

Nilometer Readings According to a 13th Century Coptic Source

by

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PART I

INTRODUCTORY REMARKS

The Nileflood, which is transformed into bread, has been regarded by the Egyptians from time immemorial with curiosity and awe, and as expectant mothers, in their time of waiting, always wonder whether their child will be a boy or a girl, the Egyptians, in the nine months of waiting, have questioned signs and oracles; priests and engineers have prayed and studied in hope that the flood will be high. Once the annual waters arrived, people could exactly measure the flood. Long before Herodotus, who travelled in Egypt in the 5th century B.C., men knew the figures and prayed for sixteen ells, that is, for a high flood, and that is the meaning of the sixteen children on the statue of the bearded Nile in the Vatican. Pliny expressed this with typical Roman terseness, "twelve ells mean hunger, thirteen sufficiency, fourteen joy, fifteen security and sixteen abundance". These measures seem to reach back into the time of the Old Kingdom. According to Abû'-Makarim, the Armenian historian who wrote in the 13th century, "Joseph was the first who measured the Nile in Egypt by the cubit, and made a Nilometer at Memphis". Strabo, writing in Caesar's time, found "nothing in Egypt so useful as the Nilometers, both for the farmers, to whom they show how much water they can count on ... and for the Government, which bases its taxes on them, since every increase in the volume of the river and the quantity of water means an increase of taxation". For the last 1395 lunar years, the history of the Nile lies before us in figures and dates, which in many ways are more reliable than those of European history. How the Arab writers of the 15th century determined the dates of the first seven centuries of the Islamic era they do not say, though the fact that their more or less independent lists tally proves them to be correct.

The Sources

The Coptic source, which provides information pertaining to the annual inundation of the Nile is part of the History of the Patriarchs of the Egyptian Church, represented by MS. Arabe 302, Bibliothèque Nationale, Paris, fols. 287v-355r and published by Drs. Antoine Khater and O. H. E. Khs-Burmester under the title *History of the Patriarchs of the Egyptian Church*, vol. IV, part i and ii, Cairo, 1974. The period covered in this text extends over twenty-six years, from the time of the death of the patriarch John VI in 1216 A.D. to the death of the patriarch Cyril III ibn Laqlaq in 1243 A.D. After the death of John VI, nineteen years elapsed before Ibn Laqlaq succeeded in having himself elected Patriarch of Alexandria. During these crucial years, many important events occurred in Egypt and in Palestine, which are described in great detail in the above mentioned manuscripts. In addition to the ecclesiastical events of this period, we find references to many historical events, the account of the war in Syria and Palestine undertaken by Andreas, King of Hungary, and his allies, a detailed description of the expedition of John of Brienne against Egypt, and the siege and the capture of Damietta. The expedition of the Emperor Frederick II and the concession to him of Jerusalem and other cities are described as well as the war with Kay-Kubad, Sultan of Rûm, and the war between al-Malik al-Kâmil and his brother as-Sâlih.

Regarding some unusual events of this period, references are made to a "fierce black wind with lightening", which happened in 1220 A.D. Twelve years later the waters of the Nile were so low that the boulders at the bottom of the river appeared and scraped the small boats which passed over them. In 1236 A.D. the pest appeared in Egypt and was particularly severe in Cairo and the suburbs. Towards the end of August 1239 A.D., it rained, a most exceptional thing that happened at this time of the year, and there was also an earthquake. At the end of September 1242 A.D. a violent wind threw down palm-trees and demolished many houses and on October 6th, there was an eclipse of the sun.

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For the sake of comparing the data of our Coptic text with those of other medieval sources, we have used the information provided by three Arab authors. Ibn Taghrî Birdî's statistics of the Nile for the period 641-1467 A.D., 20-871 A.H., are found in his chronicle *An-Nujûm az-Zâhira*. These statistics are generally restricted to the annual minimum and maximum levels of the river, though in some years additional data are given, such as the date

of the plenitude and of the opening of the Cairo or Abû Munajjâ canals. The statistics appear in the form of paragraphs, of uniform wording, following the biographies of important personages who died within the year¹. Ibn al-Hijâzî's statistics cover the period from 622-1470 A.D., 1-874 A.H., and are contained in an unpublished manuscript entitled *Naîl ar-Râ'id min an Nil az-Zâ'id* of the Bibliothèque Nationale, Paris, Arab. MS. 2261. His statistics were used by Prince Omar Toussoun as the basis for his tables². In the second part of his work Ibn al-Hijâzî provides the annual minimum and maximum levels in chronological order, with the dates of plenitude inserted almost regularly beginning with 1282 A.D., 682 A.H.³. The statistics of Abû Bakr ibn 'Abd Allâh ibn Aibak are contained in his two histories, *Durar at-Tijân* and *Kanz ad-Durar*. The statistical information prefaces the events of each year in the histories, which have not been published. The statistics were extracted from the material and printed in the form of tables by Amîn Sâmî Pâshâ in his introductory volume of *Taqwîm an Nil*. Ibn Aibak gives maxima and minima with only a few exceptions for the period of 622-1241 A.D., 1-638 A.H. He concluded his own compilation of continuous statistics with the year 638 A.H., probably because his source ended with that year. The maxima given by Ibn Aibak for the years 1234-1239 A.D., 631-638 A.H., vary significantly from the data of Ibn Taghrî Birdî and Ibn al-Hijâzî for the same period⁴.

While the statistics of the *History of the Patriarchs of the Egyptian Church* come sometimes close to the data of Ibn Aibak, it is nevertheless evident, that they are based upon an independent source.

Some Explanations Pertaining to Contemporary Concepts.

For a better understanding of the text of the *History of the Patriarchs of the Egyptian Church* it is necessary to provide a few explanatory comments with respect to the terminology employed in the accounts of the inundation of the Nile.

¹ Juynboll, T.G.J., *Abû l-Mahâsin Yûsuf ibn Taghrî Birdî. An-Nujûm as-Zâhira*. Vols. I & II, Leiden 1855, 1861. Cf. Popper, William, *The Cairo Nilometer. Studies in Ibn Taghrî Birdî's Chronicles of Egypt*. Berkeley and Los Angeles 1951, 92, 258, 259.

² Toussoun, Omar, "Mémoire sur l'histoire du Nil", in *Mémoires présentés à l'Institut d'Égypte*, VIII, IX, 1925.

³ Popper, W., *op. cit.*, 92.

⁴ Amin Sami Pasha, *Taqwîm an Nil*. Cairo 1916-1936, 17-22.

