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Seven Remarks on Berenike-Coptos Road (οδος βερενικης) in Roman Period

Preface:

During Ptolemaic and roman Ages, Egyptian rulers' interest in eastern trade requires subsequent concern in two other issues: First, setting up harbors along side Red sea coasts; Second, paving roads that link the Nile with the Red sea. as for the former, many harbors were built on the Egyptian Red sea coasts listed from north-south were as follows:

1 - Arsinoi or Quilzam (=Suez),

2 - Myos Hormos (=Ancient Qusair),

3 - Philoteirs (=Gasos Berth),

4 - Leukos Limen (= Qusair),

5 - Nechesia (=Nakari Cape),

6 - Berenike (=Hurras City).(1)

As for the latter issue; ie roads linking between the Red Sea and the Nile Valley the most important roads are:

a) Coptos-Myos Hormos:

Started with Coptos on the Nile heading for the eastern desert of Egypt in a semi-straight strip to end up in Myos Hormos harbor on the Red sea . It amounted to 180 km- length . Archeological excavation-carried by IFAO had largely shown main stations, guard check- points, and watering stations ”Hydreuma” located on this road according to the following:

1- Matiolla, 2 - Qusar El-Banat,

(1) S.E. Sidebotham, "Ports of the Red Sea and the Arabia – India Trade" in V.Begley and R.D. de Puma (eds) Rome and India. Madison. 1991. P. 12.,

3 - Krokodilo,
4 - Al-Hammamt well,
5 - Wadi El-Hammat villages,
6 - Reysou hydreuma,
7 - Maximianou,
8 - Al-Hamra hydreuma,
9 - Sieala well,
10 - Al-Dauwy,
11- Al-Nakheil well.(1)

b) Apollonopolis Magna = Edfu-Bernike:

Began with Edfu on the Nile, and met Coptos -Berenike route after a 118km distance. Four main stations (Hydreumata) were situated in that space:

1-Abu-Jihad in wadi Aiyad, 15 miles=22.2kms from Edfu;
2- El-Kanais station, 32miles=47.4kms from Edfu;
3- Abu-Qreya, 62miles = 91.8 kms from Edfu;
4- samut, 80miles = 118.8kms (2) from Edfu. Next came Flacto where Coptos–Berenike(3) road was located. Edfu-Berenike road was 312-km-length, where fourteen stations was located, it could be covered within 9-10 day duration.(4)

Two remarks worth mentioning with regard to that road:

1- Edfu-Berenike road was 40 miles (=57km) shorter, than coptos-Berenike road; consequently, it took a two-day shorter duration to be covered. Yet there is no positive evidence indication its being used as a caravan route for commercial purposes during Roman period , except those six inscriptions found in El-kanais station on Edfu-Berenike road. As for Ptolemaic times, there were 85 inscriptions implying its being a caravan route.(5)

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(1) Héléne Cuvingy (ed), La Route de Myos Hormos. *IFAO*. Vol. I. (2003), pp.73-137

(2) Map. No. 1.

(3) G.W.Murray. "The Roman Roads and Stations in the Easteren Desert of Egypt. *JEA* XI. (1925), p.145.

(4) R.S. Bagnall, The Florida Ostraca.Duke University, (1976), p. 37.

(5) Ibid, p. 35 cf; Bernand, Le Paneion d'El-Kanais. Les Inscription Greques. Leiden. (1972), p. 34.

2- Edu-Berenike was ramified into a series of sub-roads reaching mines. For instance, Phlacto road was branched out reaching aquamarine mines in Siket, and Zabara maintain. Barramiya mines as well could be reached north-east of El-Kanais station, second in order on Edfu-Berenike road.

Therefore, it is clear that this road's significance came not only due to trade activities, but also to get gold and gemstones from the Eastern desert of Egypt. On the other hand, this road was a piotal link between this region, thebes and Aswan. Thus it was utilized by the military to ward off Blemmies raids on southern areas of the Eastern desert.(1)

c) Coptos-Berenike road οδος βερενικης:

About this road, Strabo(2) is quoted as saying:

Coptos (Kift) was a common city between the Egyptians and the Arabs where a road was stretched to the Red Sea close to Berenike city. It didn't have a harbor, yet it had a useful anchorage sites, due to the road's distinguished location. It had been said that ProlemyII Philadelphus made the first conquest of this water less road, and he was the first one to set up stations as if they were established mainly for caravans Philadelphus accomplished these achievement as it was not easy for navigation. Especially for vessels shipping from the furthest south extreme.

Pliny(3) has specified number of stations and intervals between each of them on the road from Alexandria to Berenike as follows:

Ab Alexandria abest oppidum Iuliopolis. inde n avigant Nilo Coptum CCCIX *P.qui cursus etesiis flantibus peragitur*XII *diebus. a Copto camelis itur, aquationum ratione mansionibus dispositis*: *prima appellatur Hydreuma XXII*; *secunda in monte diei itinee*; *tertia in altero Hydreumate a Copto* LXXXV; *deinde in monte*; *mox ad Hydreuma Apollinis a Copto* CLXXXIV; *rursus in monte*; *mox ad Novm Hydreuma a Copto* CXXX. *est et aliud Hydreuma vetus - Trogodytieum nomynatur- uri praesidium excubat*

(1) R.S. Bagnall. op. cit, p. 39.

