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Did Rome engage in pearling in the Red Sea? A re-examination of the two dedications by Publius Iuentius Agathopus.

Rome’s craving for pearls

In the early second century AD, at the time when Arrian was composing his *Indika*, the Romans had become the most passionate purchasers of Indian Ocean pearls in the Mediterranean world, having long eclipsed rich Greek consumers: “Those who bring merchandise from India to our country are at pains to purchase these jewels and export them, and rich and prosperous Greeks in the past, and Romans today, are still more eager to buy the sea *margarités* [= pearl] as it is called in the Indian tongue.” Several decades earlier, indeed, Pliny the Elder had already commented on the Romans’ incredible, though reprehensible, taste for this splendid object: “The first place therefore and the topmost rank among all things of price is held by pearls. (...) Their whole value lies in their brilliance, size, roundness, smoothness and weight, qualities of such rarity that no two pearls are found that are exactly alike: this is doubtless the reason why Roman luxury has given them the name of ‘unique gems’ (*uniones*).” Then Pliny goes on to say: “[Aelius Stilo, a Roman historian of the early Imperial period] records that they came into common use at Rome after the reduction of Alexandria under our sway, but that small and cheap pearls first came in about the period of Sulla – which is clearly a mistake, as Aelius Stilo [a Roman scholar whose floruit may date to the late 2nd/early 1st century BC] states that the distinctive name [i.e. *unic*] was given to large pearls just at the time of the war of Jurgurtha.”

This remarkable passage summarizes in some way when and how the Romans’ interest in pearls gradually turned into a craving. The first stage, or the discovery of this “gemstone”, no doubt goes back to Rome’s expansion in the Eastern Mediterranean world in the 2nd century BC, where the presence of Indian Ocean pearls is attested by several archaeological artefacts and a little written evidence. From the late 2nd century BC onwards, as both Aelius Stilo and Pliny claim, Roman – wealthy – customers, no longer content with small pearls, looked for items of higher quality, that is to say large, round, white pearls. Finally, the annexation of Egypt in 30 BC, facilitating the movement of goods between the pearl-producing areas and the Mediterranean world, engendered a boom in the consumption of “luxuries”, which was regrettable in Pliny’s eyes: the demand for pearls of various qualities, along with spices, aromatics, gemstones, and silk garments had caused Rome to strongly depend on Eastern products: “At the very lowest computation, India, the Śeres, and the Arabian Peninsula, withdraw from our empire one hundred millions of sesterces every year – so dearly do we pay for our luxury and our women.”

It goes without saying that the pearls beloved by Roman customers were almost exclusively imported from the Gulf of Mannar and the Arab-Persian Gulf, both situated in what was commonly called the Erythraean Sea (Greek: *Erythra thalassa*; Latin: *mare Rubrum*). Here pearl-oysters of the genus *Pinctada* and *Pteria* were found in such abundance

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1 Arrian. *Ind. 8*, 9 (translated by P. A. Brunt).
2 Plin. *HN* 9,106 ; 112 (translated by L. Rackham)
5 Plin. *HN* 12, 84 (translated by L. Rackham).
6 This name was commonly applied to the modern Western Indian Ocean, including the two gulfs attached to it, namely the Arabian Gulf (= the Red Sea) and the Persian Gulf (the Arab-Persian Gulf).
that pearls were continuously and intensively fished in both regions until pearl-fishing died out, in the first half of the 20th century. Fresh-water pearls, formed by a river mussel – *Margaritifera margaritifera* – were also collected in Britain, but were less sought after by Roman customers, for they lacked the colour and brilliance of their Erythraean counterparts. It is nonetheless clear that certain quantities were produced and exported to the Mediterranean world.7

Medieval and modern documents mention pearls obtained in the Red Sea which were not as highly esteemed as those from the Gulf of Mannar and the Arab-Persian Gulf Sea (below, n. 33). They used to be gathered in the southern Red Sea, particularly around the Farasan islands and the Dahlak archipelago. In antiquity, however, Red Sea pearls do not seem to have been exported to the Roman world, for no extant document clearly points to this area – one must remember that *Arabikos kolpos / Arabicus Sinus* (Arabian Gulf) are the only terms unambiguously referring to this sea.8 Nonetheless, according to several scholars, two epigraphical sources from the Egyptian Eastern Desert support the view that pearlimg was carried out by the Roman administration in the northern Red Sea in the early 1st century AD. K. Schörle, in particular, has recently stated that these documents “mention the pearl industry, giving us crucial information about the origin of some pearls much closer to the Mediterranean, namely from within the Roman Empire.”9 Actually, such a statement seems to me rather implausible.