The Rauda Nilometer

All data pertaining to the minimum and maximum level of the Nile as mentioned in the *History of the Patriarchs of the Egyptian Church* are recorded at the Rauda Nilometer at Cairo. Two constructions on the site of the Nilometer at the southern end of the Island of Rauda are recorded, one in 715 A.D., the other in 861 A.D. Later, the Nilometer of 715 A.D. was known as the "old", that of 861 A.D. as the "new". In all probability, the two Nilometers were the same building, namely, a square well with a column in the middle. The first construction was carried out under the direction of Usâma ibn Zaid at-Tanûkhî, financial administrator of Egypt during the reign of the 'Umayyad Caliphs Walîd ibn 'Abd al-Malik (705-715 A.D., 86-96 A.H.) and Sulaimân (715-717 A.D., 96-99 A.H.). The year 861 A.D., 247 A.H., is the first date for which some definite and authentic details regarding the Nilometer at Rauda are available. According to one inscription the Nilometer was built — or rebuilt — under the supervision of a certain Ahmad ibn Muhammad al-Hasib, by order of the Caliph Mutawakkil⁵. At this time also, Mutawakkil ordered that the Copts should be removed from the function of measuring the Nile's rise and Abû' r-Raddâd was placed in charge, the office being made hereditary in his family⁶. Abû' l-Makarim citing the Coptic tradition states that Ibn Kâtib al-Farghânî superintended the construction of the Nilometer in 861 A.D., 247 A.H., and that his body reposes in the Church of St. Coluthus⁷, for he was beheaded on the 7th of Kihâk, 16th of December⁸. B. T. A. Evetts adds "that the date here given corresponds with that generally recorded by Arab historians for the completion of the Nilometer. Some repairs were carried out by Ahmad ibn Tûlûn twelve years later, but al-Maqrîzî, as-Suyûtî and al-Ishaqî agree that the Nilometer had been very little altered up to their own time, and there is no doubt that it remains substantially the same now. Edward W. Lane thinks it probable that both the Mosque of Ibn Tûlûn and the Nilometer were built by the same architect. It was known that the Mosque of Ibn Tûlûn was built by a Copt, and if Lane's theory is correct, we have his name in Ibn Kâtib al-Farghânî, the Coptic architect of the Nilometer"⁹.

During the period described in our manuscript, Sultan al-Malik as-Sâlih

⁵ Toussoun, O., *op. cit.*, 310ff.

⁶ Popper, W., *op. cit.*, 20.

⁷ Evetts, B. T. A., *The Churches and Monasteries of Egypt and some neighbouring Countries, attributed to Abû Sâlih the Armenian*. Oxford 1895, 114.

⁸ All Western dates (A.D.) of days and months are given according to the Gregorian Calendar.

⁹ Evetts, B. T. A., *loc. cit.*

Najm ad-Dîn (1239-1249 A.D.) began in February 1241 A.D. the construction of a fortress and a palace adjoining the Nilometer on the east. There is no reference to any changes in the Nilometer itself; apparently, however, the Nilometer became an annex to the palace, as it was also to the mosque in the west, and entrance to its super-structure was through a corridor on the west side of the fortress. In the *History of the Patriarchs of the Egyptian Church* following account is given. During the month of Safar in the year 639 A.H. (1241) the Sultan came to the Island, and he stayed at it, he and his attendants. And there was above the building of the Nilometer a chamber which was borne beyond it on columns, and it was he who made it, and it was not before, because there was not there anything except an upper court, and the chamber was within it. And this Sultan made this chamber, and it turned out a fine innovation, and of all what he — may God perpetuate his days — was wont to do or to suggest nothing could turn out in the world more successful than it, or finer or more balanced¹⁰. And as regards the pavillion which was constructed on the platform of the Nilometer which everyone approved of, it was demolished and there was built in its place a great tower at the head of the apex of the Nilometer. And as for the western side, all of it was completed as a belvedere for our Sire, the Sultan, gardens and reception rooms, from the church to the end of the building¹¹.

Of the numerous descriptions of the Nilometer we have selected five accounts as they are given by W. Popper.

Idrisi (About 1154): The Nilometer is on the east side of the southern, larger end of the island. A large deep basin is at the center, with a marble staircase; in the middle is a marble column with inscribed numbers indicating the cubits and fingers; the cubit equals 24 fingers. The waters enter the basin through a large canal. Above the column is a solid stone structure painted in gold and azure mingled with other colours.

Ibn Jubair (1183): The Nilometer is an octagonal column of white marble in a place in which the water is confined when it flows to it. It is divided into 22 cubits subdivided into 24 parts known as fingers.

Qazwîni (13th cent): Behind the mosque is a cistern, and in the middle of the cistern a column of white marble, 24 cubits long. A mark is written on each cubit, each cubit is divided into 24 fingers and each finger into six parts. The cistern has an outlet to the Nile into which the water enters.

Ibn Khallikân (1256): And the cubit in the Nilometer is 28 fingers until 12 cubits are reached and after that its evaluation becomes 24 fingers.

¹⁰ Khâter, Antoine, and O.H.E. Khs-Burmester, *History of the Patriarchs of the Egyptian Church*. Vol. IV, Part II (*HPEC* IV, ii), Cairo, 1974, 232.

¹¹ *HPEC*, IV, ii, 240/41.

Ibn Aibak (1333): The present Nilometer is the tenth built for the blessed Nile. And this Nilometer has a column in the center of a cistern divided into fingers apportioned by cubits, to the limit of 12 cubits divided into 28 fingers and from the limit of the 12 cubits to the end of the increase divided into 24 fingers, and the two cubits are equal¹².

The Guardian of the Nilometer

Although Johann Michael Wansleben mentions a Coptic tradition according to which the Guardian of the Nilometer Abû'r-Raddâd was a Coptic priest, who, as a reward for his conversion to Islam received the office of the guardianship for the Nilometer, there is no historical evidence to support this late medieval tradition¹³. There is no doubt that prior to the appointment of the first Muslim guardian Abû'r-Raddâd 'Abd Allah ibn 'Abd as-Salâm ibn 'Abd Allah ibn ar-Raddâd in 861 A.D., the Nilometer functions were performed by Copts. The position of the guardian belonged to the judiciary branch of government, and the first appointment in 861 A.D. was made by the Qadi Bakkâr ibn Qutaiba. He was responsible for the entire control of all matters connected with the Nilometer structure, including its upkeep and repair, the daily determination and announcement of the height of the Nile during the period of its rise and the performance of certain functions connected with the annual ceremony of the attainment of plenitude. The office was hereditary, and according to Ibn Khallikân, who wrote a short biography about 1270 A.D., the supervision of the Nilometer has continued among the descendants of Abû'r-Raddâd until the present. Abû'r-Raddâd, a name that later was applied to all guardians of the Nilometer, observed the height of the Nile on the 25th of Baûnah, 2nd of July, noting the corresponding day of the Arabic month, and sent a report thereof to the Bureau of the Secretariat, where it was entered into a special register. Thereafter the amount of the increase each day was noted, with the date of the Arabic month and the Coptic equivalent. During the Mameluke period the guardian measured the height of the Nile each afternoon, then on the following morning announced publicly the number of fingers' rise. On his way through the city to announce the daily rise of the Nile, the guardian — at least in the 13th century — carried a rod which apparently

¹² Popper, W., *op. cit.*, 45.

¹³ Vansleb, J.M., *Nouvelle Relation en forme de Journal d'un voyage fait en Égypte*. Paris, 1698, 67.

had served in some way to measure the rise in the Nilometer, a kind of "portable measure"¹⁴.

The Minimum Level

The minimum level of the Nile used to be recorded annually on or about the 25th or 26th of Baûnah, 2nd or 3rd of July. Whereas our text mentions altogether twenty-four maximum level readings, only six minimum level data are given, and of these four confirm the established date of the reading on the 25th of Baûnah, namely the Nile-years 1230/31 A.D., 947/48 A.M., 1233/34 A.D., 950/51 A.M., 1241/42 A.D., 958/59 A.M. and 1242/43 A.D., 959/60 A.M. Once, during the Nile-year 1228/29 A.D., 945/46 A.M. the minimum level of 5 cubits was recorded on the 25th of Abîb, 1st of August. Maqrîzî mentions for the year 1280 A.D., 679 A.H., that the Nile minimum was also on the 25th of Abîb¹⁵. In the Nile-year 1229/30 A.D., 946/47 A.M. the minimum level of 4 cubits was recorded on the 10th of Misrâ, 16th of August.

