was ensuring good yield of the crop, which was essentially required by the population, and he did this by maintaining the existing irrigation canals` network and constructing new ones.

In his first construction endeavors *Nebuchadnezzar II* undertook the building of fortifications to Sippar itself, which was located 60 km north of *Babylon* which he had expected to be attacked first in any invasion. Moreover, he ordered and oversaw cleaning of the canals, which were neglected by the previous Kings and were half-chocked with sediments and had their sluices and dams repaired and put them in good working conditions. Finally, he turned his attention to excavate new canals, which had proven to be his greater achievements.

Nebuchadnezzar II managed during his reign to excavate four large navigable canals

across the land, to unite the Tigris and Euphrates. The width and depth of each canal were enough to carry merchant ships. They were branching into networks of smaller canals and ditches for irrigating the fields, and in order to control fully the increased mass of the flow, which the canals had carried; *Nebuchadnezzar* created a huge basin or reservoir near *Sippar* on the left bank of the Euphrates by flooding a depression near the present-day town called Yusifiyah. The reservoir according to the description of *Herodotus* was some thirty-five miles in circumference and so many feet in depth, but other writers gave higher figures. Water was supplied to the reservoir by a very large canal which had existed already and re-excavated by *Nebuchadnezzar* and was known as "*Nahr Malka*" or the "*Kings River*". Stored water in the *Sippar* reservoir was then released back to the Euphrates to replenish its flow during low water seasons, and therefore, acting as the first re- regulating schemes in history. Moreover, *Nahr Malka* canal drew great deal of the Euphrates water to the Tigris River and was used as a very important navigable link between the two rivers.

The four canal networks so excavated and arranged continued to serve irrigation of the lands of the middle and lower Mesopotamia to a later time as to the end of the *Abbasid* period in the twelfth century AD. These canals and their networks are fully described in paper 8 of this book.

Nebuchadnezzar hydraulic works were extensive and were not limited to irrigation networks only, for he provided in addition to canals excavation an elaborate and complete set of hydraulic structures to control the canals and to allow filling and emptying of *Sippar* reservoir as deemed necessary.

To complete harnessing the mighty Euphrates River, its course was slightly altered in some stretches to turn it in a sinuous line by excavating man-made meanders at some distance from one another and therefore, reduce its grade. This was meant to reduce the force of the current, which was very beneficial in high water seasons and did not only make navigation up the stream easier, but gave fuller control of the river as great part of its discharge was diverted to *Sippar* reservoir in times of floods. The importance of this reservoir was in eliminating the dangers of spring floods and in the provision of water for use in times of drought. Similar action was taken when *Nebuchadnezzar* built his celebrated bridge across the Euphrates in *Babylon* in the dry, whereby he diverted the river and allowed his workmen to construct the mighty buttressed piers of the bridge from quarry stones clamped with iron and soldered with molten lead, and line the banks with masonry of the best kiln- burned brick **[4]**.

It is very clear that these four Irrigation and navigation canals and even the reservoir at *Sippar* were parts of a very efficient system of defense against any possible invasion from the north. Not only they presented obstacles, which would take time to overcome, but in case of a desperate emergency whole regions could be flooded and thus made inaccessible or untenable.

All this did not seem sufficient safeguards to satisfy the King's anxious foresight as he knew well that these alluvial lands had never offered much of an obstacle to invaders in the past, so in his determination to strengthen his defenses, he undertook

the addition of a mighty wall. This wall he built across the valley, from the Euphrates to the Tigris above the location of the four canals and included within its bounds the well-fortified city of *Sippar* itself. In the words of the 19th century British Engineer Sir William Willcocks, he wrote on this saying:

"*As in the ancient days the fortified right bank of the Nahrawn Canal, the wall of Semeramis and the Median wall protected Babylonia from surprise attacks from the Assyrians and Medians"* **[5]**.

The wall was constructed entirely of burned bricks held together by asphalt cement; and *Xenophone*, the ancient Greek writer (430–354 BC) who saw later some portions of it standing and called it the "*Median Wall*" wrote in its description:

"*It was built of baked bricks laid upon bitumen. It was twenty feet broad and a hundred feet high, and the length was said to be a twenty parasange (70 English miles). It lies at no great distance from Babylon"* **[6]**.

In most of *Nebuchadnezzar* public works and construction undertakings, it is obvious that his dominant objective was to couple all these with defense requirement. Even in building his heavily fortified palaces, the great city walls, and the flood embankments of the Euphrates, these objectives were constantly pursued. Recalling that the last time when *Babylon* fell at the hands of *Sinnecharib*, and also knowing that the submission of the city was brought about because of the famine it went through when the city was put under siege, so *Nebuchadnezzar* was not contended with building great and heavily fortified wall around the city itself but went about and constructed an outer wall which was moved to such a distance as to enclose a large portion of the agricultural land to be cultivated so that the capital could raise enough grain and fodder for its own consumption. This vast space also would serve to shelter the population of the surrounding villages in case of an invasion.

The wall which was called *"Nimit-Ti- Beil"* could not be traced exactly by archaeologists later on to determine how many square miles of agricultural lands it did protect but the reports of ancient writers on it are somewhat conflicting. *Herodotus* in his account gave the circumference of the wall as somewhat over fifty English miles, and he explained that besides the arable and pasturelands, it must have embraced suburbs, not impossibly the city of *Borsib* itself, which was also well fortified at the same time. A more modest estimate gave forty miles.