**Publius Iuventius Rufus, the (arkhi)metallarkhês**

The first inscription, dated to the 1st of *Payni* of the 40th year of Caesar Augustus (11 AD), was found in the Wadi Semna, a quarrying area lying north of the *Myos Hormos -Koptos* route. The text records the dedication of a shrine to Pan by a certain Publius Iuventius Agathopus, presenting himself as a freedman of Publius Iuventius Rufus, tribune of the *legio* III (*Cyrenaica*) and *eparkhos* (*praefectus*) of Bernikê (= Berenice). Iuventius Rufus also held the office of *arkhimetallarkhês* of “the mines of emerald, peridot, pearls and all the mines and all the quarries of Egypt”, meaning probably that he supervised the production activities. As for his freedman, he exercised the function of *epitropos* (*procurator*) of all mines and quarries in Egypt. The Greek text reads as follows:

> Ἐπὶ τοῦ Καίσαρα, Παύνιν α’ / ἀγάθη τύχης ἐπέπτε / ἰουεντίου Ῥοῦφου χιλάργου τῆς τερπανῆς λιγγόθον(ος) καὶ ἐπάρχου Βερνίκης καὶ ἀρχιμεταλλάρχου / (5) τῆς ζιαράγδου καὶ βαζίου καὶ μαργαρίτου καὶ /πάντων τῶν μετάλλων τῆς Αἰγύπτου, ἀνθήκε/ ἐν τῷ Φαίματι ιερόν/ Παν θεόν μεγίστον / (10) καὶ αὐτῷ Πολλίου Ιουεντίου[1] Ἀγαθοπούλου ἀπελευθέρωσεν αὐτὸν καὶ ἐπιτρόπων καὶ προάποιητοκ καὶ εὐεργέτηθα/ πάντων τῶν μετάλλων τῆς Αἰγύπτου.10

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8 P. Schneider [n. 4].
The second inscription was engraved seven years after the previous one (18 AD), under the reign of Tiberius. It comes from a temple dedicated to the god Pan, located in the Wadi Hammamat, one of the many dry canyons stretching across the Eastern desert. Not only had mining and quarrying been continuously carried out in, or close to the Wadi Hammamat from Pharaonic times, but this wadi was also part of the road network connecting the Nile Valley with the Red Sea ports. Thus it was much used in the Early Roman Empire. The inscription again records a dedication by Publius Iuventius Agathopus, freedman of the same Publius Iuventius Rufus. The latter is, this time, referred to as the supervisor (metallarkhês) “of the mines of emeralds, peridots, pearls and of all the quarries of Egypt”.11

Ἐπὶ Τιβερίου (τ.Τιβερίου) Καίσαρος Σέβαστος, Ποπλίου/ Ιουντίου Ῥώφου μεταλάρχη (γ. μεταλάρχου) ζωράκτου καὶ βασίου καὶ μαρκαρίτου καὶ λατόμου12 πάντων τῆς Αἰγύπτου,. (5) Ποσπλίου/ Αγαθόπου/ Ἀγαθόπους/ ἀπελεύθερος/ αὐτοῦ καὶ/ κρονοτής / (10) πάντων./ ἔτους ε’/ Τιβερίου Καίσαρος Σέβαστος./ Φαώρι ε.’ 13

Little is known about the actual authority exercised by the arkhimetalarkhês and the metallarkhes over the quarries in the Eastern Egyptian desert. According to A. M. Hirt, there is “not any further attestation of these offices in papyrological et epigraphical documents”, so that we are not “able to delimit precisely the function of the office-holder”. This author assumes that the metallarkhês and arkhimetalarkhês may have been in charge of all mines and quarries in Egypt, before these were run by an imperial procurator (epitropos τῶν metallōn). He cautiously concludes that “from AD 10/11 to AD 18 the arkhimetalarkhos / metallarkhês P. Iuventius Rufus had at least the quarries at Wadi Hammamat and Mons Ophiates under his control and delegated supervisory tasks to his freedman P. Iuventius Agathopus. Whether Agathopus managed both quarries simultaneously or consecutively and whether or not his responsibilities included other quarries remains unknown.”14