While the earliest historical mention of the 25th of Baûnah for the first reading dates from the 10th or 11th century A.D., it is then mentioned as a long-established custom; and from certain traditions it may be inferred that the custom existed even before the Islamic conquest. After the 12th century, the date of the 25th of Baûnah as that of the first official minimum reading is mentioned regularly and frequently.

There is good reason to assume that the custom of reading the Nile level on the 25th of Baûnah was an old Coptic custom, which the Muslims accepted when they replaced the Copts as guardians of the Nilometer. In fact, the 25th or 26th of Baûnah appears in an Egyptian papyrus of 6 B.C. as the conventional beginning of the rise of the Nile, the end of the preceding harvest year, and the end of the preceding tax-year. Also a later Coptic tradition has preserved this date. It speaks of a pillar in the Upper Egyptian town of Coptos (Qift), which was marked to measure the height of the Nile on the 26th of Baûnah. The final height of the Nile each year could be foretold from the measure indicated by the sun's rays as they fell on the pillar. And "the 26th of Baûnah is also the day on which the sun stood still for Joshua the son of Nun, by God's permission, until he had vanquished the unbelieving Gentiles and giants in battle, through the changing of the

¹⁴ Popper, W., *op. cit.*, 58, 59.

¹⁵ Quoted by Popper, *op. cit.*, 64, who maintains that Maqrîzî made an error by confusing the month of Abîb with the month of Baûnah.

sun into various colours and the double halo which appeared round it"¹⁶. This tradition had its ultimate origin probably in some period when the beginning of the rise of the Nile was believed to coincide with the summer solstice, and the date of the summer solstice was held to be on the 26th of Baûnah.

Although the date of the 25th or 26th of Baûnah was the date fixed by Coptic tradition for reading the height of the Nile at Cairo, other Coptic dates for this event are also recorded. One of these dates was the 12th of Baûnah, which was celebrated as St. Michael Day. This day was also referred to as the day of "weighing the mud", a portion of which, having been wetted with Nile water the night before and weighed, was weighed again in the morning, and in proportion to the increase in weight the ultimate increase in the height of the Nile that year was prognosticated. This same night was known also as the "Night of the Drop", because a drop was then supposed to fall from Heaven into the Nile and cause its rise¹⁷.

The 12th of Baûnah appears also in an Arabic tradition that at the conquest of Egypt in 641 A.D., 20 A.H., the Copts used to propitiate the Nile on that date by throwing a young girl, adorned with jewels and beautifully clothed, into the river. When 'Amr ibn al-'As, the conqueror of Egypt, was informed of this barbarous custom, it is said, that he abolished it. And the Nile, in consequence, did not rise in the least degree during the space of three months after the usual period of the commencement of the increase. The people, thereupon, were greatly alarmed, thinking that a famine would certainly ensue. 'Amr, therefore, wrote to the Caliph, to inform him of what he had done, and of the calamity with which the Egyptians were threatened. 'Umar returned a brief reply, expressing his approbation of 'Amr's conduct, and desiring him, upon the receipt of the letter, to throw a note, which it enclosed, into the Nile. The purport of this note was as follows: "From 'Abd Allah 'Umar, Prince of the Faithful, to the Nile of Egypt. If thou flow of thine own accord, flow not. But if it be God, the One, the Mighty, who causeth thee to flow, we implore God to make thee flow". 'Amr did what was commanded, and the Nile rose to 16 cubits in the following night¹⁸.

The fact that both Christians and Muslims continued to offer sacrifices to the Nile is well attested. In the biography of Michael V Ibn Dinistirî, the 71st Patriarch of Alexandria (1145-1146 A.D.), it is recorded that while Gabriel II, the 70th Patriarch of Alexandria (1131-1145 A.D.) sat

¹⁶ Evetts, B.T.A., *op. cit.*, 281.

¹⁷ Lane, Edward William, *The Manners and Customs of the Modern Egyptians*. London 1908, 263.

¹⁸ Lane, E.W., *op. cit.*, 500.

on the throne of St. Mark, the patriarch "forbade them to resort to the taking out of the body of Saint Abû Yihnis Sanhût¹⁹ from his church, because it was the custom for them to cast his body into the river, by reason of the impurities of the Egyptians. And when the priests did not resort to cast his body into the river, it dried up in front of the church. And when this bishop returned, he ordered them to cast the saint into the river, and the river returned and rose until it overflowed in front of his church, and the Egyptians bore to him many ex-voto offerings²⁰. Because of the disorders attending this celebration it was abolished by the authorities in 1302 A.D., 702 A.H., revived again in 1337 A.D., 738 A.H., and in 1354 A.D., 755 A.H. and finally abolished when the church at Shubrâ was destroyed and the relics burned²¹. When in the year 1520 A.D., 926 A.H., the rise of the Nile was delayed, even the relics of the Prophet Muhammad were brought there and washed in its waters²².

As late as the 19th century, offerings to the Nile were made by the Copts. *The History of the Patriarchs of the Egyptian Church* records that during the office of Peter VII, 109th Patriarch of Alexandria (1809-1852), the Nile did not come up in a certain year to its measure and the people were afraid of a calamity of dearth, and they sought aid from the Pasha, entreating him that he should command the spiritual chiefs, that they should raise supplications and prayers on account of the Nile, so that God might bless its waters and irrigate the land, and he did. And the Muslims assembled first for the prayer, then the Jews, then the Greeks, then the Syrians, then the Franks, but the river did not change from its place. Then the Government asked the father Peter that he should do according to what the rest did. And he went with a company of bishops to the bank of the river and he celebrated the Offering of the Mystery of the Eucharist. Then he finished this and he washed the vessels of the Service, and he cast their water with an antidoron²³ into the river. And its waves were immediately agitated, and they were troubled, and they boiled up as a cauldron boils, and they overflowed. And the disciples of the patriarch hastened to take away the vessels of the Celebration, and scarcely had they finished this, when the water overtook them²⁴.

¹⁹ St. John of Sanhût is commemorated in the Coptic Synaxarium on the 8th of Bashons, 16th of May.

²⁰ Khater, Antoine and O.H.E. Khs-Burmester, *History of the Patriarchs of the Egyptian Church*. Vol. III, Part I, (= *HPEC* III, i), Cairo, 1968, 64.

²¹ Lane-Poole, Stanley, *A History of Egypt in the Middle Ages*. London 1901, 301.

²² Popper, W., *op. cit.*, 73.

²³ The blessed eucharistic loaves, which the priest distributes at the end of the Divine Liturgy.

²⁴ *HPEC*, III, iii, 305.

Plenitude

Our manuscript of the *History of the Patriarchs of the Egyptian Church* records for the period between 1215/16 A.D., 932/933 A.M. and 1242/43 A.D., 959/60 A.M. altogether eleven dates for the Nile plenitude or as our author calls it "the reading of its (the Nile) measure". The concept of "plenitude" or "full measure" occurs again and again in the accounts of the Nile readings. Plenitude is the Nile level of 16 cubits at Cairo. Originally it used to be the level most favourable for the irrigation of Egypt, and it was close to the normal maximum. Sixteen cubits were mentioned by Herodotus as necessary for the spread of the waters over the land in the 5th century B.C. A tradition ascribed to the time of the Arab Conquest of Egypt in 641 A.D. mentions 16 cubits as the most favourable level. The level of 16 cubits became also, probably in the 11th century A.D., the signal for opening the irrigation canal at Cairo, and it marked approximately the end of one tax year and the beginning of the next year.