The *Nimit-Ti- Beil* according to *Herodotus* was protected on the outside by a wide and deep trench which at the same time had supplied the material for the wall. The words of *Herodotus'* in fact, had betrayed his astonishment when he wrote:

"And how I may not omit to tell the use to which the moat dug out and the great moat was turned, nor the manner wherein the wall was wrought. As fast as they dug the moat, the soil which they got from the cutting was made into bricks in kilns. Then they set to building and began with bricking in the borders of the moat, after which they proceeded to construct the wall itself, using throughout for their cement hot bitumen, and interposing a layer of wetted reeds at every thirteenth course of bricks" **[7]**.

On *Nimit-Ti- Beil* wall Herodotus wrote a very detailed description in which he

stated that it was 350 feet high apparently including the height of the towers, which were built at regular intervals on top of the wall, and it had a thickness of about 75 feet, which is probably overestimated. But the undisputed fact remains that the *Nimit-Ti-Beil* rampart wall was stupendous both in height and in thickness; that towers were built on the top of it, on the edges, two facing each other, and that the remaining space between was enough for a four- horsed chariot to turn. In addition, for all this, we need not to have much imagination to realize that a wall of such height and extending for about fifty miles is an extremely tremendous job built by the sheer strength and toils of men using such tools as of that ancient times.

This outer wall, reckoned by *Herodotus* as the main defense of the city, was not the only one. A second inner wall, named "*Imgur- Beil*", was also built by *Nebuchadnezzar*, which did not lack strength and volume. Then there were the walls enclosing the two royal palaces, the one on the right bank of the Euphrates that was built by his father *Nabopolassar* and the new one opposite to it on the left bank, which made them two fortresses.

For more convenience *Nebuchadnezzar* built in *Babylon* a great bridge on the river, but his obsession with security drove him to order the construction of the bridge deck to be of movable beams and planks so it would be possible to remove them during night and stop any crossing. In any case, this bridge was not enough for the population of the city so *Nebuchadnezzar* arranged for the constructions of riverside platforms whereby people could cross from one side to the other using boats.

Another river training works included straightening the river course within the city and lining the sides with revetments of burnt clay bricks and building two high walls alongside these banks. The communication of people could be maintained between the two banks by leaving gates through the two walls, which open to the riverside platforms. These gates would also be closed at night.

Apart from the river training works he had carried out near *Sippar*, that were described already, it was claimed that he had diverted the river around Babylon to make possible of the construction of his great bridge piers in the dry. We take; however, the liberties to dispute this matter as any remnants of such a diversion are absent, and we may therefore advance instead of that the idea that he might have enclosed parts of the channel by cofferdams at various stages of construction to facilitate this work as we do these days in constructing any dam or a bridge in the river section.

The total length of the bridge as shown from excavations was one hundred and twenty-three meters, and it had seven piers, each one having a length of twenty-one meters. To fill more details on the fortifications of Babylon, which this King had completed, the excavation carried out in its ruin shed light on this. For during this excavation, many citadels were uncovered in the city wall showing a wide moat running around its outer perimeter. This was connected to the Euphrates to form the water barrier, and from it, many canals pierced the citadels' walls presumably to supply water to the population and inner-city parks. Much of this information is owed to the work of the German Archaeological Expeditions which started work there in March 1899 and continued regularly until May 1912**[8]**.

In other achievements, besides irrigation and fortification, another striking work had tickled the imagination of historians, due to its supposed romantic background, and might even have led them to add more fantasy to it than truth. In many of the writings of those past historians on *Nebuchadnezzar* works, it was clear that the description of the "*Babylon Hanging Gardens*" had aroused their imaginations. Many of the Greek and Roman writers such as *Herodotus* placed these gardens among the "*Seven Wonders of the ancient world*". Although *Flavius Josephus*, the Romano- Jewish Greek historian, who had lived in the first century AD, clearly linked the *"Hanging Gardens"* to the works of *Nebuchadnezzar*, we find a lot of confusion on this subject in the writing of many other authors. Some of them did not credit its construction to *Nebuchadnezzar* but considered that it belonged to a legendary *Assyrian* queen called *Shameram* (Semeramis). *Herodotus*, with no other historical support, had claimed that most of the other works of *Nebuchadnezzar* including this one were actually the work of Nitocris [(7)]**.** Moreover, an opinion is held by one contemporary author today in which she rules out that these gardens were ever built in Babylon but in Nineva and credits it to *Sinnecharib*[9].

The romantic story, which has been very commonly told about the reason of the construction of the "Hanging Garden", informs us that the great King *Nebuchadnezzar* was intent on pleasing his *Median* wife *Amytis*, daughter of *Cyaxares*, the previous King *of Media*, as she longed to the breeze and sceneries of the Zagros Mountains where she was born. So, on an artificial hill, he planted in its terraces the most beautiful trees, and on the topmost terrace, he erected a shelter for the queen where she could enjoy the purest air and the pleasant shades. The woman so loved might have felt well compensated even for the loss of the native scenery in Zagros wilds, for which her terraced Grove, some 500 feet square, could not be put an equal substitute. The grandeur of the place drove the Greeks and the Romans, as said already, to think it worthy of a place among their "Seven Wonders", along with that of the wall of *Babylon*, the temple of *Beil*, that of *Artemis* at *Ephesus*, and a few other monuments[4]**.**