In contrast, identifying the quarried materials does not give rise to particular difficulties, at least for the first two in the list. The one called smaragdos / emerald – a green variety of beryl – was mined at Mons Smaragdus, which, according to A. M. Hirt, is probably to be located in the area of Wadi Gemal, Wadi Nuqrus, Wadi Sikait, Gebel Zabara, and Gebel Umm Kabu15. Some archaeological remains in these sites suggest mining activities going back to the Roman era, if not the Ptolemaic period. As regards the so-called bazios, the name actually refers to the topazios – peridot. This semi-precious stone was obtained from a small island lying about 50 km southeast of Berenikê called Topazos (today’s Jazīrat Zabarjad).16

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11 K. Schörle [n. 9], p. 47.
13 OGIS II 660 = SB V 8850 = SEG 27,1112 = A. Bernand. De Koptos à Kosseir, Leiden, 1972, n° 41. Translated into French by Fr. Kayser, “Nouveaux textes du Ouadi Hammamat”, ZPE 98 (1993) 111-156, p. 112, as follows : "Sous Tibère César Auguste, Publius Iuventius Rufus était directeur des mines d'émeraude, de topaze et de perles ainsi que de toutes les carrières d'Egypte, Publius Iuventius Agathopus, son affranchi et administrateur général, l'an 5 de Tibère César Auguste, le 5 Phaôphi." Several prosyncema are displayed under the text. For another dedication to Pan by P. Iuventius Agathopus, see Bernand, n° 39.
14 A. M. Hirt [n. 12], p.109-110. For a different view see Fr. Kayser [n. 13], p. 113, suggesting that, as an epitropos ("procureur des mines et carrières d'Egypte"), Agathopus was in charge of the “gestion financière”, while Iuventius Rufus, "qui supervisait le tout, étant également chargé de l'encadrement militaire." Also see G. Messeri [n. 10]. For additional information see Th. Kruse, “Urkundenerlebnat 2008 (1. Teil)”, APF 56 (2010) 178-179.
15 Strab. 17, 1, 45; A. M. Hirt [n. 12], p. 110.
16 Bazion is a variant of topazion (Hesychius, s.v. rasion: παζίου, ὁ και τοπαζίου, λίθος πολύτιμος). M. G. Raschke, “New studies in Roman commerce with the East”, ANRW 9/2 I (1978) p.893-894, n.963 mentions a Coptic document in which the word BACION points to topaz. See also A. Bernand [13], p. 86. The Bazioon akron was situated close to Berenice (Prot. Geogr. 4, 5, 8). It was perhaps connected to the Topazos Island, hence its name, as J. Desanges suggests (Pline l’Ancien, Histoire naturelle (livre 6-4e partie). L’Asie africaine sauf l’Égypte. Les dimensions et les climats du monde habité, édité,
Juventius Rufus, the supervisor of pearl fisheries

The third product to appear in both inscriptions poses, however, a tricky problem. There is no doubt that besides several alternative designations, such as unio, pinikon etc., pearls obtained from Pinctada spp and Pteria spp – and even fresh-water pearls – were commonly designated under the name margaritês (Greek) and margarita (Latin), which leads to the conclusion that Juventius Rufus was responsible for pearl-fisheries. Such a statement, however, is seriously at odds with both documents: not only do they unambiguously present him as a metallarkhês / arkhimetallarkhês, but they also say that he was in charge of all mines / metalla – first inscription – and quarries / latoma – second inscription – in Egypt. Even if pearls were commonly regarded as lithoi – stones – or gemmae – gemstones – by Greeks and Romans, they were completely distinct from these, because of their unique origin, for pearls are the only “gemstones” to be produced by an animal in the deep sea. More importantly, since pearling requires divers, this activity has obviously nothing in common with mining and quarrying.

Curiously, some scholars did not worry about this issue. For instance, R. Cagnat, apparently ignoring the usual, if not normal, meaning of margaritês, states that this word applied to various kinds of precious stones. Others, interpreting the inscriptions in a very different way, avoided the question. K. Fitzler, in particular, took the view that Zmaragdou, Basiou and Margaritou represented place names. Yet he failed to identify the third one: “Die Brüche des Margarites sind sonst nicht bekannt.” Earlier Letronne and Dubois suggested the possibility of three personal names, an idea which Dittenberger and Fitzler were to reject. These interpretations were later challenged by A. L. Tregenza, who, going more or less back to Cagnat’s opinion, concluded that the two inscriptions do not “mention place names but rather types of mines”. In a recent article, however, J. Ogden, a historian specializing in ancient jewellery alternatively suggested that, besides running emerald and topaz quarries, Juventius Rufus supervised pearl import. This solution, actually, brings more obscurity than any other and subsequently must be ignored: as K. Schörle rightly points out, why would pearls have been singled out when many other kinds of mineral commodities were imported via the Red Sea route, such as lapis-lazuli, diamonds, beryls etc.?

