THE CITY OF THE BRANCHIDAE AND THE QUESTION OF GREEK CONTRIBUTION TO THE INTELLECTUAL HISTORY OF INDIA AND CHINA

One day in the year 329 BC the army of Alexander left the region of Bactrae (modern northern Afghanistan), marched through the desert and crossed the Oxus (Amu Darya). While it kept going north towards Maracanda (Samarcand), an accident took place about which Quintus Curtius Rufus tells us a fascinating and tragic story (7. 5. 28–35).

> They arrived at a little town. It was inhabited by the Branchidae; they had in former days migrated from Miletus by order of Xerxes, when he was returning from Greece, and had settled in that place, because to gratify Xerxes they had violated the temple which is called the Didymeon. They had not ceased to follow the customs of their native land, but they were already bilingual, having gradually degenerated from their original language through the influence of a foreign tongue. Therefore they received Alexander with great joy and surrendered their city and themselves. He ordered the Milesians who were serving with him to be called together. They cherished hatred of long standing against the race of the Branchidae. Therefore the king allowed to those who had been betrayed free discretion as to the Branchidae, whether they preferred to remember the injury or their common origin. Then, since their opinions varied, he made known to them that he himself would consider what was the best to be done. On the following day when the Branchidae met him, he ordered them to come along with him, and when they reached the city, he himself entered the gate with a light-armed company; the phalanx he ordered to surround the walls of the town and at a given signal to pillage the city, which was a haunt of traitors, and to kill the inhabitants to a man. The unarmed wretches were butchered everywhere, and the cruelty could not be checked either by community of language or by the draped olive branches and prayers of the suppliants. At last, in order that the walls might be thrown down, their foundations were undermined, so that no vestige of the city might survive. As for their woods also and their sacred groves, they not only cut them down, but even pulled out the stumps, to the end that, since even the roots were burned out, nothing but a desert waste and sterile ground might be left. If this had been designed against the actual authors of the treason, it would seem to have been a just vengeance and not cruelty; as it was, their descendants expiated the guilt of their forefathers, although they themselves had never seen Miletus, and so could not have betrayed it to Xerxes (transl. by John C. Rolfe in the Loeb series).

We have thus a detailed account. The scene of the supplication follows the cliché of the genre, but all other details are specific. The core of the story is also reported by Diodorus (17, epit.), Strabo (11. 11. 4; 14. 1. 5), Plutarch (*Mor.* 557 b), and in the Suda (s. v. Βραγχίδαι). It is worth noting that Strabo mentions the story without any sign of disapproval and that he cites Callisthenes, the earliest historian of Alexander, as his source. It follows that the initial version of the story was apologetic,[1] which strongly corroborates the impression that neither meeting the Branchidae nor the subsequent massacre were invented. However, the historicity of the story was repeatedly denied.

The most influential effort to discredit it was undertaken by W. W. Tarn. He advanced essentially two arguments: 1) The story is not mentioned in Arrian, which means that it was not mentioned by Ptolemy; 2) Xerxes needed no betrayal in order to obtain the treasures of the temple; moreover, Darius had already sacked the temple; hence the story of the Branchidae's betrayal is fictional; hence "Alexander never met any Branchidae".[2]

To this one may reply. 1) The silence of Ptolemy (itself an inference, though a plausible one) proves nothing since the care of Alexander's reputation is a likely motif for omitting the story. Besides, Ptolemy seems to have been absent at the massacre; he was pursuing Bessus (Arr. 3. 29. 7). 2) Even if the betrayal of the Branchidae was fictional, it does not follow that Alexander did not meet any of them beyond the Oxus.

And how could such an amazing meeting have been invented? Tarn offers the following explanation: Callisthenes narrates that Apollo deserted the oracle at Didyma because in Xerxes' time the Branchidae medised and sacked the temple and that the sacred spring reappeared when Alexander came to the place; moreover, the oracle hailed Alexander as the son of Zeus and foretold the battle of Arbella and the death of Darius (Strab. 17. 1. 43). According to Tarn, "it was from this invention that there arose the story of massacre of the Branchidae … The Branchidae had wronged Apollo, and Apollo had done Alexander a good turn … clearly therefore Alexander must do something for Apollo". This explanation neither accounts for the details of the story nor is plausible in itself, for exterminating the priests was by no means an obvious way to please a god. If there was any connection between the two Callisthenes' stories about the Branchidae, it must have been reversed: in order to soften one's embarrassment about the massacre, it was shown that the god no longer needed the service of the Branchidae and that he was exceptionally favorable to Alexander.

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[1] It was pointed out already by E. Meyer, *Kleine Schriften* (Halle 1910) 286, n. 1.

[2] W.W. Tarn, "The Massacre of the Branchidae", *CR* 36 (1922) 63–66; idem, *Alexander the Great* (Cambridge 1950) 2, 272–275.