Preparations for the celebration of the plenitude ceremony were begun as soon as the Nile at Cairo had risen above 15 cubits. In the 13th century an attempt was made to forecast the approximate date of plenitude at Cairo by noting the height of the Nile in Upper Egypt. A special messenger, known as the *mufrad*, used to travel from Aswân to Cairo within four or five days in order to announce the level of the river at Aswân²⁵. Thus, for example, our manuscript mentions that on Wednesday, the 26th of Misrâ, 1st of September, 942 A.M., which corresponds to the 23rd of Shabân 623 A.H., there arrived a solitary from Upper Egypt and he announced that the Nile would come to its measure ...²⁶, and the Nile was at that time in Cairo at one finger above 16 cubits²⁷.

Established protocol demanded the presence of the Sultan at the occasion of the Cairo plenitude ceremony, and one of the principal features of this ceremony was the perfuming of the Nilometer column. The Sultan mixed with his own hand saffron and musk in a cup which he then handed to the guardian of the Nilometer. The latter then threw himself, fully clothed, from the steps on the wall of the well into the water, swam the few feet to the column with his right, while readers at the top of the well recited verses from the Koran²⁸.

It is noteworthy that our text of the *History of the Patriarchs of the Egyptian Church* systematically records the whereabouts of the Sultan immediately

²⁵ Popper, W., *op. cit.*, 70, 71.

²⁶ There is a lacuna in the text.

²⁷ *HPEC*, IV, i, 97.

²⁸ Popper, W., *loc. cit.*

following the data of either the plenitude or the maximum level, so as to provide a reasonable apology for the Sultan, if his presence was impossible. In the year 1216/17 A.D., 933 A.M., the Sultan passed the time in the Citadel, where he was treated by al-Hakîm Abu Šâkir on account of sickness²⁹. In 1218/19 A.D., 935 A.M., the news of the death of al-Malik al-ʿAdil Abû Bakr Muhammad ibn Aîyûb arrived, moreover the enemy descended upon the land³⁰. It is not within the frame of this essay to list all the references to the affairs of the Sultan each year; but the reading of the text shows clearly that the author of the manuscript followed a precise outline for the description of events.

The Opening of the Cairo Canal

The cutting of the dam or the opening of the Canal is mentioned altogether eight times in the text of our manuscript. An earthen dam was constructed annually across the Cairo Canal near its mouth to prevent the waters of the Nile from entering before they rose to the desired level. That level was at first not fixed, but by the 12th century A.D. it became customary to cut the dam only after plenitude. The exact date of the opening still depended upon official action, and though there was great reluctance to depart from the established custom, in exceptional circumstances the dam was ordered cut even before plenitude. The cutting of the dam was an occasion of ceremony even more elaborate than that of the Nilometer. The ceremony at the mouth of the Canal was apparently instituted in August 973 A.D., Dhû'l-Qa'da 362 A.H., when the Nile had reached 16 cubits. This was the year in which the Fatimid Caliph Mu'izz came to Egypt, four years after the foundation of Cairo.

The ceremony of the cutting of the dam of the Canal replaced a Coptic ceremony which used to be celebrated at Heliopolis-ʿAin Shams on the Feast of the Invention of the Holy Cross on the 17th of Tût, 27th of September, as late as the 10th century A.D. Mas'ûdî, who was in Egypt in September 941 A.D., mentions the Feast of the Cross as the date for the opening of the canals³¹. In fact, there was no sense of unanimity about the date for the cutting of the dam. Salah ad-Dîn opened the dam in 1161 A.D., 577 A.H., six days after the Nilometer ceremony, while according to Ibn Duqmaq the Mameluke officials cut the dam generally on the day after the Nilometer ceremony.

²⁹ *HPEC*, IV, i, 21.

³⁰ *HPEC*, IV, i, 50.

³¹ Popper, W., *loc. cit.*

In the year 934 A.M. (1217/18 A.D.), the Canal was opened on the 6th of Tût, 16th of September, when the water had reached 4 fingers above 17 cubits³². Two years later, the Canal of Cairo was opened on Thursday, the 14th of Tût, 24th of September, and the Canal dried up on the Thursday which followed it, and the people walked in the middle of it. The Bahr Abû 'l-Managgâ was opened on the Sunday, which was the Feast of the Holy Cross³³. In the year 942 A.M. (1225/26 A.D.) the Nile did not come up fully and did not reach the tax-level, and on the eve of Wednesday, the 6th of Tût, 16th of September, the dam of the Canal was cut before the time secretly, and no one knew about it³⁴. The following year, the Canal of Cairo was opened "according to the custom on Thursday, the 6th of Tût, 16th of September", and as for the New Canal from al-Maks, it had been opened before³⁵. In 946 A.M. (1229/30 A.D.) the dam of the Canal was cut when the Nile had come up to 16 cubits on the 1st of Tût, 10th of September, and it is especially mentioned that "it was a great day"³⁶. And in the following year the dam of the Canal was cut, without the river being full, on Wednesday, the 7th of Tût, 17th of September, and the Canal remained up to two days before it reached the Bâb al-Kharq ... and no one drank in this year from the Canal, and no water-carrier drew water from it, and no ferry boat was required on it, because it could be waded³⁷. In 949 A.M. (1232/33 A.D.) the Canal was opened already on the 20th of Misrâ, 26th of August, because "there had not been seen a Nile more marvellous than this"³⁸. Also in the year 954 A.M. (1237/38 A.D.) the Canal was opened early, and on Saturday, the 6th of Nasî, 11th of September, the ceremony took place³⁹.

These few dates demonstrate the irregularity of dates for the opening of the Canal during those years recorded. At the same time, the customary date in the first half of the 13th century A.D. was the 6th of Tût, 16th of September.

The Maximum Level

The maximum level is the extreme recorded height reached by the Nile in any year, irrespective of date. After reaching the maximum, the level

³² *HPEC*, IV, i, 49.

³³ *HPEC*, IV, i, 64.

³⁴ *HPEC*, IV, i, 87.

³⁵ *HPEC*, IV, i, 98.

³⁶ *HPEC*, IV, i, 112.

³⁷ *HPEC*, IV, i, 116.

³⁸ *HPEC*, IV, i, 128.

³⁹ *HPEC*, IV, ii, 174.

generally remained without change or with a fluctuation of very few fingers, for about twelve days, and then began to fall steadily. The maximum level for the twenty-eight years recorded in our text varied between 14 cubits and 23 fingers and 19 cubits and 11 fingers.

The Measurements

Measurements of the Nile levels in Arabic sources are expressed in terms of the cubit and its subdivisions, fingers. For the period of our text, in the 13th century, the first twelve cubits of the Nilometer at Rauda had 28 fingers per cubit, the size of the cubit being 0.539 m and the size of the finger being 0.0192 m. From the 13th to the 21st cubit, 24 fingers belonged to each cubit, each cubit measuring 0.462 m, the size of the finger being the same. This composite scale at the Rauda Nilometer is well attested by many medieval Arabic sources.