To the best of my knowledge, it is currently admitted by almost all scholars, despite the oddness of such an interpretation, that Juventius Rufus held a twofold office: he supervised, on the one hand, the extraction of emerald and topaz, on the other, the fishing of pearls in the northern Red Sea. A. Bernard, far from seeing anything abnormal, argues that “la mention de μαργαρίτης est normale, car les pécheurs de perles de la mer Rouge sont connus dès l’Antiquité, et les perles servent aux mêmes usages de bijouterie que les pierres

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17 See, e.g., Amm. Marc. 23, 6, 85.
20 Letronne and Dubois quoted by A. Bernard [n. 13], p. 85-86; W. Dittenberger, OGIS II 660, n. 4; K. Fitzler [n. 19], p. 422.
21 M. G. Raschke [n. 16], p. 893, n. 963, quoting L. A. Tregenza, “The curator inscription and other recently found fragments from Wadi Semna”, Bulletin of the Faculty of Arts, University of Egypt, 13/2 (1951) 39-52, p. 42-43.
22 See, e.g., M. G. Raschke [loc cit. n. 21]; A. Bernard [n. 13], p. 86. See also above, n. 10; 13.
précieuses comme l’éméarade et la topaze.”

K. Schörle believes that pearls were gathered in the vicinity of Myos Hormos and Berenikê: she refers in particular to shell mounds located at the south-eastern tip of the lagoon forming the ancient port of Berenikê, which may contain shells of Pinctada margaritifera and Pinctada radiata, two species yielding excellent pearls – so far they have not been surveyed. Since Juventius Rufus was an official, supervising imperial mines and quarries, some scholars, going one step further, claim that pearling was controlled by the State. For instance, M. G. Raschke states that “imperial interest extended to the topaz quarries of St. John and the pearl fisheries on the Red Sea coast.”

With respect to the organizational process, they are reduced to tentative assumptions. M. G. Raschke draws a comparison with the fishing concessions along the Nile, which were purchased from the Roman administration. In addition he wonders whether “the pearl divers of the Red Sea coast were organized in the same manner as the shell fishermen of Miletus (OGIS 756).” On the basis of some papyrological evidence, showing that “fishermen’s activities were apparently tightly regulated”, K. Schörle assumes that, “given the worth of pearls”, the regulation of diving remained under the authority of the eparkhos.

With the phrase “worth of pearls” it is more or less suggested that by supplying the upper class citizens with a most wanted luxury, the State engaged in a profitable activity. In addition, K. Schörle connects the inscriptions with a set of epigraphical documents relating to the Calpurnii, a family involved in maritime trade whose name is attested in Puteoli, Naples and Rome. On the basis of some graffiti written by a certain Laudanes, a slave of Calpurnius Moschas, which was found at the Coptos-Berenice road, and several inscriptions mentioning margaritarii (pearl sellers) from the Via Sacra in Rome who bore the name Calpurnius, she believes that the Calpurnii were involved in the business – not the production – of (imperial) Red Sea pearls: “We can associate them with different phases of the niche pearl trade, a strategy referred to by economists as vertical integration.”

Objections
There are, however, two objections to the idea of Juventius Rufus being involved in pearling on behalf of the Roman state.

First, as I said above, no extant piece of evidence points to pearl fisheries in the northern Red Sea. Significantly, the Periplus of the Erythraean Sea, a valuable source as regards Indian Ocean commodities carried to the Mediterranean, ignores Red Sea pearls. When describing the sector lying between Berenikê and Ptolemais, the author just reports scattered tribes of Fish Eaters (Ichthyophagi) “living in mean huts built in narrow areas”.