Admittedly Tarn is right that Xerxes needed no 'betrayal' of the Branchidae and that the temple at Didyma was plundered and burnt in the time of Darius, when the Persians were suppressing the Ionian revolt (Hdt. 6. 19). But this is of no help for the view defended by him. The attitude of the Branchidae towards the revolt follows from the fact that the treasures of the temple were *not* used to finance it. It need not mean the betrayal in the strict sense, but we may safely infer that many Milesians felt that way about it. Herodotus (5. 36) presents Hecataeus maintaining at the start of the revolt that the Milesians can succeed only through becoming the masters of the sea, for which he considers necessary to borrow the treasures of the temple in Branchidae (another name for Didyma). Herodotus specifies that Hecataeus' proposal was denied. It is clear that the position of the Branchidae on this issue was essential, and we may easily imagine what people said about them after the sea-fight had been lost.

Archaeology seems to confirm that the temple was burned.[3] The generals of Darius apparently did not care about pleasing the Branchidae. One thinks, however, that Darius treated the more or less loyal priests of Didyma better than the rebelling citizens of Miletus, and that in 494 BC they were not, along with those, brought as captives to the Persian Gulf (Hdt. 6. 20). Besides, plundering the temple and the siege of Miletus were two events separated in time, as Miletus and Didyma were separated in space. Hence, in no case is one justified to simply assume the common fate for the inhabitants of both places. It is quite likely, further, that after the Persian defeat at Mycale (rather than in the previous year, when Xerxes "was returning from Greece") the Branchidae chose to come into exile. One may recall that the Ionian revolt was at the same time a democratic revolution. The Branchidae were hardly better democrats than patriots, so they might have had more than one reason to feel insecure under the new circumstances. Xerxes accepted them as refugees and offered a frontier area for the settlement. Whether or not Apollo deserted the place, the Branchidae did. It is clearly implied in the Delphic oracle cited in Hdt. 6. 19: "the other people will take care of our temple". The Branchidae are not mentioned since in connection with political events and in the authors later than Herodotus the place is referred to as Didyma rather than Branchidae.[4]

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[3] See: R. Naumann, K. Tuchelt, "Die Ausgrabungen im Sьdwesten des Tempels von Didyma 1962", *IM* 13/14 (1963/1964) 15–62, esp. 29 f., 52–56.

[4] The sacred place was not completely abandoned after the destruction of the temple – see: W. Hahland, "Didyma im 5. Jahrhundert v. Chr.", *JDAI* 79 (1964) 142–240; J. F. Fontenrose, *Didyma: Apollo's Oracle, Cult, and Companions* (Berkeley – Los Angeles 1988) 14. From a long inscription found in Delphinion we know about periodic sacred processions from Miletus to Didyma; the Branchidae are not mentioned – they no longer played any role in worship. – G. Kawerau, A. Rehm, *Das Delphinion in Milet = Milet* [Bd. I] Hf. 3. N 133 (Berlin 1914) 277–84.

We may thus conclude that the story of the exile of the Branchidae as reported by our sources is in the main entirely plausible. The only detail that probably was constructed by the historians of Alexander is the close cooperation of the Branchidae with *Xerxes*. But the reason for that is clear. "Alexander never made any claim to avenge the Ionian Revolt. The object of his retaliation was not Darius … but Xerxes and the attempt to conquer mainland Greece. So Callisthenes not merely said that the Branchidae had been sacrilegious traitors, but also gave their treason a different historical context and one more appropriate to Alexander's propaganda".[5] The betrayal of the Branchidae might be exaggerated, but there is not the slightest reason to deny the historicity of Alexander's meeting with their descendants beyond the Oxus.

Now we turn to the massacre. As reported by the ancients, it appears rather absurd. Imagine: Alexander is pursuing Bessus, his army marches through the desert, crosses with great difficulty the Oxus, and enters a territory to be conquered; suddenly they meet friendly Greek speaking people – just to be ordered to kill all of them to a man. I feel that many scholars adopted a skeptical attitude to the whole story because of the strangeness of such a course of events rather than for any other reason.

The challenge of accounting for the motives for the massacre was taken by H. W. Parke.[6] His suggestions were favourably received in the recent scholarly literature,[7] but I find it difficult to accept any of them. Parke begins with "the motive of demonstrating a Panhellenic crusade" – by killing to a man the only Greeks found in a distant and hostile country? His second motive is the unwillingness of the Milesians to see the Branchidae back in Didyma. But one has just to recall who Alexander was and what he achieved in order to realize that Alexander would never allow himself to be influenced by the Milesians while making an important decision.[8] Parke's third motive is that Alexander used an opportunity "to display that absolute power over the Asiatic subjects which was inherent in his new assertion of his position as the successor of Darius" – by killing the Greeks rather than Asians? Finally, Parke suggests that the massacre of the Branchidae "fits into the pattern of tragic episodes which ran from the execution of Philotas and the assassination of Parmenion through the murder of Cleitus to the Pages'

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[5] H. W. Parke, "The Massacre of the Branchidae", *JHS* 105 (1985) 59–68, esp. 66.