A possible reason for this scale is offered by W. Popper, when he writes : "There was also an Arabic cubit said to contain 27 fingers and called the 'black cubit' ". The size of the black cubit is, however, a matter of dispute, and since its introduction is ascribed to the Abbasid Caliph Ma'mûn, 813-833 A.D., 178-218 A.H., it could not have been known at the time of the conquest of Egypt. At all events, the cubit of 27 fingers in length which the Arabs found in use when they entered Egypt was not exactly divisible into the subunit, the first of four fingers, six or seven of which made the cubit of 24 and 28 fingers respectively. The traditional important level awaited was 16 cubits; 16 cubits each of 27 fingers equal 432 fingers; similarly 12 cubits of 28 fingers plus 4 cubits of 24 fingers equal 432 fingers; and it is quite possible that by making the latter combination the traditional actual height of 16 cubits was preserved and made to conform to the known Arabic system of measurement"⁴⁰.

The Dates

For the author of our text, the year commences with the 1st of Tût, the 11th of September, this being Naurûz or New Year's Day for the Copts. The Coptic year consists of twelve months of thirty days each, there is added a period, called Nasî, of five days in three successive years, or six days in the fourth year.

⁴⁰ Popper, W., *op. cit.*, 112.

The Islamic year, Anno Hijra, is a lunar year and rotates through all months of the solar year once in each cycle of about thirty-three of its years.

The Nile Year normally extended from the first official report of the spring level of the river, which was taken on or around the 25th of Baûnah, the 2nd of July, and extended to September or October, the date of the last report of the season. In some cases, however, the Nile year was described also from one 25th of Baûnah to the next.

PART II

THE RECORDS OF THE HISTORY OF THE PATRIARCHS

1215/16 A.D., 932 A.M., 611/13 A.H.

And the Nile reached in this year up to ...⁴¹ Then there entered the season of the autumn, and all the people fell sick, and it was a severe season⁴². According to Ibn Taghrî Birdî the maximum level was 23 fingers above 16 cubits, Ibn al-Hijâzî's and Aibak's statistics give 10 fingers above 17 cubits for the year 613 A.H.⁴³.

1216/17 A.D., 933 A.M., 612/14 A.H.

And there entered the year 933 A.M., and the prices in Cairo went up to 35 dînârs for a hundred ardabs of wheat, then they went down to 27 dînârs. And the water of the Nile reached to 22 fingers above 17 cubits, then it decreased. And the price of corn went up until wheat reached 50 dînârs the hundred ardabs, then it went down to 25 dînârs⁴⁴.

1217/18 A.D., 934 A.M., 613/15 A.H.

And the rise of the Nile was delayed in this year up to the 6th of Tût, 16th of September, and the Nilometer rose spontaneously, and the Canal

⁴¹ There is a lacuna in the text.

⁴² *HPEC*, IV, i, 21.

⁴³ Popper, W., *op. cit.*, 136.

⁴⁴ *HPEC*, IV, i, 38.

was cut on it (namely on the 6th of Tût), and it was announced that the water had reached in a second 4 fingers above 17 cubits⁴⁵.

1218/19 A.D., 935 A.M., 614/16 A.H.

And the year 935 A.M. entered, and the Nile reached in this year up to 7 fingers above 17 cubits, and it decreased rapidly, and the majority of the Land of Egypt was dried up, and the price of corn went up⁴⁶. And the water of the Nile delayed in rising in this year, so that it came at the end of the month of Abîb, 8th of July - 6th of August, and it was about 6 cubits, and the price of wheat increased until it reached 60 dînârs for the hundred ardabs. Then it was that the Nile remained stationary, and the price fluctuated⁴⁷.

1219/1220 A.D., 936 A.M., 615/17 A.H.

And there entered the year 936 A.M. and the Nile was low — on the 1st of Tût, 11th of September — and the maximum which it reached was 15 cubits, and it did not remain stationary at 15 cubits, but it decreased and continued its decrease. And the Cairo Canal was opened on Thursday, the 14th of Tût, 24th of September, and the Canal dried up on the Thursday which followed, and the people walked in the middle of the Canal. And the Bahr Abu'l-Managgâ was opened on the Sunday, which was the Feast of the Holy Cross, the 17th of Tût, 27th of September, and at that time the water decreased a whole cubit, and it was of no use, and it did not carry water into the Birkit al-Habash⁴⁸, except streamlets⁴⁹.

1220/21 A.D., 937 A.M., 616/18 A.H.

And the year 937 A.M. entered, and the Nile reached in this blessed year to 2 fingers above 17 cubits, and the prices remained as before, increasing

⁴⁵ *HPEC*, IV, i, 49.

⁴⁶ *HPEC*, IV, i, 50.

⁴⁷ *HPEC*, IV, i, 62-63.

⁴⁸ Fustât or Old Cairo was separated from Cairo by a space of nearly a mile, covered with gardens and flooded by the Nile at the time of the inundation, so that in the summer it appeared like a sea. This was the well-loved "Lake of the Abyssinians" or Birket al-Habash, with its surrounding gardens, a favourite resort of Cairenes. Stanley Lane-Poole, *op. cit.*, 140.

⁴⁹ *HPEC*, IV, i, 64.

and decreasing. Very excellent wheat for 150 *dînârs* the hundred *ardabs* and barley and beans for 100 *dînârs* for a hundred *ardabs*⁵⁰. And when they planted, God sent at the end of the months of Bâbah (October 11th - November 9th) and Hâtûr (November 10th - December 9th) locusts, the like of which with regard to abundance and greatness had never been seen in the lands of Egypt. And they devoured most of what had been planted, and they went up especially to the places which were around the two cities, namely Cairo (al-Kahirah) and Cairo (Misr), and the Fayyûm. Then prices fluctuated in the month of Tûbah (January 9th - February 7th) and wheat reached 100 dirhams the *ardab* and barley and beans 60 dirhams the *ardab*⁵¹.

1221/22 A.D., 938 A.M., 617/19 A.H.

The siege of Damietta in the summer months of 1221 so preoccupied the inhabitants of Cairo, that for "the days of the rise of the Nile no one paid any attention to it nor went up to it"⁵². And the Nile reached in this year up to ...⁵³.

1222/23 A.D., 939 A.M., 618/20 A.H.

And the year 939 A.M. entered and the Nile rose in this year to 7 fingers above 18 cubits, and prices became cheap and the land was prosperous⁵⁴. And for the night of the measuring of the Nilometer, they added to the combustibles of the two banks (of the Nile) the fuel of rafts of wood, and they had found them in the river, and the fuel of boats and the fire-ships with their furnishings in the middle of the river. And all the days of it were feasts. And prices became cheap to an extreme so that wheat was sold at 30 *dînârs* the hundred *ardabs*, and barley and beans at 20 *dînârs* the hundred *ardabs* ... and this was a thing of wonder, because the Nile was not high⁵⁵.

⁵⁰ *HPEC*, IV, i, 71.

⁵¹ *HPEC*, IV, i, 72.

⁵² *HPEC*, IV, i, 75.

⁵³ *HPEC*, IV, i, 79. There is a lacuna in the text.

⁵⁴ *HPEC*, IV, i, 81.

⁵⁵ *HPEC*, IV, i, 82.

1223/24 A.D., 940 A.M., 620/21 A.H.

And there entered the year 940 A.M. and the Nile in this year reached up to 12 fingers above 17 cubits, and prices decreased, and things were many and available. And the exchange reached 43 dirhams for a *dînâr*⁵⁶. And prices remained as they were throughout the year, and things increased in cheapness, and the Nile reached in this year to 4 fingers above 18 cubits⁵⁷.

1224/25 A.D., 941 A.M., 621/622 A.H.

We assume that the maximum level of 4 fingers above 18 cubits mentioned above occurred just before the 1st of Tût, 11th of September, of the year 940 A.M., since there are no other data given for the year 941 A.M.