23 A. Bernand [n. 14], p. 86. Also see W. Dittenberger [n. 20], n. 6; S. E. Sidebotham & alii [n. 10], p. 141.
24 K. Schörle [n. 9], p. 48. It is worth noting, however, that remains of Pinctada shells do not suffice to establish the existence of pearling. They may as well attest the presence of people eating shell-fish and fish (Ichthyophagi). As a matter of fact, Fish-Eaters occupied some part of the Egyptian Red Sea coast (see below, n. 32).
25 A. M. Hirt [n. 12], p. 106.
27 M. G. Raschke [n. 16], p 893-894, n. 963.
28 A permit given to Pakubis Ichthyophagos to move his ship from Myos Hormos to Philoteras.
29 K. Schörle [n. 9], p. 49. N.b.: Rufus was apparently no longer eparkhos in 18 AD. Yet he was still in charge of pearl fisheries.
30 Also K. Schörle [n. 9], p. 48
31 K. Schörle [n. 9], p. 51-52.
32 P. m. Rubr. 2 (transl. L. Casson).
he is well informed about the pearls produced in the Arab-Persian Gulf and in Taprobane (Sri Lanka, i.e. the Gulf of Mannar). Actually, we ought not to be surprised, given the poor quality of the Red Sea pearls, which hardly met the Mediterranean demand, since, as Pliny tells us, Roman consumers tended to prefer quality pearls. Subsequently one may wonder why the Roman administration would have engaged in pearling. Since excellent pearls were produced in great abundance in the Indian Ocean, and were easily brought into the Mediterranean world, why bother gathering low quality pearls? In terms of costs and benefits, levying taxes on imported pearls was a far more lucrative option. Interestingly Strabo praises the Roman power in Egypt for adopting such a policy: “In earlier times [i.e. under the rule of Ptolemy Auletes], at least, not so many as twenty vessels would dare to traverse the Arabian Gulf far enough to get a peep outside the straits, but at the present time even large fleets are despatched as far as India and the extremities of Aethiopia, from which the most valuable cargoes (πολυτιμώτατος φόρτος) are brought to Egypt, and thence sent forth again to the other regions; so that double duties (τέλη διπλάσια) are collected, on both imports and exports; and on goods that cost heavily the duty is also heavy (τὸν δὲ βαρύτιμον βαρέα καὶ τὰ τέλη).”

Secondly, and perhaps most importantly, both inscriptions unequivocally refer to quarries and mines, meaning that the material called margaritês/markeritês had to be extracted from the ground, as were emerald and topaz. This is the very reason why Rufus appears as a director / general director of mines and quarries. Thus the only way of solving the problem is to scrutinize the extant evidence and see if some kind of stone was given the name margaritês.

The so-called land-pearl (khersaios margaritês)
As far as I am aware, two authors report a type of stone, or gemstone, called khersaios margaritês, or ‘land-pearl’. The second century polygraph Aelianus provides the first mention, which appears at the end of a long account on marine pearls. In order to inform his reader fully, he gives a short account of the so-called ‘land-pearl’, though he does not seem to be widely informed on this material: “The land-pearl of India is said not to have an independent origin (φύσιν οἱδὰν) but to be generated not from the ice formed by frost but from excavated rock-crystal (ἀλλὰ ἀπογέννημαι εἴναι κρυστάλλου, οὐ τὸ δὲ τῶν παγετῶν συνισταμένου, ἀλλὰ τοῦ ὅρυκτοῦ).”

Next comes Origen’s interpretation of the Parable of the pear of great price (“The kingdom of Heaven is like a man that is a merchant seeking goodly pearls”): With the aim of enhancing his commentary with a solid body of knowledge – whose sources unfortunately cannot be traced –, he embarks on a thorough description of all kinds of pearls. At some point he writes: “We find then in those who write on the subject of stones, with regard to the nature of the pearl, that some pearls are found by land, and some in the sea (τῶν μαργαριτῶν οἱ μὲν εἰσὶ χερσαίοι, οἱ δὲ θαλάττιοι). The land pearls are produced among the Indians only, being fitted for seals and rings and necklaces (σφραγίς καὶ σφενδόνας καὶ ὅρμοις); and the sea pearls, which are superior, are found among the same Indians, the best being produced in the Erythraean Sea [above, n. 6].”

33 We hear from a number of modern sources of pearling in the Red Sea. Red Sea pearls, however, suffered from the comparison with those collected in the Arab-Persian Gulf and the Gulf of Mannar (see, e.g., R. A. Donkin [n. 26], p.120).
34 Strab. 17, 1, 13 (translated by H. L. Jones). Compare with Strab. 2, 5, 12; 4, 5, 3.
35 Ael. NA 15, 8.
36 NT, Matth. 13, 45.
37 Orig., Commentarium in Evangelium Matthaei, 10, 7 (= P.G. 13, 853b).
This name *khersaios margaritês* seems to have no Latin counterpart. In particular, Pliny the Elder, whose exhaustive account on pearls was unequalled in antiquity, is surprisingly unaware of the land-pearl. This may support the conclusion that such a designation was probably used in the Greek speaking part of the Roman Empire, if not in a limited area and for a limited time. There is not much of a surprise, for, according to Pliny, “depending on the varying number of the spots and inequalities on their surface, depending on the numerous intersections of lines and their multiplied tints and shades, the names of precious stones are subject to repeated changes.”