(2) Strab, XVII. 44-45.

(3) Pliny, NH, VI.XXVI. 101-104.

deverticulo duum milium; *distat a Novo Hydreumate* VII. *inde Berenice oppidum, ubi Portus Rubri maris, a Copto* CCLVII. P. *sed quia maior pars itineris conficitur noctibus propter aestus et stativis dies absumuntur, totum a Copto Berenicen iter duodecimo die peragitur*.

Coptos-Berenike road οδος βερενικης joined Coptos-Mayos Hormos road οδος Μουσρμιτκη in the first 30kms, then deviated east-south ward reaching Berenike. Stations located on Coptos-Berenike road were recognized by means of Peutinger map (second century) where it stations were mentioned, whilst Antonium Itinerary (Itinerarium Antoninianum) in the third century named 10 hydreuma only.(1)

The following schedule displays main stations (Hydreumata) located on Coptos-Berenike road:(2)

No	The modern name	The lateen Name	The distance for Coptos		East	North	Distance between stations
			kms	Mil			
1	Matula	–	20 km				
2	Laketa	Phoenicon	35.5	24			35.5
3	Khashm el-Menih	Didyme	71.1	48			35.6
4	Beer Wadi el-Menih	Aphridito	110.7	68			29.6
5	Dweg	Compasi	133.3	90			32.6
6	Wadi Abu Greia	Jovis	170.8	115	°33′41	°24′55	37.5
7	Wadi	Aristonis	204.5	138			33.7

(1) Ball , Egypt in the Classical Geographers Cairo 1954. PP: 122-138.

(2) G.W.Murray. "The Roman Roads and Stations in the Easteren Desert of Egypt. ***JEA*** XI (1925) P.144.

Jacobsen gives the main station without distance, A.B. Jacobsen "Traffic on the Roads between Coptos and the Red Sea" in O.E. Keper (ed) Life on the Fringe. Living in the Southern Egyptian Desert during the Roman and early-Byzantine Periods. Leiden , 1998. P: 71. About the Roman creation see R. Alston. Solider and Society in Roman Egypt. London. 1995. P. 194.

	Kharif						
8	Wadi Dweg	Falacto	241.5	163	°34′26	°24′44	37
(*)	Wadi El-gimal	Apollinis	275.6	186	°34′44	°24′32	34.1
9	Wadi Abu Ghusum	Cabalsi	315.5	213	°35′03	°24′23	39.9
10	Wadi Khshir	Novum Hydreuma	342.2	231	°35′14	°24′11	26.7
11	Wadi Abu Greia	Vetus Hydreama	355.6	240	°35′18	°24′04	13.4
12	Berenike	Berenike	380.6	257	°35′28	°35′55	25

As for the etymology of these stations names, it was originated from various origins. Some stations were named after the name of a god or the emperor who established it. Other stations carried a name relevant to its lifespan (eg. ancient, modern), other stations were related to geographical features of the site. Amongst this variety, religious names were the most common: for instance, there was the Aphrodite station, Apollo, and Jove.(1) There were other four stations referred to in Peutinger map were:

No	The station	Distance from Edfu		North	East
		Kms	Mil		
1	Abu Greia	187	131	°24′40″35	°34′33
2	Wadi Higilig	237	166	°24′24	°34′59
3	Wadi Abu Ghlke	254	178	°24′21	°35′04
4	Sekit	306	215	°34′26	°35′25

Bagnall(2) assumed that not all these stations were hydreumata in the full sense of the word. Not all these stations provided residence during day time; rather some of them had the purpose of watering only. Carvans didn't have to stay more than half a night, as some nights could be spent outside these stations.

(*) Cabalsi hydreuma was mentioned in the Antonium Itinerary.

(1) R.S. Bagnall, Florida Ostraca, p, 38.

(2) Ibid. pp. 38-39.

First Remark: Road's Importance:

Coptos-Berenike road was of no less importance than Myos Hormos-Coptos road owing to:

A) Road length

Coptos was 380km away from Berenike, Whilst the distance between Coptos and Myos Hormos amounted to 180km, in addition to 338.5 km till you reach Berenike(1) therefore, the sum total distance was 518.5 km. as indicated above from these numbers Coptos-Berenike road was 137.5km, shorter than Coptos-Myos Hormos road if one was traveling from Coptos to Berenike. According to Pliny,(2) a vessel sailed a 36.5 km distance in the Nile per day. This distance between Berenike and Myos Hormos could Be covered in 9 days in addition to 6 nights taken in the way between coptos and Myos Hormos. Therefore, a whole journey from Coptos-Myos Hormos(3) road to Berenike via the Red Sea took 15 days, whilst a journey from Coptos to Berenike via desert overload took 12days, ie the latter saved three days.