We, however, shall put all the arguments on the reality of the story aside, for the moment, and allow us the pleasure of describing this wonder while take the opportunity to contemplate on how these elevated gardens, who ever had built them, were irrigated being that high. The four terraces forming the gardens were born on arched vaults supported by pillars, all built of well cemented bricks. The pillars were sixty feet apart, and twenty-two feet in circumference. On the topmost, terrace was the pump- house, with the hydraulic machinery for raising the water through pipes from the Euphrates, or rather, from a canal, which brought water within easy reach, and so that the scheme should not be noticed from the outside. Hurmuzd Rassam, in the 1850s during his excavation in the ruins of *Babylon* which was called by locals, *Mound Babel*, had come across what was believed to be the source of water to these gardens. Rassam was a native Christian from Mosul who had spent a good part of his life digging in the ruins of *Nineveh*, and *Nimrud* in participation with British archeologists who worked in these places at the end of the nineteenth century. It is from the book on his works, we may draw this paragraph on his discovery of

the "*Hanging Gardens*" and we quote his own words:

"In the Mound of Babel, which is no doubt the site of the hanging gardens, as I shall prove presently, I followed the excavations of the Arabs, who were digging for bricks, and uncovered four exquisitely-built wells of red granite in the southern center of the mound;, three were situated in a parallel line within few feet of each other, and one was some distance from them in a southeasterly direction. Their engineering and scientific erection reflected great credit upon the designer. Each well is built of circular pieces of granite, which must have been brought from great distance in Northern Mesopotamia, as there is no quarry of that nature to be seen anywhere within five hundred miles up the river. Each stone, which is about three feet in height had been bored and made to fit the one below it exactly that one would imagine that the whole well was hewn in one solid rock. On digging to the bottom of these wells, it was found to communicate with an aqueduct supplied with water from the Euphrates, or a canal which must have skirted the North Eastern corner of the mound. Even when I dug into the watercourse when the river was high, the water oozed out through the debris, though the Euphrates ran then about a mile from it. These wells, which were about one hundred and forty feet higher when I uncovered them, and could not have been less than fifty or sixty feet higher originally must have been erected exclusively for irrigating the hanging gardens, since they doubtless stood higher than any other building in the city on account of the commanding position the Mound of Babel occupied. These stones-built wells are quite peculiar to that spot, because all the wells that have hitherto been discovered in Assyria and Babylon were of same style of Architecture, consisting of hard backed bricks, molded in such a shape as to fit regularly to each other".

So, if Rassam's theory is held to be correct then water must have been lifted by certain lifting devices, which were driven continuously by slaves to secure enough irrigation water. Rassam in support of his theory cites from the writings of *Strabo*, who was a Greek geographer, philosopher, and historian who lived in (63 BC – AD 24), and from *Quintus Curtius Rufus,* who was a Roman historian, probably of the 1st, century, that the *Hanging Gardens* were very close to the river. Moreover, *Diodorus*, a Greek historian of the first century BC, in particular, mentioned that the water was drawn by engines through conduits for irrigating the surface**[10]**.

In any case, the wealth and prosperity of *Babylon* would not have been possible without irrigation; a thing which was very clear to the *Babylonians* and this was even more so to all the Kings who ruled during the long history of *Babylon*. So, *Nebuchadnezzar* always saw the maintenance of the vast irrigation networks and adding new canals as first duty.

The affluence that agriculture had brought to *Babylon* fueled the progress of all sorts of crafts and the development of trade all over the region. *Babylon* became the center of exports and imports to and from all the other cities within the empire's boundaries. Again, *Herodotus* gives a vivid description of this and states:

"*Of all countries that we know, there is none, which is so fruitful in grain. It makes no pretension indeed of growing the fig, the olive, the vine, or any other tree of the kind; but in grain, it is so fruitful as to yield commonly two-hundred-fold, and*

when the production is the greatest, even three-hundred-fold. The blade of the wheat-plant and barley-plant is often four fingers in breadth. As for the millet and the sesame, I shall not say to what height they grow, though within my own knowledge; for I am not ignorant that what I have already written concerning the fruitfulness of Babylonia must seem incredible to those who have never visited the country. The only oil they use is made from the sesame-plant' **[7].**

During his work digging in *Babylon* ruins in 1899 for the German Oriental Institute, Koldeway, gave colorful description of the lush date palm orchards and the luxurious fields that must have stretched along the Euphrates banks during the *Babylonian* times taking parallel from those that existed during his stay. He went to say on this that after planting, palm trees would need regular irrigation only during the first year but soon after they grow of themselves, and the roots of a fully-grown tree are supposed to reach ground water. The photograph in Figure 42 was taken in 1914 by Koldewey himself of an existing orchard on the Euphrates very close to the ruins of *Babylon*[8], while Figure 43 shows an artist's impression of these orchards as visualized during the Chaldean's era[11]. The agriculture of *Babylon* and the flourishing trading activates that were principally based on it were supported by a very efficient economic and commercial system, which included collection of taxes levied on the crops, duties for using the irrigation canals, in addition to the legalization of commercial transactions covering sells and purchases.

In the *Neo-Babylonian* era these activates were developed further to arranging and collecting loans and concluding contracts for agricultural purposes and other financial business and operations in addition to money transfers to beneficiaries in other towns and cities. In this matter the "*House of Êigibi*" a famous banking family of that time is worth recording.