That said, what are the characteristics of the land-pearl?

This stone, Aelianus says, does not have an “independent origin”, or, to translate more literally, does not have a nature of its own. This elusive phrase means in all likelihood that contrary to the sea-pearl – a unique and exceptional creation of Nature –, the land-pearl cannot be regarded as a *sui generis* material: the latter, indeed, is just one of the numerous kinds of stone which are quarried throughout the world. Then Aelianus goes on to describe the main features of the land-pearl, defined as an unearthed crystal rock which is not formed by frost. This puzzling statement seems to be based on an ancient distinction between two types of crystal involving the way they are formed.

Some kinds of rock-crystals result from the action of cold, as, for instance Pliny claims: “It is a diametrically opposite cause to this that produces crystal, a substance which assumes a concrete form from excessive congelation. At all events, crystal is only to be found in places where the winter snow freezes with the greatest intensity; and it is from the certainty that it is a kind of ice, that it has received the name which it bears in Greek *κρύος*”. Other varieties, however, are generated from heat, according to Diodorus of Sicily, whose ideas may derive from Poseidonios: “For the rock-crystals, so we are informed, are composed of pure water which has been hardened, not by the action of cold, but by the influence of a divine fire, and for this reason they are never subject to corruption.”

The land-pearl was perhaps believed to be a concretion created by solar energy. At least Aelianus makes it clear that it was a kind of whitish and translucent gemstone extracted from the earth, which had been given the name land-pearl, probably because it bore some resemblance to sea-pearl in terms of colour. Some more valuable details are provided by Origen. This material was used to make seals, rings and necklaces, meaning that it tolerated polishing, engraving and drilling, like most gemstones – and unlike sea-pearls, which are just drilled. Finally it is stated that this rock-crystal was obtained in India. However accurate this data may appear, it is actually less than helpful, for, at the time when Aelianus and Origen composed their books, a number of regions lying on, or close to the Indian Ocean and the Red Sea (Axum, Saba, Ḣimyar, Nubia, Thebaid) could be called India.

**Back to Juventius Rufus**

Though limited, this amount of evidence suggests that as a(n) (*arkhi*)metallarkhês Juventius Rufus supervised the exploitation of three types of gemstones, respectively emeralds (in the Eastern Desert), topaz (on Jazîrat Zabarjad) and the rock-crystals named “land-pearls”. Now

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38 Plin. *HN* 37, 195.
40 Plin. *HN* 37, 23.
41 Diod. Sic. 2. 52. 2. Two varieties of such rock-crystals are listed, namely emeralds (*smaragdoi*) and beryls (*berylla*).
the question remains where this “land-pearl” was quarried. It seems, however, that Pliny can guide us to a plausible location: “According to Juba, there is crystal in a certain island of the 
*mare Rubrum* [here, the modern Red Sea], opposite the coast of Arabia (*ante Arabiam sita*), called *Necro*; as, also, in another neighbouring island which produces the precious stone known as the *topazus*, where a block of crystal was extracted, he says, by Pythagoras, the prefect of King Ptolemy, no less than a cubit in length.”  

This piece of information was taken from Juba’s *Arabika*, published in the late 1st century BC. According to this authority, Jazīrat Zabarjad yielded not only the precious topaz after which it was named in antiquity, but also another kind of crystal, which may well be identified with the so-called land-pearl. Now, of course, a strong objection offers itself, in that the land-pearl is reported to have been extracted in India. However, as I said above, the name *India* often encompassed the Red Sea area in Aelianus and Origen’s time, if not earlier: in particular, in the late-first century BC, the cape of ras Benas, lying not far from *Berenikê* and *Topazus* Island, known as *Lepte Acra*, or *Drepanum*, was alternatively and significantly called the “Indians’ cape”.

Interestingly also the 6th century lexicographer Stephanus of Byzantium, maybe drawing on the first century BC polymath Alexander Polyhistor, states that Topazus is an Indian island (*Τόπαζος, νῆσος Ἰνδική*). Thus I confidently come to the conclusion that the so-called *margaritês* was a kind of rock-crystal extracted in Jazīrat Zabarjad, and that in the early 1st century AD Iuventius Rufus the *metallarkhês* supervised this quarrying activity.

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43 Plin. *HN* 6, 175 (*A promuntorio Indorum quod vocetur Lepte Acra, ab aliis Drepanum ...*).