If we are to accept Strabo's(4) view-an office work not above suspicion-that a Captos-Myos Hormos journey could be covered in 6-7 days, and if we are to accept what the unknown author of the Periplus(5) that a Berenike-Myos Hormos Journey could be covered in 3-4 day-duration, the sum total duration would be 11 days; ie; one day less than Coptos-Berenike road Journeys. Still, if we accepted the latter; we would have to overlook two matters:

1- According to Pliny, a vessel used to cover a 36.5 km per day by sea, and this distance could be modified in our age to be 84.5km per day, which is considered far-reaching even using recent times standards.

(1) Map, 2.

(2) Pliny, NH , VI . XXVI .101

(3) Strab. XVII, 44–45.

(4) Strabo, XVII. 45.

(5) PME. No. 2.

2- According to Strabo,(1) 120 vessels entered Myos Hormos Harbor per Year. If we are to accept this information; adding that work duration atr this port-whether to import or to export-was 8 month, the total number of vessels was 15 per moth, such number could not be a reliable means to measure the advantage of one port over another, or even to measure Eastern trade capacity in Egypt or the Roman Empire. Consequently, it mean to overlook whether there were treacherous coral reefs blocking navigation or not? And whether there were operating pirates threatening navigation or not?

***B)* Security and Safety:**

Journeys heading from Berenike to Coptos spared travelers two things:

1- Sailings 338.5km-distance in the Red Sea fighting with coral reefs, air stream, and shortage of food and water still, Berenike-Coptos provided travelers with the company of Roman military garrisons. Travelers were used to sail in between stations at night; and during daylight, they stayed at the next station. That's because an interval in between two stations didn't exceed 37kms.

2- In case Journeys were heading from Coptos to Berenike, travelers had two options:

One) To sail southward across the Nile to Apollonopolis Magna (=Edfu), from which they could sail to Berenike where food and water more available in abundance. Besides, they could enjoy the company of Roman garrison soldiers encamping out in Berenike with 312-km length.

Two) In case a traveler took Coptos-Berenike route directly, he would save himself a 147.5km extra distance.

If the assumption proved true, Coptos would serve as a storehouse for goods imported from Europe via Alexandria, and local goods before its exportation being approved. If for journeys from coptos to Edfu, they enabled travelers to collect more local goods before traveling over desert outland to Berenike of 312,Km length.

(1) Strabo II, 5. 12.

***C)* Economic Importance of Berenike-Coptos Routes:**

On both sides of Coptos-Berenike or Edfu-Berenike roads lot of gold and mineral mines were scattered, in addition to quarries of building materials, gemstones, faience, and ceramic, Besides, there found lots of medical and aromatic plants in the eastern desert. Pliny(1) mentioned that there are 12 species of emerald, amongst which the Egyptian emerald discovered in eastern desert mines that came in third rank in terms of importance. Strabo(2) also said that some Arabs residing at the eastern desert used to drill deep digs in the ground seeking for gemstones.

D) Emperors had an increasing interest in outland routes, amongst which was Emperor Hadrian (137 AD) who set up a road carrying his very name linking between Berenike and Antinopolis (=Sheikh Obada,(3) Sohaj Governorate) if inscription dated back to 137 AD registered the inauguration of this road.

"*....οδον καινην Αδεριανην απο Βερενικης εις Αντνοου δια τοπων ασφαλων και ομαλων παρα την Επυθραν Θαλλασσαν υδρευμασιν ..... αφθονοις ..... .*(4)

E) Taking into consideration commodities in some Berenike relics, we would note that wine-be it Italian, Laudician, or Cyprion - and Olive oil occupied the top. Such liquid goods were bottled in potteries in few amounts, so it was easier and more secure to be transported on donkeys and camels backs.

Thus during Strabo's(5) time (24-20BC) Berenike was neglected amongst other places by the end of Ptolemaic age, and the beginning the Roman age. That's why Myos Hormos had the priority, Nevertheless, matters got

(1) Pliny. NH, XXXVII. XVII

(2) Strabo. XVII. 45

(3) Obad Bin Al Samet one of profit Mohamed's friend (Al Sehaba) who share in conquest of Egypt 642AD

(4) R.E. Zitterkop and S.E.Sidebotham, "Survey of the Via Haderiana" *IFAO* (1997) pp. 221-230.

(5) Strabo. XVII. 45.

altered during the second half of the first century AD according to what the unknown author of Periplus[1] mentioned at the outset of his talk on Egyptian Red Sea harbors. Pliny[2] on the other hand - paid most of attention to Coptos-Berenike road, to least attention to Myos Hormos-Coptos road. Therefore, it can be said that Berenike had became the most important Egyptian Red Sea harbor since the second half of the first century AD.[3] It preserved its importance till the seventh century with the Arab conquest of Egypt[4].