The story of this family was revealed to the world by sheer luck when the British Archeologist George Smith came across some terra cotta jars, while suspecting their worth, he managed to buy them from a dealer in Baghdad for 70 pounds. These jars happened to contain 3000 pieces of miniature tablets, ranging in size from one square inch to twelve.

Figure 42: Palm trees grove close to Babylon's ruins [8].

Figure 43: Chaldean Palm Grove [11].

Upon examination, these tablets were found to be documents recording all sorts of transitions and bearing the names of the parties involved. These were nothing less than the archives of the "*House of Êigibi*". From the information inscribed on these tablets it appeared that this family was entrusted with the collection of taxes levied on land, and the crops of corn, dates, etc.., in addition to the dues for the use of the public roads and the irrigation canals, etc., Their activities extended beyond the city of *Babylon* to some neighboring cities and provinces. The functions of notary public were added to their other duties and included; concluding, certifying and ratifying business deals in all branches of social life and mutual relations. Their other commercial dealings covered money lending and executing loans.

The history of the family seems to have started with the founder; a certain *Êigibi* who had possessed immense wealth and influence and was probably the head of the house in the reign of *Sinnecharib* about 685BC. Professor Friedrich Delitzsch reached the conclusion that the name *Êigibi* is the equivalent to the Hebrew YAKÛB (Jacob), from which fact he inferred that the great banker must have been a Jew. Most probably this man was one of those Jews taken into captivity by *Sargon II* out from *Samaria*. It was evident that the family had reached the climax of its wealth and power under *Nebuchadnezzar*. The signatures on the tablets bore the names of his sons and grandsons showing that the activities of this house extended over many generations. Rassam in 1882 managed to dig out and add several hundred

more tablets to the three thousands bought by George Smith, which are kept now in the British Museum. Among Rassam finds there were some pieces, which dated to the reign of *Alexander* the Great in *Babylon*. This indicates that the work of the "*House of Êigibi*" had continued for nearly four hundred years which may deserve them the name of the "*Babylonian Rothschild's"*". The family as it seems had survived the storms of the two sieges under *Sinnecharib* and *Assurbanipal*, as they were to pass safely through several more similar political crises protected by their exceptional position, which made them very useful–and necessary and not to be harmed, while at the same time Professor Friedrich Delitzsch tells us also that they were entrusted by all the financial businesses of the court **[4].**

The golden days of the *Babylonian* ended, when *Cyrus II,* the rising King of the *Achaemenids,* attacked and conquered *Babylon* in 539 BC. After a half century of military expansion, political accomplishments and building achievements, the successors of *Nebuchadnezzar II* were short-lived monarchs, weakened by all sorts of palace intrigues. *Amel-Marduk* (561-560 BC) reigned for only two years, before being assassinated by his brother-in-law, *Neriglissar* (559-556 BC). After *Neriglissar's* death, his young son, *Labashi-Marduk* (556 BC) reigned for barely a month before *Nabonidus* (555-539 BC) seized the throne. Although very little is known about this King, which was not from royal roots himself, some stories said he had taken up the worship of the Moon God as his religion, and possibly because of the *Babylonian* population resentment of this the *Persian* conquest of the region seemed straightforward.

In 539 BC, *Cyrus II* entered the country and after one major battle, which was won by the *Persians* near the confluence of the Diyala and Tigris Rivers *Cyrus II* took over other cities without resistance. On October 12, 539 BC, *Babylon* fell and the native rule over the whole area was ended for many centuries. With *Babylon* which was the capital of the *Neo- Babylonian* empire, *Persia* gained the entire territory of the *Babylonian* empire and profited from *Babylonia's* earlier achievements in its unprecedented expansion**[12]**. This was one hard lesson of history, which tells, that all fortifications and wealth are of no use if corruption prevails.

The fall of *Babylon* paved the way to a new era in the history of Mesopotamia, for this was the beginning of the first *Persian Empire's* rule of this land, which was the *Achaemenid Empire* (550–330 BC). This empire was based in South Western Iran, founded by *Cyrus the Great*, and in its greatest extension covered 5.5 million square kilometers, from the Balkans to the Indus Valley, and it was reckoned kilometers, from the Balkans to the Indus Valley, and it was reckoned at that time as the largest empire which was ever known, Figure 44.

The Achaemenids were nomadic Persians, who had lived in the southwestern part of the present day Iran at about 1000 BC and managed to establish their first small Kingdom there. This Kingdom was subjugated to the *Median Empire* for a long time. Their remote place and the preoccupation of the *Medes* in the defense of their empire against the frequent attacks of the *Assyrians* gave the *Achaemenids* the opportunity to grow gradually in strength and influence until the rise of *Cyrus II*, (600- 530 BC) whose mother was

Mindana the daughter of the *Median* King *Astyages,* and his father was *Kambyses I*, King of the *Achaemenid*.
Cyrus II managed at the start to ally with the last King of *Babylonia Nabonidus* and turned against his grandfather *Astyages*, the King of the *Medes* and defeated him in battle and then set out to incorporate the existing empires of the ancient east. *Cyrus* ordered the building of a new capital to his empire whose remains stand now near the City of *Shiraz* and called it *Pasargadae* **(**559–550 BC). We know that other capitals were also built by the *Achaeminds* Kings and took them as their capital cities in addition to *Pasargadae* during the history of this empire. Special interest was paid to *Babylon* by the *Persian Kings,* and it became the residence of th Royal Court in winter as one of the capitals of the empire along with *Susa*, *Persepolis* and *Ecabatana*, and its population became a mix of native *Babylonians*, *Achaemenidens*, *Egyptians*, *Western Semites*, *Medies* and imigrants from *Asia Minor* and other parts of the empire.