1225/26 A.D., 942 A.M., 622/23 A.H.

Then there entered the year 942 A.M. in the month of Sha'bân 622 A.H. and the Nile did not come up fully and did not reach the tax-level, and prices fluctuated. And on the eve of Wednesday, the 6th of Tût, 16th of September, the Canal was cut before the time secretly, and no one knew about it, and the price of corn soared, and the people sought for it ... Then the Nile reached the tax-level on the mentioned day, and the people were quietened, and they hoped that the water would increase, but the condition continued thus. And the water decreased, and corn was in this year in great quantity, and the highest price of first class wheat was fixed at 20 dirhams the *ardab* and barley at 13 dirhams and beans at 14 dirhams. And the extreme limit to which the Nile reached this year was 16 fingers above 16 cubits, and the Nilometer was not completed in this year, and it was not proclaimed. And the exchange reached to $44\frac{1}{2}$ dirhams for the *dînâr*, and later 50 dirhams for the *dînâr*. Then the water of the Nile came up to what was mentioned before, namely 16 fingers above 16 cubits, and it was not completed, and it decreased to 13 cubits. Then it increased at the end of the month of Bâbah (October 11 - November 9) until it reached some fingers above 15 cubits. Then it decreased until it reached to 13 cubits. Then it returned to increase, until it reached what it had been at first, and it inundated all what the people had sown⁵⁸. From the

⁵⁶ *HPEC*, IV, i, 83.

⁵⁷ *HPEC*, IV, i, 85.

⁵⁸ *HPEC*, IV, i, 88, 89.

16th of Abîb, 23rd of July, to the 20th of Abîb, 27th of July, the Nile decreased to the extent of 10 fingers. Then the decrease was regained, and it increased to the normal increase⁵⁹.

And on the 26th of Misrâ, 1st of September, which corresponds to the 23rd of Sha'bân 623 A.H., there arrived a solitary from Upper Egypt and he announced that the Nile would come to its measure on ...⁶⁰ and the Nile was at that time in Cairo at 1 finger above 16 cubits, and it increased on the 27th of Misrâ, 2nd of September, by three fingers, and on the 28th of Misrâ it increased by 3 fingers, and on the 29th of Misrâ it increased by one finger, and it stayed by 8 fingers above 16 cubits. Then it stopped at the end of the month of Misrâ and the beginning of the month of Nasî (between the 5th and 6th of September). And the prices were cheap, and things were available⁶¹.

1226/27 A.D., 943 A.M., 623/25 A.H.

Then the year 943 A.M. entered, and the water of the Nile did not fluctuate. Then it increased and the canal of al-Mangâ was cut on Tuesday, the 4th of Tût, 14th of September, and the measure reached its normal on Wednesday, the 5th of Tût, 15th of September, and the canal of Cairo was opened according to the custom of Thursday, the 6th of Tût, 16th of September. And the increase of the Nile continued up to the 14th of Bâbab, 24th of October, and it reached 12 fingers above 18 cubits. And it was among the wonders of the world, because it was not related that a Nile had stopped at such a stopping, and had come to such a coming up; and then had decreased to such a decrease slowly from 2 fingers and from 3 fingers, and all things became cheap⁶². And wheat was sold for $4\frac{1}{2}$ dirhams the ardab and the barley for 3 dirhams the ardab. And the exchange of gold declined until it reached $41\frac{1}{2}$ dirhams for a dînâr. — And the time of the blessed Nile came, and the flood water stopped at first, then it flowed swiftly, then it stopped for some days in the month of Misrâ (August 7th - September 5th), and it increased one or two fingers⁶³.

⁵⁹ *HPEC*, IV, i, 94.

⁶⁰ There is a lacuna in the text.

⁶¹ *HPEC*, IV, i, 97.

⁶² *HPEC*, IV, i, 98.

⁶³ *HPEC*, IV, i, 101.

1227/28 A.D., 944 A.M., 624/26 A.H.

Then there entered the year 944 A.M., and the water had not reached its plenitude. Then its increase continued, and it reached its plenitude on Thursday, the 4th of Tût, 14th of September, and it increased until it reached 10 fingers above 17 cubits on the 18th of Tût, 28th of September, and it decreased from the 19th of Tût (29th of September), considerably, and the fields came forth, and the prices fluctuated somewhat, then they decreased to their limit⁶⁴.

1228/29 A.D., 945 A.M., 625/27 A.H.

And there entered the year 945 A.M., and the Nile reached in this year to 20 fingers above 17 cubits. And the prices were slack in this year. And corn reached 50 dinârs for one hundred ardabs and barley like it, then it decreased and the wheat became 18 dirhams the ardab and the barley 13 dirhams⁶⁵. And the Nile stopped rising in this year considerably at its beginning, so that on the 25th of Abîb, 1st of August, it was at 5 cubits. Then it flowed very much from the 26th of Abîb. Then the Nile rose considerably from the 26th of Abîb, so that it used to increase daily 20 fingers or about that. And the prices decreased and the people were assured, and the river reached the measure in the daytime of Tuesday, the 21st of Misrâ, 27th of August, and cheapness increased. And the Nile at Cairo stopped, and it decreased a few fingers, after it had reached the tax-level, and the people distrusted it⁶⁶.

1229/30 A.D., 946 A.M., 626/28 A.H.

Then the year 946 A.M. entered, and the Nile came up to 16 cubits at the beginning of the month of Tût, and it reached its measure a second time in the daytime of Thursday. And the Canal was cut on the mentioned day, and it was a great day; and the prices were lowered and they decreased, and good things and provisions were plentiful⁶⁷. And the Nile stopped

⁶⁴ *HPEC*, IV, i, 102.

⁶⁵ *HPEC*, IV, i, 106-109.

⁶⁶ *HPEC*, IV, i, 111-112.

⁶⁷ *HPEC*, IV, i, 112-113.

up to the end of the month of Abîb, and the price of corn fluctuated until it reached 20 dirhams the ardab of wheat, and of barley, $10\frac{1}{2}$ dirhams the ardab, and the people were alarmed at this. Then the Nile stopped until the 10th of Misrâ, 16th of August, and it was at 4 cubits. And wheat was sought for, and 26 or 27 dirhams the ardab was paid for it. Then it was cried, and it was priced at 20 dirhams the ardab, and the barley at 12 dirhams the ardab, and likewise the beans. Then God the Exalted was gracious, and He gave the Nile a great, uninterrupted drive from the 11th of Misrâ, 17th of August, up to the 20th of Misrâ; and it increased in ten days 7 cubits, and the two rivers, the two branches of the Nile formed by the Island of Rauda, were joined on Wednesday, the 21st of Misrâ, 27th of August, and the Nile rose after this until the 25th of Misrâ, 31st of August, and it used to increase every day half a cubit. Then its increase decreased till Sunday, the 2nd of Nasî, 7th of September, and the Nile stopped, and it had reached some fingers above 14 cubits⁶⁸.

1230/31 A.D., 947 A.M., 627/29 A.H.

And there entered the year 947 A.M., and the Nile had stopped, and the people were distressed at that, and wheat was priced at 20 dirhams the ardab, and it was not sold. And the Canal was cut, without the river being full, on Wednesday the 7th of Tût, 17th of September, and the water reached up to 23 fingers above 14 cubits, and it decreased from the 17th of Tût, 27th of September, which was the Feast of the Cross⁶⁹.