In a nutshell, Myos Hormos and Berenike played equal footing roles in Egypt's eastern trade even during the age of the Periplus author. This can be accounted for as follows: Myos Hormos assumed the lead to some extent, till Berenike importance begin to increase gradually during the age of Emperor Tiberius Caesar whose efforts were directed to harbor reparation. Then came other Emperors working on the same concern as: Titus Flavius Domitianus, Trojans, Hadrianus and Marcos Auriellus (161-180). Thus it seems that during Pliny's time of writing (70-77AD), Berenike was gaining more importance till it excelled Myos Hormos.

Second Remark: Region Management

Eastern Desert of Egypt and the Red Sea were strategically and economically important due to abundance of gold, aquamarine, and gemstone mines; beside building material quarries. These regions gained more importance due to ports established on Red Sea coasts, especially Myos Hormos (=Ancient Qusair) and Berenike (=Al Hurras). This accounts for early Prolemies' interest in imposing their influence over these regions. Since the occurrence of national revolutions and Thebes independence (206-186 B.C), new vacancy appeared; ie Epistrategos of Thebes who was entitled with military, civil tasks at the same time. Amongst other titles and domains entrusted to the Epistrategos "Red Sea and Ocean supervision" as referred to in the following title:

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(1) PME.1.

(2) Pliny, NH. VI. 24:101-104.

(3) L-Casson. op. cit. pp. 96-97.

(4) R.T.J. Cappers, Roman Foodprints at Berenike. Los Angeles. (2006), p.1.

ο στρατηγος και επιστρατηγος της Ερυθρας και Ινδικης Θαλασσης[1]

As for the Roman age, there was a mayor pertaining to the region who carried many titles: Berenike Commander, Topaz aquamarine mines supervision; as referred to in an inscription dated back to 11 AD[2], The common title was Berenicidis Praefectus Montis [3] or "Berenike Mountain protection leader" as indicated in aonther inscription of Krokodilo station (Um El-mauaieh on Captos–Berenike road) dated back to 219AD[4]. It is possible that the leader used to reside at the premises of Roman garrisons camping out the south of Coptos.

The above mentioned leader was charged by the governor (Praefectus) with laying custom tariffs[5] imposed upon people, pack animals, the transported commodities, and entrance fees across desert routes or ports. In 90AD, the leader issued an entrance free-list of prices to be levied at toll gutes:

Fees of a ship to Red Sea	8 Darchma
Fees of a ship in the Nile	6 Drachma
For sale man	5 Drachma
For craftsman's	8 Darchma
For Prostitute women	108 Drachma
For sale man's wife	20 Drachma
For soldier's wife	20 Drachma
Foe a Camel	2 Obols
For affixing an official seal	2 Obols

(1) Linda. M. Ricketts, "The Epistrategos Kallimachos and A koptite Inscription: SBv: 8036. Reconsidered**,** *Ancient Society* 13/14 (1982) PP: 161-165.

(2) SB.10173a (AD.II); Cf. S.E.Sidebotham and Others "The Roman Qurry and installations in Wadi Umm Wikala and Wadi Semna" *JEA* 87 (2001), pp.137-138; CF., A.Bernand, Pan du Desert. Leiden. (1977) no. 51.

(3) O. Krokd. No. 15, 41, 47, 65.

(4) O. Krokd. No. 87.

(5) OGIS. 674 and CF. A. Bernand. Les Ports du Desert. Paris.(1984) N. 67; Cf. Wallace, S.L. Taxation in Egypt from Augustus to Diocletian. New York. (1937), pp. 273-274.

For a donkey	2 Obols
For a woman	1 Obols

Note: A man-whatever his profession was - had to pay approximately 5-10 drachma whilst women - whether a craftsman's or sailor's wife - had to pay 20 drachma at least. As for prostitutes they had to pay 108 drachma. It is unknown on what basis were these fees imposed; was it because women protection all along unsecured road was a costly task? However, we should hint at the idea that prostitutes' high incomes were the main reason behind such soaring fees. This could be justified as soldiers were not allowed to marry during military service; as for guards working on Berenike-coptos route, they rarely took their wives along with them that's why prostitutes were their only available means to satisfy their sexual desires.(1)

Third Remark: Payments and fees:

Tolls Levied from merchants and cararan owners passing by desert roads heading for Berenike could be categories as follows:

A) Custom duties: it estimated at 25% of the transported commodity's value it was paid at the arrival at Egypt, especially in Coptos for vessels shipping from the East via the Erythraen sea, or in Alexandria for vessels shipping from Mediterranean countries. Duties were to be paid once again at the departure from Egypt; ie duties were paid twice: on commodity's arrival at and departure from Egypt, if it was to be re-exported.(2)

B) Toll paid for the use of the road heading for Berenike harbor. This toll was specified as in the above mentioned list.

C) Desert guard tax; it was levied in Faiyom as follows, one drachma for a non-loaded donkey, 2 drachma for Camel, 6-8 drachma for a loaded Camel. This tax was raised at desert outlands' gateways. There was a

(1)About prostitute see, Montserrat**,** Sex and Society in Graeco-Roman Egypt. London. (1996).