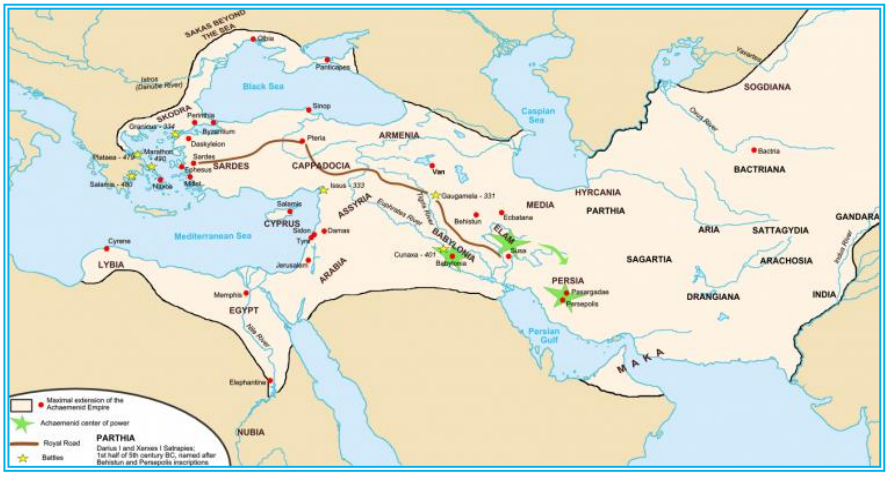

Figure 44: Map of the Persian Achaemenid Empire under the reigns of Darius the great and Xerxes, (https://www.ancient.eu/image/148/).

These were soldiers, officials, functionaries, and traders **[8].** *Cyrus* utilized his tactical genius, as well as his understanding of the socio-political conditions within his territories to eventually incorporate into the empire neighboring *Lydia* and the whole *Neo-Babylonian Empire*. He was the first King in history who had attempted to govern different ethnic groups on the principle of equal rights and responsibilities, so long as the subjects paid their taxes and kept the peace. The King also did not interfere with the local customs, religions, and trades of his subject states, and so he won the support of the *Babylonians*.
The management of such a large empire brought with it the need for keeping order and control and led to large expenditure of resources and mobilization of troops to quell local rebellions**[13]**. After the death of *Cyrus II* twelve Kings ruled the empire

until it crumbled at the hands of *Alexander* (The Great) in 336 BC during the reign of *Darius III* (338- 336 BC).

During the two centuries of the *Achaeminds* domination the *Babylonian* culture continued to develop. Mathematical astronomy reached a considerable new height; its successes were among the most impressive achievements of ancient civilizations, and within the same period *Babylonian* law reached its heyday. Agriculture, in particular flourished as one of the main sources of income to the empire, and it would seem that the giant irrigation systems inherited from the previous generations were well kept and taken care of. Some changes might have happened gradually in the socio-economic relations, but the *Persian* administration in *Babylonia*, as well as the royal court, spent autumn and winter in *Babylon* and made extensive use of the local scribes' services writing in *Aramaic* and *Akkadian*.

Although the state chancelleries in *Achaemenid Babylonia* used *Aramaic, Akkadian* remained the language of religious cult and medical and mathematical literature as well as to a certain degree legal document. The *Achaemenid Babylon* became the cosmopolitan city of that time with such mixed population of different ethnic origins. In addition, to native *Babylonian`s* considerable number of *Iranians* (*Persians, Medes, Arians, Sakai, etc*.) who were royal officials and soldiers or who came to live in the country for various reasons. These Iranians are frequently referred to in *Babylonian* documents as contracting parties, witnesses and officials of the royal administration**[14]**.

Mesopotamia carried special weight and importance to the *Achaemenid Empire* and to fully understand this; it is important to look in the administrative framework of the empire on which governance was based. For the *Achaemenid Empire* was divided into twenty regions (*Satrapies*) with one governor (*Satrap*) taking care of one of each of these regions; of which we mention, for example, India, Ionia, Egypt and Mesopotamia (*Ashur and Babylonia*). All these *Satrapies* were of such importance that the *Achaemenid King* called himself among other titles King of Kings.

The geopolitical situation of *Babylonia*, however, went through some changes during the history of the *Achaemenid Empire*. For *Nabonidus*, the last *Babylonian* King, who had actually handed over *Babylon* to *Cyrus II* **[15]** continued in his post as the vassal King for the first four years after the *Persian* conquest. In 535 BC, however, *King Cyrus* merged Mesopotamia and "*Across-the-River*" (Syria) in a single province and appointed for the new *Satrapy* the *Persian* (*Gubaru*), who remained in this post until as late as 525 BC. But at the beginning of the rule of *Darius I*, grandson of *Cyrus II*, this King undertook significant reorganization of the *Satrapies.* In particular, around March 520 BC, a *Persian*, (Ustanu) was appointed governor of *Babylonia* and "*beyond-the-River*", and the retrieved historical documents which referred to him as *Satrap* of this province belonged to the period between 520 and 516BC.