And there came in the mentioned month of Tût a heat, the like of which had not been seen. Then the Nile recovered some of the deficiency on the 24th of Tût, 4th of October, up to its end, some fingers which were of no avail for it, and the prices rose. And the Sultan ordered a price-control and that the wheat should not be sold, except at 20 dirhams the ardab, and he allotted to every granary a limited amount for the sake of the millers ... And the possessors of the wheat would not accept to sell anything at this price, except under constraint. And the Sultan ordered to set free the price, and on the day of its setting free the wheat was sold for 60 dirhams the ardab ... And the prices fluctuated, and the 25th of Baûnah, 2nd of July, came in which the conditions of the Nile are forecast, and at the bottom there was one and three-quarter cubits, and it was little, the like of which had not been related, and the water stopped all the month of

⁶⁸ *HPEC*, IV, i, 114-115.

⁶⁹ *HPEC*, IV, i, 116.

Abîb, July 8th - August 6th. Then it increased in the month of Misrâ, and it came to 15 cubits, then it stopped during the month of Nasî, and the people despaired of it⁷⁰.

1231/32 A.D., 948 A.M., 628/30 A.H.

Then there entered the year 948 A.M. and the two canals of al-Mangâ were cut for fear of the decrease of water and likewise all the large canals. And God permitted the Nile's increase, and it increased in the month of Tût, a thing which had not been known at all. And the Nile came up to its measure on the 9th of Tût, 19th of September, and its increase was completed at ten fingers above 17 cubits⁷¹. And the blessed Nile fulfilled its promise on the 2nd of Nasî, 7th of September, after it had stopped for many days, for the flood-water had reached it on the 16th of Misrâ, 22nd of August, and the completion was delayed after it up to this date. And money multiplied very much, and it cheapened until the dînâr reached to 90 silver dirhams, and the silver dirham to 7 dirhams, and the people suffered from this⁷².

1232/33 A.D., 949 A.M., 629/31 A.H.

Then the year 949 A.M. entered, and the Nile came up until it reached 18 cubits, and its increase extended to the 7th of Bâbah, 17th of October, and it increased in this month, the like of its increase had not been witnessed. And this was that it increased on the 2nd and the 3rd and the 5th of it two fingers, two fingers every day, and it was the cubit of the eighteenth on the 6th, and the 7th of it was the last of its increase, every day three fingers. And the prices became cheap, and the wheat was sold at 20 dirhams the ardab of silver money, and the barley at 10 dirhams the ardab, and all things became cheap, except that the silver coins became much cheaper, and they reached to 120 dirhams for a dînâr⁷³. Then the blessed Nile came up, and something happened the like of which had not been known, and this was that the two rivers⁷⁴ met below Rauda on the 24th of Abîb, 31st of July, and the water reached the dam of the Canal on the 29th of

⁷⁰ *HPEC*, IV, i, 117-119.

⁷¹ *HPEC*, IV, i, 119.

⁷² *HPEC*, IV, i, 123.

⁷³ *HPEC*, IV, i, 123.

⁷⁴ The Island of Rauda causes the Nile to divide into two arms which meet again below it.

Abîb, 5th of August. And it reached its flood-measure on the 6th Misrâ, 12th of August, and the increase stopped, and it fulfilled its promise, and it reached the measure on Friday, the 19th of Misrâ, 25th of August, which corresponded to the 3rd of the month of Dhû'l-Qa'da in the year 630 A.H. And the canal was cut on the day after that mentioned, and there had not been seen a Nile more marvellous than that, and among its marvels was that it increased on the 26th of Misrâ, 1st of September, at the 17th cubit 10 fingers, and it became 17 out of 17 cubits, and on its second day seven fingers, and 17 cubits were completed⁷⁵.

1233/34 A.D., 950 A.M., 630/32 A.H.

There entered the year 950 A.M., and the Nile increased towards 18 cubits on the 12th of Tût, 22nd of September, four fingers, and it became 9 fingers above 18 cubits, and it increased on the 16th of Tût, 26th of September, four fingers, and it became over 17 out of 18 cubits, and it increased on the 17th of Tût, and it is the day of the Feast of the Cross, seven fingers, and it was completed at 18 cubits. And it increased on the 18th of Tût six fingers towards 19 cubits, and its maximum increase was ten fingers above 19 cubits. And it became stabilized on the land at the end of the month of Bâbah, so that it was thought that it would not decrease. And it was a magnificent Nile, and prices became cheap, and first class wheat was sold at 9 dirhams the ardab, and the barley at 5 dirhams and less, and nothing, at that time, was expensive. Then it was that the water increased in the month of Baûnah with a visible increase of 2 cubits, and there was at the bottom of the river a measure of 6 cubits. And there came the time for taking the standard of the bottom at the blessed Nilometer, and it was the 25th of Baûnah, 2nd of July, and the measure was at the beginning of 9 cubits. And there occurred in the evening of the 24th of Abîb, 31st of July, which corresponded to the 9th of Shawâl in the year 631 A.H., much cloud, and the sky became yellow, and it rained for a good hour, and the cloud remained the whole night, and this was among the strange things the like of which had not occurred. And the blessed Nile fulfilled its promise on Wednesday, the 23rd of Misrâ, 29th of August, and the increase was completed in the mentioned daytime, and the prices became cheap⁷⁶.

⁷⁵ *HPEC*, IV, i, 126.

⁷⁶ *HPEC*, IV, i, 129.

1234/35 A.D., 951 A.M., 631/33 A.H.

And the year 951 A.M. entered, and the blessed Nile increased, and it reached up to 11 fingers above 19 cubits, and the people were assured and good things multiplied and the prices became cheap. And the Nile decreased in time, and the people were optimistic that it would be a prosperous year. And the price of wheat was from 13 dirhams the ardab down to 7 dirhams the ardab⁷⁷.

1235/36 A.D., 952 A.M., 632/34 A.H.

Then the year 952 A.M. entered, and the Nile had reached in this year up to 18 cubits and 11 fingers, and the prices were cheap and things were found, and nothing in the city was expensive. And there happened in this year that there occurred in the land of Egypt a great pest, and particularly at Cairo, so that there were taken out every day from the city what exceeded two hundred dead ... and there were very few who were not sick in this year, and there was not in the two cities (al-Kâhirah and Misr) a house from which no dead person went out⁷⁸. And the blessed water of the Nile increased, and the people were assured thereby.

1236/37 A.D., 953 A.M., 633/35 A.H.

And there entered the year 953 A.M. and the blessed Nile reached to 18 cubits and 8 fingers, and the prices decreased and good things were found in abundance⁷⁹. And the blessed Nile came up to its measure, in this year, in the daytime of Thursday, the 13th of Misrâ, 19th of August, and it was the Feast of the Transfiguration of Christ on Mount Thabor. And it was an early Nile, and its increase came in succession, and prices were cheap and things were to be found, and they were cheap to the extreme, and the people were in great prosperity with abundant good things⁸⁰.

1237/38 A.D., 954 A.M., 634/36 A.H.

Then the year 954 A.M. entered, and the water increased until it reached

⁷⁷ *HPEC*, IV, i, 130-132.

⁷⁸ *HPEC*, IV, i, 145, 147-148.

⁷⁹ *HPEC*, IV, ii, 154.

⁸⁰ *HPEC*, IV, ii, 161.

23 fingers above 19 cubits. And the blessed Nile flowed impetuously in this year from the beginning of it. Then it stopped after that, and it came up on Saturday, the end of the month of Nasî, and on it the measure was completed and the Canal was cut. And in this year there happened wonders out of their time. An evident earthquake occurred which was felt by everyone in his house, and it rained during the days of the month of Nasî (September 6th - September 11th), and it was said that it did not occur except in a year of insufficiency of the Nile⁸¹.