(2) PME 19.; Cf, Strabo XVII. 798.

reference to a desert guard tax that amounted to 10% of the given commodity's value.(1)

D) Merchants used to pay fees for private guards, their use of pack animals, and the drives of animals. Such payments were not left for coincidence; rather, there was some sort of commercial contracts limiting each party's responsibilities with regard to goods transportation, clearance procedures, goods re-movement or storage.(2)

Fourth Remark Guarding:

Guard patrols charged with protection of intervals between stations composed of detachments of 12,(3) 15(4) or 18 infantry soldiers, service was distributed periodically by dividing a detachment into platoons of 4,5 or 6 soldiers performing their service one day out of three. Cavalry forces participated in guarding tasks as well.

In addition to regular army forces like the infantry and cavalry, new para-military arrangements appeared; formed mainly of towers' guardsmen. Each unit included 10 guardsmen working under military leadership of the Roman army. Those guardsmen were scattered in towers, serving in rotation at night; and no one of them ever served by himself alone.(5)

Serving as a guard was not a profession confined to Egyptians only; on the contrary, Roman administration in Egypt sough help in Palmyra soldiers especially archers riding camels to guard desert routes. Those Palmyra soldiers had left many inscriptions devoted mainly to gods like Ba'al, for instance. Not just Palmyra soldiers, but also Nabataeans served in these guarding units. Moreover, Palmyra and Nabataean people were active merchants in the Red Sea trade, and had stores of their own. Furthermore,

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(1) Waliace, op. cit. pp. 272, 565 and 573.

(2) Casson, L**.** "P.Vindob. G. 40822 and the Shipping of Goods from India" *BASP*23 (1986), p. 76.

(3) O. Maxi. 1306.

(4) O. Maxi. 920.

(5) Bingen and Others, "Mons Claudianus Ostraca Graecae et Latin II, O.Claud. 191a 416 *IFAO* 32 (1997) pp. 165-168.

they formed sort of a union for Palmyra merchants in Coptos,(1) the issue that was referred to in a number of inscriptions. Nabataeans had their own trade as well is Coptos-Berenike road especially in the wake of Roman invasion of Nabataean countries in 106AD.

Roman army's scope of work was not confined to the Egyptian eastern desert-namely for watching & roads protection, but also they set up stations, reservoir tanks, and their maintenance. An inscription(2) dated back to Vespasian (69-79) recorded a list of soldiers' names whether belonging to Roman squads or the assistant forces. In the first column, there was a reference to cavalry soldiers and officers who numbered 424. as for the second column, it started with the first medical battalion (Thebaeorum), then three names of Commander of Centurion, then names of soldiers participated in the construction and preparation process who were numbered as follows: 16 Commander of Centurion , 61 cavalry soldiers, 782 infantry soldiers from seven battalions.

These forces were entrusted to build water tanks and escorts on Coptos-Berenike and Coptos-Myos Hormos roads. Regarding station (Wadi El-gimal), and eir Deij(3) station. Total number of soldiers participating in the process were 1233 soldiers, amongst which 20% of the Egyptian assisting forces(4).

Fifth Remark: Inhabitants and Laborers:

Periplus author(5) mentioned that the most suitable time for sailing from Red Sea ports and Indian-Ocean African coasts were, "For those leaving for Indian ocean coasts-especially south at can desert. India, and Sri lanka's markets- they have to set off from Egyptian harbors in July to benefit from

(1) A, Bernand, Les Ports du Désert. N. 103. p. 262.

(2) CIL. III 6627

(3) D. Kennedy, "Composition of A Military Work Party in Roman Egypt" *JEA*71(1985) pp. 156-7; CF., R.S. Bagnall, "Army and Police in Upper Egypt" *JARE*. 14 (1977) P.69

(4) R. Alston, Soldier and Society in Roman Egypt. London (1995), p. 29.

(5) PME. 14, 39, 49, 56.

monsoons. As for September, it was the most suitable to set off a journey from Egyptian harbors for Arab Peninsula & African coast markets(1).

Still; returning back journeys (2) from African coasts (south of desert), India, or Sri Lanka for Red Sea Egyptian harbors was to be set off in November & January. Commodities transport from Red Sea harbors was best done from the second half of October till the second half of February, and the second stage of transport ranged between the second half of june and August/September. Thus trade activities via desert roads were decreased sharply for almost three or four months: March, April, May & the first half of October. Therefore, residents of these desert regions become out of work during these months despite of their need for all necessary provisions got from the Nile Valley for local consumption(3).

As for Berenike inhabitants, assumptions indicated the existence of 2000 households, & The population numbered 10.000 people. Another assumption referred to the existence of 1000-1500 households only, & the population was 5000 people. These assumptions were based on other assumptions that each household consisted of five member. Still, there is no positive evidence of these assumptions(4), as population differs from one epoch to another. As for temples & other buildings there were about one hundred ones(5).