Within this set up, the study of social life and economic conditions in Mesopotamia is necessary in order to fully understand the agricultural environment and irrigation during the *Achaemenid* period. Many scholars have concentrated their work on

studying the *Babylonian* documents from that period which have shed light on these aspects indicating that some important changes in the main social institutions, political and economic life, and even in the *Babylonia* ideology had occurred during the *Achaemenid* rule as contrasted with previous times[16].

As already mentioned previously, King *Cyrus II,* after his conquest of *Babylon*, had permitted the *Babylonian* Kingdom to continue as a special entity keeping to itself its traditional methods of administration and social institutions[17]and there was no immediate interruption in the normal functioning of the law and the economy, even land ownership rules and taxes remained as before. *Babylon* became the winter residence of the *Achaemenid Kings*, as one of the royal capitals like *Susa*, *Persepolis*, and *Ecbatana* and the most highly placed *Babylonian* officials retained their positions in the administrative apparatus. *Cyrus* even tried to reestablish normal conditions for the economic development of the country and for its traditional culture, and the priests were encouraged to revive their ancient cults, which had been somewhat neglected during the rule of the last *Chaldean King Nabonidus*. *Cyrus*, moreover, assumed the official title "*King of Babylon, King of the Lands*," a practice emulated by his successors until the early years *of Xerxes 1* reign.

Nevertheless, the enormous *satrapy* comprising almost all the territory of the former *Neo-Babylonian* was divided after 486 BC into two parts. The list of the *satrapies* of the *Achaemenid Empire* provided by *Herodotus* indicated that *Babylonia* and the rest of *Assyria* constituted the ninth *Satrapy*, whereas the lands "beyond the River", i.e. Syria constituted the fifth.

Important further changes in the status of *Babylonia* occurred during the reign of *Xerxes I,* who reigned from (486- 465BC). After the *Babylonians* revolted twice, in 484 and 482 BC, *Xerxes* punished the rebels severely and ordered a considerable part of *Babylon* destroyed. The *Babylonian* Kingdom, which until that time had been considered eminent and different from other *Satrapies*, at least in theory, was downgraded to an ordinary *Satrapy*. Subsequently, however, these reprisals did not diminish *Babylonia's* importance in the *Achaemenid Empire*. The province was geographically central; its population was large and concentrated, and it was still growing. Its economic structure was highly developed, and it was a source of immense wealth in crops, manufactured goods and cash. Even after *Xerxes'* punitive measures, *Babylon* and it's environ supported the residences of the *Persian* Kings, princes, and courtiers. The city held a royal treasury and archive; in classical accounts, it ranked with Susa as an imperial capital [18].

The most important practical result of the *Persian* conquest of Mesopotamia was that the supreme power in the country belonged to the *Persian King* and his *Satrap*. The administrative structure of the *Achaemenid Empire* most closely resembled that of the *Neo-Assyrians.* The *Persians* almost certainly borrowed some elements of that structure through the *Medes.* In the economic aspects, *Darius I* (550–486 BC) father of *Xerxes I* had already established a new system of state taxes. This system put special emphasis on agricultural yield and land ownership. Amounts of these taxes and exemption reflect the state of agrarian relations and land ownership in

Mesopotamia as well as other parts of the empire.

Before *Darius I*, under *Cyrus* and *Cambyses*, there was still no firmly regulated system of taxes based on an accounting of the economic potentials of the various regions of the *Persian Empire.* According to *Darius* reforms, all *Satrapies* were obliged to pay monetary state taxes in silver, the amount being determined on the basis of the area of cultivated land and its fertility as calculated in accordance with the mean perennial yield; for this purpose, the land was precisely measured and classified by crop. At the time when *Darius* introduced his reforms, the *Satrapy* of India came first in the amount of annual taxes paid to the treasury of the King. It consisted of 4680 talent of silver every year, when one talent was equivalent to 300 kilograms making more than 1460 tons, then came Mesopotamia (*Assyria and Babylonia*) with 300 tones, followed by Egypt 210 tones, *Kaleici* 110 tones, Syria and Palestine (beyond the River) 105 tons and the four small Asian *satrapies* 530 tons. The *Satrapy* of *Persia* was exempted from all taxes as a privilege of being the seat of the empire **[13], [16].**

All *Satrapies* were also required to pay a tribute in the kind of grain, cattle, sheep, beer, etc., which is difficult to establish in actual quantities from available documents. This was meant to support garrisons, royal and satrapy courts, and the state administration. Some documents mentioned that the *Satrapy* of Egypt had supplied grain enough for 120,000 persons, while, Media gave 100,000 sheep and Armenia gave 30,000 birds.

Documents preserved from *Babylon* showed cadastral field plans, which were usually depicted as rectangles or triangles and contained information on seed capacity, number of fruit trees, the kind of crop, the state of tillage of the land, legal status of the land and the buildings erected on the fields. However, the purpose of these plans has never been satisfactorily explained, but they may have been the basis for estimating the amounts of taxes and tributes, which were due or, could be also used for agricultural land transactions.

These documents belonged to the third year of *Darius I's* rule, which can be dated to the year 519 BC. Having in mind that the Empire's revenue was based in a great part on the agriculture of the Crown lands, and rents of irrigation canals, in addition to tribute from the people, it is important to have some insight of the irrigation systems and agriculture lands of *Babylonia* and their contributions to this revenue. Very important information on the irrigation network and agriculture was obtained from the ancient documents of *Murašû* **Archive**. This is a collection of cuneiform tablets that were excavated between 1888 and 1900 from the ruins of *Nippur* in central *Babylonia*.