1238/39 A.D., 955 A.M., 635/37 A.H.

Then there entered the year 955 A.M., and in it the water reached to 16 cubits and 8 fingers. — Then it was that the Nile rose and increased, and it reached the full measure on Saturday, the 20th of Misrâ, 26th of August, and prices diminished, and wheat was sold at 20 dirhams the ardab and less than that, and barley at 16 dirhams the ardab. And the blessed Nile came up to its measure on Saturday, the 20th of Misrâ, and the Sultan al-Malik al-'Adil had entered the city on account of the level. And wheat and barley and grains were at their medium price, and as for wheat, its highest price was at 30 dirhams the ardab, and its lowest was at 20 dirhams the ardab, and barley and beans were at 19 dirhams the ardab⁸².

1239/40 A.D., 956 A.M., 636/38 A.H.

Then the year 956 A.M. entered, and the Nile reached to 15 fingers above 18 cubits⁸³.

1240/41 A.D., 957 A.M., 637/39 A.H.

And there entered the year 957 A.M. on the day of Wednesday, the 9th of the month of Safar, 637 A.H. And the rise of the water in the Nile reached to 23 fingers above 17 cubits. And the water had ceased rising from the Feast of the Cross (27th of September), and the people were troubled at this. And wheat reached to 30 dirhams the ardab, and barley to 20 dirhams, and beans to 17 dirhams the ardab. And the rise regained to 2 fingers,

⁸¹ *HPEC*, IV, ii, 174.

⁸² *HPEC*, IV, ii, 191, 192.

⁸³ *HPEC*, IV, ii, 193.

and prices lessened a little, and the people were reassured, and most of the lands were watered⁸⁴. — Then it was that the blessed Nile reached to 16 cubits in the daytime of Monday, the 19th of Misrâ, 25th of August, which corresponds to the 3rd of Safar 639 A.H. And the Nile was increasing, and prices were increasing, and there was dearness for all what was on earth⁸⁵.

1241/42 A.D., 958 A.M., 638/40 A.H.

Then there entered the year 958 A.M. and the water of the Nile increased, and the prices were soaring. And the blessed Nile reached in this year to 18 fingers above 18 cubits, and it came up very well, and it was stablized on the lands with good stability, only that prices were increasing for every thing in the way of eatables. And prices rose until wheat reached to 50 dirhams the ardab, and barley to 35 dirhams the ardab⁸⁶, and later, as regards the prices, they rose greatly, wheat reached to 75 dirhams the ardab, and barley to 42 dirhams the ardab. And there was affliction, because the water of the Nile in this year reached to 18 fingers out of 18 cubits, and the prices were in this manner⁸⁷. And on Holy Saturday (the Saturday before Easter) barley went down and reached 40 dirhams the ardab.

1242/43 A.D., 959 A.M., 639/641 A.H.

Then there entered the year 959 A.M. on Friday, at the beginning of the month of Rabî' al-Akhar 640 A.H. and the Nile came up in this year to 8 fingers above 17 cubits, and the completion of its increase was on Monday, the 4th of Tût (14th of September). And it began increasing and decreasing, but it did not increase anything more beyond the 8 above 17. And the prices fluctuated, and they rose and wheat was sold at 70 dirhams the ardab, and barley at 40 dirhams the ardab⁸⁸. — And there came the days, for taking the depth of the Nilometer and its readings, and it was the 25th of Baûnah (2nd of July) and the depth on that mentioned day was 4 cubits and 14 fingers, and it was in the past year, on a similar day, 4 cubits and 20 fingers, the difference between them being 6 fingers. And the prices abated, wheat was from 50 dirhams the ardab to 30, barley was

⁸⁴ *HPEC*, IV, ii, 216-217.

⁸⁵ *HPEC*, IV, ii, 233.

⁸⁶ *HPEC*, IV, ii, 235.

⁸⁷ *HPEC*, IV, ii, 240.

⁸⁸ *HPEC*, IV, ii, 255.

from 25 dirhams the ardab to 20, and beans like it⁸⁹. And the blessed Nile came to its measure of 16 cubits on Sunday, the 23rd of Misrâ (29th of August). And the people rejoiced that it was a blessed Nile, only that the prices were maintained, wheat of good quality at 45 dirhams the ardab, and the inferior at 25 dirhams the ardab⁹⁰.

Table of Nile Level Data According to the History of the Patriarchs

Western Dates	Coptic	Islamic	Minimum Date	Level	Plenitude Date	Opening Canal	Maximum Date	Level
1216/17	933	614	—	—	—	—		17:22
1217/18	934	615	—	—	—	16/9		17:04
1218/19	935	616	—	—	—	—		17:07
1219/20	936	617	6/8	6:00	—	24/9		15:00
1220/21	937	618	—	—	—	—		17:02
1221/22	938	619	—	—	—	—		—
1222/23	939	620	—	—	—	—		18:07
1223/24	940	621	—	—	—	—		17:12
1224/25	941	622	—	—	—	—		18:04
1225/26	942	623	—	—	—	16/9		16:16
1226/27	943	624	—	—	—	16/9	24/10	18:12
1227/28	944	625	—	—	14/9	—	28/10	17:10
1228/29	945	626	—	—	—	—		17:20
1229/30	946	627	1/8	5:00	27/8	11/9		16:00
1230/31	947	628	16/8	4:00	—	17/9		14:23
1231/32	948	629	2/7	1:3/4	19/9	—		17:10
1232/33	949	630	—	—	7/9	—	17/10	18:06
1233/34	950	631	—	—	25/8	26/8	29/9	19:10
1234/35	951	632	2/7	9:00	29/8	—		19:11
1235/36	952	633	—	—	—	—		18:11
1236/37	953	634	—	—	—	—		18:08
1237/38	954	635	—	—	19/8	—		19:23
1238/39	955	636	—	—	11/9	11/9		16:08
1239/40	956	637	—	—	26/8	—		18:15
1240/41	957	638	—	—	—	—		17:23
1241/42	958	639	—	—	25/8	—		18:18
1242/43	959	640	2/7	4:20	—	—	14/9	17:08
1243	959	641	2/7	4:14	29/8	—		—

All dates pertaining to the Minimum and Maximum Level and Plenitude are according to the Gregorian Calendar.

⁸⁹ *HPEC*, IV, ii, 289.

⁹⁰ *HPEC*, IV, ii, 293.

Table for Comparative Data for the Maximum Level of the Nile

Western	Coptic	Islamic Era	Taghrî Birdî	Hijâzî	Aibak	Hist. Patr.
1233/34	950	631	16:03	16:03	18:11	19:10
1234/35	951	632	16:13	16:13	18:10	19:11
1235/36	952	633	17:02	17:02	—	18:11
1236/37	953	634	16:23	16:23	18:09	18:08
1237/38	954	635	17:00	16:08	18:23	19:23
1238/39	955	636	16:11	16:11	16:08	16:08
1239/40	956	637	16:19	16:19	17:15	18:15
1240/41	957	638	16:09	17:17	16:23	17:23
1241/42	958	639	16:21	16:21	—	18:18
1242/43	959	640	16:03	16:08	—	17:08

This table shows clearly that the author of the *History of the Patriarchs of the Egyptian Church* used an independent source for his maximum Nile level data, which in every respect are higher than those of the other medieval writers. They are closest to those of Ibn Aibak.