Since Berenike harbor labor pertained mainly to summer months, workers preferred to reside at Shenshef, 35 kms- south of Berenike. Shenshef's most distinguished advantage was its permanent water resource;

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(1) PME. 24.

(2) Casson, The Periplus of the Erythraean sea . Princeton (1989), pp.283-291.

(3) S.E Sidbotham, "Ptolemaic and Roman Water Resources and their Management in the Eastern Desert of Egypt" in Liveravi, Mario, Merighi and Francesca (eds), Arid Lands in Roman Times. Firenze. (2003), Chapter Nine. P.2

(4) W.Z. Wendrich "The Relations between Berenike, Shenshef, and the Nile valley", in O.E. Kapper (ed). Life on the Fringe, "Living in the Southern Egyptian deserts during the Roman and early - Byzantine periods, Leiden (1998), pp. 243-244.

(5) W.Z. Wendrich "The Relations between Berenike, Shenshef, and the Nile valley", in O.E. Kapper (ed). Life on the Fringe, "Living in the Southern Egyptian deserts during the Roman and early - Byzantine periods, Leiden (1998), pp. 243-244.

ie wells, that's why it attracted laborers during work suspension at Berenike harbor. Lots of houses, relics, and consumed materials similar to those found in Berenike were discovered in Shenshef. Getting food supplies was an easier task than water, as food required only one trip to coptos that took 12 nights(1).

Hence, it's worth mentioning that there were three types of crops in Coptos-Berenike road in particular, & the rest desert routes in general. These types were:

A) Natural plants relevant to the surrounding environment: spices, sill trees herbage, and grass.

B) Man-sowed local corps especially in villages surrounding Berenike: sorghum (sorghum bicolor), & other vegetables of daily use (onions, leek, garlic)(2).

C) As for the third type, it was recognized by remnants. It contained wheat (tritium spp), barley (Hordeum vulgar)(3), red beet (beta vulgoris), cherry (credendum satium), cucumber (cucumis sativus), cumin (cuminum cyminum), dill (Anethum graveolens), fennel (foeniculum Vulgaue), fenugreek (trigonella foenum- graecum), garlic (Allim sativum), onion (Allium ceppa), and water melon (Cirrultus landatus).(4)

During Prolemaic period, Berenike population consisted mainly of Greeks, Macedonians, Egyptians, and Greek Egyptian. They resided at the Nile valley and the Eastern Desert. There's no proof that non-Egyptian

(1) W.Z. Wendrich, op. cit, p. 244; Cf, RTJ Cappers, "Archaeobotanical Remains" in Sidebotham and Wendrich (eds) Berenike (1998), p. 305.

(2) R.T.J. Cappers Archaeobotanical Remains " in Berenike (1996). pp. 309-310.

(3) Ibid. PP. 314-315. Cf, R.T.J.cappers, Roman Foodprints at Berenike . LosAngeles.2006 . pp;21 – 48.

(4) R.T.J. Cappers "A botanical Contribution to the Analysis of Subsistence and Trade at berenike (Red Sea Coast, Egypt "in J.C.M Strakey (ed) People of Red Sea II (2005), pp. 76-77.

people had lived in Berenike[1] during Ptolemaic times. During the Roman age (from 30BC), Berenike Ostraka[2] indicated an entire Roman control over trade in Berenike harbor & all the roads heading for it from garrisons camping put in stations established on road, or from patrols especially cavalry patrol. These relies suggested that region inhabitants or workers were Egyptians, Greek, Romans, or Palmyrenes. Some of those inhabitants also belonged to the Red Sea and Indian Ocean regions especially durig early Roman times till the beginning of the third century AD, No confirmed data is available on the last part of the third & four centuries[3].

A Roman inscription found in Berenike showed a spear solider of assistant forces named Marcus Aurelivs Mucimus dedicating a memorial to Emperor Caracalla, his mother Julia Domna, and the rest of the family. This inscription was dated back to the tenth of Tut month, 24th fear of Caracalla's reign = September 8, 215 AD[4]. Some remarks to be mentioned at this inscription:

A) The solider mentioned that he belonged to Palmyra, and this is not the first time for Palmyrence names mentioned in Egypt, as their names were common amongst merchants and soldiers.

B) This solider served at a military spear unit (Numerus) in the Eastern desert. This very unit was referred to in another inscription discovered in Coptos[5].

C) The soldier mentioned nothing about what exactly this consecration was. Yet it might be a statute of a Palmerence god or goddess, because the Coptos inscription had a reference to Herba'al god statute[6].

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(1) S.E. Sidebotham, "Evidence of trade Goods, Languages and Religion from excavations at Berenike" in J.C.M Strakey (ed) People of Red Sea II (2005), pp. 105-108.

(2) R.S. Bagnall, Documents from Berenike part I (2000) and part II (2005).

(3) Sideotham. (2005) op.cit. p. 112.

(4) A.M.F.W. Verhoogt, "Geek and Latin textual Material" in Berenike 1996 Edited by Sidebotham and Wendrich. Leiden. (1998) Inscription. pp. 193-195.