Named after the chief member of a single family, the *Murašŭ Archive* was a collection of business records that had covered four generations. They are assembled during the reigns of the *Persian* Kings *Artaxerxes I*, *Darius II*, and *Artaxerxes II* and provided the most illuminating information on business activities and conditions of the *Persian*-rule of *Babylonia* during the last hundred and fifty years of the *Achaemenid* Kingship.

The *Murašŭ* family to whom the archive belonged had worked as one of the agents

to the crown during that period, which reminds us of the *Êigibi family* in the *Chaldeans* times. The archive gave us information on the agrarian relations and the agricultural outputs in *Babylonia* at that period.

It is a well-known fact that the wealth of *Babylonia* was based primarily on agriculture and that the limiting factor of *Babylonian* farming was water in which case the major elements of irrigation networks had become the property of the *Persian* Crown. It is also good to remember that during the *Neo-Babylonian* and *Achaemenid* times, irrigation systems in large parts of *Babylonia*, including the *Nippur* region, underwent changes in structure as interlocking grids as was seen done by *Nebuchadnezzar*, composed of parallel main canals joined to each other at frequent intervals by transverse secondary canals. This reticular arrangement improved access of agricultural land to fresh water and also enhanced drainage. They supported cultivation over increasing areas, and consequently, fostered expanding revenues for the state. The scale and regularity of the canal networks indicated government sponsored development **[19].** At the same time, the canals themselves as a prime economic factor became the object of commercial manipulations in which the agents, such as *Muraŝŭ* family played prime role as revealed from their archive. Great part of the canals and reservoirs belonged to the King, and were leased to agents like the *Muraŝŭ house*, who in their turn subleased whole canals, some stretches of canals or even leased water rights to different users. In their turn, these agents paid royalties to canal managers appointed by the crown. The canal managers, however, had to answer to senior royal officials. Moreover, those agents had a significant role in leasing agricultural lands and even agricultural equipment to their tenants. Under the *Neo- Babylonian* dynasty, final control over the management of crown interests rested with the King himself.

When *Babylonia* became a province of the *Persian Empire*, the new rulers delegated command over royal interests in the province to surrogates, presumably men with wide competence. Canal managers remained as the direct contacts with the agents and gave them receipts for the royalties received from them. The fact that many documents covering these dealings were found in the *Muraŝŭ archive* does not rule out the existence of other agents similar to the *Muraŝŭ House*. In many cases, the agents sold water to independent farmers directly either from canals or from reservoirs. Some documents described particular cases whereby users irrigated their land and paid back with a percentage of the crop watered, and this percentage varied depending on whether it was done by direct flow or by lift irrigation.

To summarize, canal managers were officials of the crown; they controlled the use of waterways and crown properties, agricultural equipment and even field workers; they leased the holdings, they were responsible to agents who had direct contacts with the cultivators. But, without the managers' own records, the range of their agents cannot be determined **[18]**. Apart from conducting business as mediatory agents for the supply of irrigation water, *Muraŝŭ House* dealt also with leasing agricultural lands and organized property transactions and ownership as other agents might have done.

Stolper in his book "*Entrepreneurs and Empire*" **[18]** observed from archaeological

evidence that in most areas of Mesopotamia the *Neo-Babylonian* and *Achaemenid* periods mark the beginning of "*a long phase of general growth, the resettlement and cultivation of long-abandoned territory*". He also remarked that in the fifth century BC, there was much cheap land, but water was costly, and that in *Achaemenid Babylonia* there appeared "*new installations, new techniques, and better utilization of the available water*". He concluded that the economic history of *Babylonia* in the second part of the fifth century BC is relatively well-known owing to the *Murašû House* archive, and the activities of the *Murašû House* and other similar agents were conditioned by the changes introduced by the *Persians* into property policies in *Babylonia*.

The categories of property included the Crown holdings, allotments to *Persian* noblemen, collective of soldiers, and to officials who were not farmers themselves and turned their land over to other persons to cultivate. Agents like *Murašû House rented* these allotments and paid rent to their owners as well as the appropriate state taxes to the treasury. However, this land was usually let to sub-lessees who supplied the seeds and animals. To judge from the *Murašû House* documents, the rents that *Murašû House* paid for land were very low of about one *kur* (ISO liters) of barley per kur (13,500 square meters) of land or less.

Land constituted the main source of royal taxes. The *Achaemenids* took part of land from the *Babylonian* population, kept some to the crown, and distributed the rest as large estates to members of the royal family, representatives of the *Persian* nobility and high officials. The total area of royal lands under the *Achaemenids* increased very much as compared with the preceding period. These lands were situated in the *Nippur* region (See figure 19, paper 3), as well as in the neighborhood of *Babylon*, *Sippar*, *Ur*, *Dilba*t, and other Mesopotamian cities. These and other lands belonging to members of the royal family usually were put out for leasing.

In a specific case a representative of the *Murašû firm* rented royal fields along the banks of several canals near *Nippur* for a term of three years. The *Murašû* house undertook to pay an annual rent of 220 *kur* (39,600 liters) of barley, 20 *kur* (3,600 liters) of wheat, 10 *ku*r (1,800 liters) of spelt which was one of the earliest forms of wheat used for livestock feed and as a grain for human consumption. One document showed that in 507 BC two tenants had paid nine *kur* (1,600 liters) of dates as annual rent for some land that was royal property.