(5) Bernand, Les Ports du Désert. No 85.

(6) Verhoogt, op. cit. p. 198.

D) The inscription referred to the title of praefectus = επαρχος which means military commander this might be a reference to the leader of the soldier's military unit.

Sixth Remark: Means of transportation:

Bagnall(1) assumed that river transport had the priority amongst other means of transportation in Egypt in general, and rural areas in particular. As for vehicles on outlands, it was too expensive. That's why outland transport depended more upon donkeys & camels, with donkeys having precedence due to its low prices especially while conveying crops from storehouses to Nile harbors. However, camels were nick named as "desert vessels", especially in long-distance journeys.

Therefore, donkeys and camels were the most leading transport meand of both goods and people on Coptos-Berenike road, and may be on other roads. Yet many points had to be taken into consideration with regard to donkeys or camels use: A donkey consumes 10 liters of water daily, whilst a camels consumes 20. However; in cold weather, camels dispese water all along the way from the Nile to any station. That's why camels were preferred. Besides, a camel can drink water containing salt five folds more than a donkey. Furthermore; a donkey consumes Hydrogen three time more than a camel, that's why donkeys need more water. On the other hand, a camel() has the ability to carry a 200-325 kg-cargo on distance journeys, and 475kg-cargo in shortness. As for donkeys, they carry only 70-91 kgs. Still, donkeys have and advantage over camels(2) with their ability to walk amidst rocky & stony roads. On the account of that, it was supposed that camels, main task pertained to conveying water to stations' (Hydreuma) tanks(3).

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(1) R. S. Bagnall, Religion, Later Roman Egypt: Economy and Administration. Ashgate. (2003) XVI, pp. 5-6 = "The Camel, the Wagon and the donkey in later Roman Egypt". *BASP* 22. (1985).

(2) S.E Sidebotham, "Ptolemaic and Roman Water Resources and their Management in the Eastern Desert of Egypt" in Liveravi, Mario, Merighi and Francesca (eds), Arid Lands in Roman Times. Firenze. (2003) Chapter Nine. p. 2.

(3) Jacobsen, op. cit. p. 12.

As for horses (ιππεις, προβολη), they belonged to Roman garrison soldiers moving in between stations However, horses carried some light weights over 20kgs. It is possible that there were contractor responsible for transporting goods between stations only, not all along the road due to two reasons.

A- it would be unreasonable for pack animals especially donkeys and horses - to keep walking in a 12-day journey continually.

B- working in intervals between stations enabled caravans to convey goods from station (1) for station (2). In case a journey headed for the Nile this mean that these conveyed goods were imported. So this caravan would be loaded with cargo from station (2) for station (1), and usually the cargo was meant to be exported or to be consumed at Berenike. That's how this journey would be economical for contractors.

C- Another reason related to region inhabitants can be added. They might have sought help in contractors to transport local inhabitants' goods, so that they might work as guards or guides for these caravans. Most common tribes whose members worked as contractors were: Ababida, Bisharis, & Ma'azy. Their work secured caravans against plunder or robbery Coptos tarariff[1] taxation system had imposed fees upon personal guards hired to accompany caravans in the desert from Berenike for Coptos or vice versa: a guard had to pay 10 drachma on his arrival at Coptos

Seventh Remark: *Water Resources*:

Three species of living beings are in need for water: humans, pack animals, and vegetations.

A) Human beings' need for water varies according to whether one is traveler or a dweller. A traveler to the Red Sea via Berenike-Coptos road could take along his water supply with him, some times, he wouldn't need it at all. As for a dweller, normal consumption of water amounted to 6 liters daily; and 15-20 liters in hot weather for many

(1) OGIS. 674.

purposes including drinking, cooking, washing, bathing[1], etc….Soldiers and Bedouins depended mainly upon surface water accumulated from rainfall, & upon desert wells guarded by watching stations.

B) Animals utilized by travelers merchants, and Bedouins were mainly donkeys, camels, horses, sheep, Animals' need for water varies as well according to whether were traveling or not. Camels traveling short-distance journeys didn't need water especially in cold weather. Donkeys& the rest of animals had to drink, so this required constant resources in desert especially from wells & tanks[2].

C) Vegetations were mainly thirst-resisting wild plants. Its main resource of water was rainfall, then frost accumulated on vegetations in winter[3] & the matter disabled its growth.

Desert Coptos-Berenike road's main water reasorces could be limited into three categories:

one) surface water: accumulated by heavy rain falling over Red Sea mountains, or desert hills. Floods and heavy rain usually from wadis (Valleys) where people usually gathered. Man had to preserve this water by means of setting dams up to alleviate water intensity, or by prolouging artificial channels to gather water in a low area to be used later on. They used to save water in tanks to keep its freshness & prevent its reakage into sand. As for water transportation, it was completed either, by donkeys, or by hoists if preserved in wells. A Berenike Ostraka[4] indicated that some times water was carried upon peoples shoulders stored in skins. However, there are two remarks worth mentioning:

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(1) S.E Sidebotham, "Ptolemaic and Roman Water Resources and their Management in the Eastern Desert of Egypt, p. 2.

(2) Ibid. P.2.

(3) R.T.J. Cappers "A botanical Contribution to the Analysis of Subsistence and Trade at berenike Red Sea Coast Egypt" in **J.C.M Strakey** (ed) People of Red Sea II. (2005), p. 76

(4) O.Ber II 191

1- Such resources couldn't be reliable, ad it lasts for a short while.

2- Most of the rain fell down over the eastern side of Red Sea mountains consequently, it couldn't be utilized to the utmost; rather, it destroyed coral reefs.

two) Frost accumulated on vegetations had no enormous effect, and it was only seasonal. However, it was indispensable to some winter crops.

Three) Wells and tanks: Guard stations interposed these wells and tanks. Hydrumata were constructed in low-surface areas in order to get rain gathered naturally. Rain water some times was pilled up using earthern tubes to get water down from mountains, summits. Tank water was taken either from the Nile Valley, or Shenshef (35°22'72"E, 23°44'25"N) where great amounts of water were gathered in an enormons lake-like wells. Incollapsible wells were built using solid, strong stones. Amongst the most important wells were Abu Hjeilij (34°59'48, E, 24°23'94" N) and Um Qreya (34°32'60"E, 24°40'56"N)

Conclusion:

The importance of Berenke-Coptos road was return to the Ptolemaic era and this importance was increased in Roman era and this return to length of the Road and to it is security and safety. this Region demand a special administration under the supervisor of the Epistrategos of Thebes. Custom duties was an important income for the Roman Empire as it was estimated at 25% of the transported commodity's value. Since Berenke harbor labor pertained mainly to summer month, workers preferred to reside at Shenshef . finely J give attention for the animals of transportation . and the water sources in the region.

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(B) Ostraca

(1) O. Berenike I. II.

(2) O. Flord

(3) O. Krok

(C) Inscriptions:

OGIS = Orients Graeci Inscriptions Selectae .

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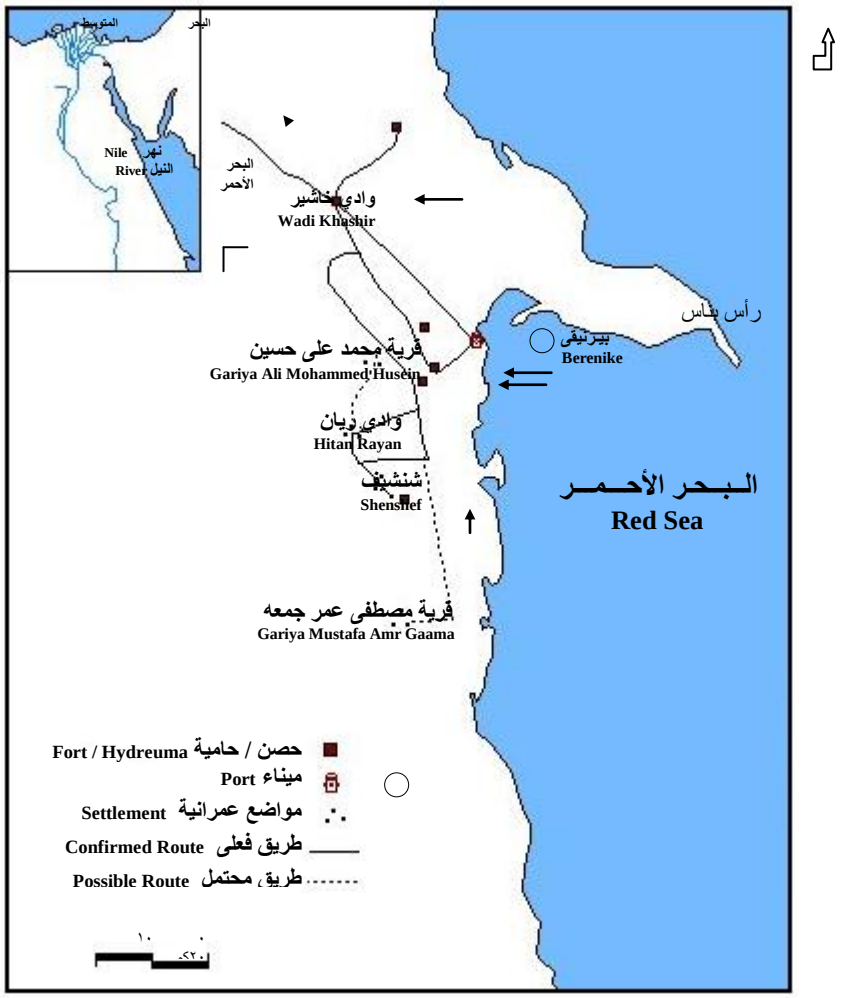

Figure (1) Berenike and surroundings

Figure (2) The routes between Coptos and the Red Sea , with the Greek names of the principal stations