This payment was made through the superintendent of the royal dates. The next year payment was made to the same superintended and consisted of thirty-six kur (6,480 liters) of dates. This land was located, in all probability, in a suburb of the city of *Isin*; the King also owned here many large canals, which his managers leased out for high prices. In the neighborhood of *Nippu*r, the royal canals were rented by the *Murašû house* who, in their turn, leased them to groups of small landowners. Thus, in 439 B.C. seven landowners in the *Nippur* area signed a contract with three lessees of various parts of the King's canal, among whom was the *Murašû House*. According to these contracts, the landowners could irrigate their fields during three days of each month from "*the water of the canal, the royal property*". They were to pay one-third of the harvest and dates in addition a certain sum of silver for each

unit area of land. Other types of land possessed by the King were those called the "*uzbarw of the King*".

The exact meaning of this very old Persian word is not known, but it could designate vineyards. It is understood that all categories of royal lands were exempt from taxes. The redistribution of land affected by the *Achaemenids* resulted also in the appearance of different types of land ownerships belonging to royal soldiers, artisans, etc. These ownerships were also allotted from state land. It seems that there was some difference between the royal land in the narrowest sense and state land. However, state land, at least nominally, was at the disposal of the King. In the period preceding the *Persian* conquest of *Babylonia*, the royal economy did not occupy a large share of the economy of the country. Though the *Achaemenid Kings* possessed a large amount of land in *Babylonia*, the royal economy did not play the leading role in the country. This role belonged to the private and temple households **[16].**

Finally, it may be said that the *Persian* administration in the *Achaeminds* period was not interested in the internal intellectual life of *Babylonia*. The achievements of *Babylonian* mathematical astronomy, whose most creative period began in the last quarter of the fifth century B.C, and the changes in *Babylonian* religious thought were due to the development of the native tradition. The *Persians* were only concerned with creating a stable state administration, establishing a new system for collecting royal taxes, and increasing the recruitment of troops. Significant changes did occur in the administrative system of the country, and many public institutions gradually fell under Iranian influence. Although *Babylonian* private law changed little, many Iranians became involved in local business life. Moreover, documents from *Babylon*, *Nippur* and some other Mesopotamian cities refer to judges of *Persian* origin.

Radical changes occurred also in the system of agrarian relations. Land taken from the indigenous population was distributed in large tracts as hereditary property to members of the royal family and to *Persian* nobility. Some land was in the direct possession of the King, and all these estates were exempt from taxes.

The system of military service also changed whereby the redistribution of land had created different types of ownerships belonging to royal soldiers and state's workmen. These ownerships were granted from the state land by the royal administration and carried an obligation of military service or state courtier's and administrative service. But in all this, irrigation canal networks, reservoirs and water rights remained the sole property of the King. No mention of maintenance works to these systems is available to us. Judging from the extent of wealth of *Babylonia*, which stemmed in great portion of it, from irrigated agriculture, it may be concluded that the canal managers most probably kept these systems in good order. They may have contracted the works to general contractors like the *Murašŭ House* in addition to the use of state resources of slaves and equipment. All this led us to think of the canal manager as similar to irrigation departments of the modern times.

As in the case of the *Chaldean Empire*, the *Achaemenid Empire* was distained to fall as the result from weakness of the last Kings and palace intrigues. King *Artaxerxes III* came to the throne by bloody means, ensuring his place upon the

throne by the assassination of eight of his half-brothers.

In 338 BC *Artaxerxes III* died in unclear circumstances, while at the same time Philip of *Macedon* united the Greeks and began to plan an invasion into the *Persian Empire*. *Artaxerxes III* was succeeded by *Artaxerxes IV Arses.* Before he could establish his power, Bagoas, a prominent official serving as the vizier (Chief Minister) of the *Achaemenid Empire,* poisoned him. Until his death in 336 BC., *Bagoas* is further said to have killed not only all *Arses'* children, but many of the other princes of the royal family. He then placed on the throne Darius *III* (336-330 BC), a nephew of *Artaxerxes IV* and previously the *Satrap* of Armenia, but later on Darius personally forced *Bagoas* to swallow poison. In 334 BC, when *Darius* was just succeeding in subduing Egypt *Alexander*, son of *Philip,* (*Alexander III of Macedon*) and his battle-hardened troops began their advance towards the east in *Asia Minor*.

In Asia Minor, Alexander defeated the *Persian* armies at *Granicus* (334 BC), then at *Issus* (333 BC) and lastly at *Gaugamela* (331 BC) and then he marched to *Susa* and *Persepolis,* in the heartland of the *Achaemenids Empire,* which surrendered to him in early 330 BC. From *Persepolis*, Alexander headed north to *Pasargadae,* which marked the final fall of *the Achaemenid Empire*.

As far as *Babylonia* was concerned, *Alexander* was welcomed into *Babylon*, the old capital of the ancient near east, on 22 October 331 BC when he was on his way to Susa. The longest description of this historic march is that of the Roman author *Quintus Curtius Rufus*[20]**,** who based his account on earlier Greek sources. Despite having succeeded to subjugate the whole of the *Persian Empire* under his rule, *Alexande*r, was nonetheless, unable to offer a stable alternative. After his early death, *Alexander's* the once massive *Persian Empire* was broken into few smaller empires ruled by his generals and their descendants. The most significant of which was the *Seleucid Empire*. Mesopotamia was distained to enter into a new phase of its history, but this is another story to be told.

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