[6] *Ibid.*, 66–68.

[7] F. L. Holt, *Alexander the Great and Bactria* (Leiden etc. 1988) 75; И. Р. Пичикян, "Город Бранхидов" (I. R. Pichikyan, "The City of the Branchidae"), *VDI* 1991: 2, 168–81; J. M. O'Brien, *Alexander the Great: The Invisible Enemy* (London 1992) 130.

[8] For a similar reason I cannot accept the suggestion by A. B. Bosworth, *Conquest and Empire: The Reign of Alexander the Great* (Cambridge 1988) 108 f., according to which Alexander retrospectively justified the savagery of his troops.

Conspiracy". In fact it does not, for the Branchidae neither saved nor blamed Alexander. They did nothing to him at all; in terms of psychology, the situation was essentially different.

The failure to understand the motives for the massacre does not discredit the story itself. We are too far from the event and we know too little. In general, we probably have to think about a commander's concern rather than anything else. If I may venture a suggestion, the clue provides the final detail in Curtius' account: even the sacred groves were cut down. Alexander needed wood. He had just crossed the Oxus, and this took five days because no wood was available in the area, so neither bridge nor rafts could be built (Curt. 7. 5. 16–18; Arr. 3. 29. 4). We are told that this situation made Alexander nervous, which is easy to understand inasmuch as his army was dangerously fragmented. And if the circumstances forced Alexander to withdraw and undertake crossing back, the lack of wood would be most unwelcome. Since Curtius' account implies that the city of the Branchidae was located not far from the place of crossing, it is even possible that Alexander reached the city while a part of his army had yet to cross the river; then the wood cut at the sacred grove was immediately used to build rafts. Whatever the particular purpose, cutting a sacred grove was a sacrilege; it could be hardly committed without a pressing need. For the same reason it required a very strong justification. The whole career of Alexander shows that he was very conscious of what is nowadays called public relations. By this I mean not only his concern for posterity. Starting a campaign in a vaguely known and hostile country by offending a mighty god was fraught with creating panic among the soldiers as soon as they would face any misfortune. The only way of justifying the sacrilegious deed was to turn it into the avenging of another sacrilegious deed – *hierosylia* (Strab. 14. 1. 5). The additional charge – the betrayal of the Greek cause – was not strictly pertinent, but emotionally was very efficient.

The Branchidae died because Alexander had to secure his military success or, in more attractive terms, the safety of his army. In this scenario, the story is no longer "of considerable importance for Alexander's character" – as Tarn and many others assumed. It only shows Alexander as a military leader.

In the next generation, it was felt appropriate to compensate the wrong done by the army of Alexander to Apollo. Demodamas, a general of Seleucus and Antiochus, marked his successful advancement in the same area by setting up altars to Apollo Didymaeus (Plin. 6. 49; cf. Solin. 49. 5; Mart. Cap. 6. 692).[9]

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[9] Even if Demodamas was a Milesian (Steph. Byz. s. v. Ἄντισσα, but this can be an inference of an ancient scholar – cf. Athen. 682 d), his main concern must have been the god pertinent to the area of his campaign. There is a tiny possibility that some of the Branchidae survived the massacre. В. А. Лившиц, "Надписи из Дильберджина" (V. A. Livshiz,

It has been shown, I believe, that the existence of the city of the Branchidae is not to be doubted. This city was situated between the Amu Darya and Samarcand, which means that a Milesian colony with a number of educated people from the upper stratum existed during the century and a half (from 479 till 329 BC) almost next door to north-western India and practically on the future Silk Road. The colony was populated by people who likely knew something or much about the ideas and scientific achievement of Thales, Anaximander, Anaximenes, Hecataeus, Pythagoras, Hippasus, Parmenides, Heraclitus and, perhaps, Leucippus; and who were capable of disseminating scientific knowledge, philosophical as well as religious ideas. I propose that they did so, that the Ionian impact upon the intellectual history of both India and China was significant and that the city of the Branchidae was the most likely link between the worlds of Greek and Eastern thought, between Ionia and China in particular. This subject seems to me appropriate for homage to Alexander Gavrilov, one of my teachers and a revered friend. However, a *festschrift* paper cannot be long, whereas a detailed exposition of my argument cannot be short. I am offering here a kind of summary of my study to draw attention to the issue that can be decided only by joint efforts of experts in various fields.[10]

The emergence of theoretical cosmology in sixth-century Ionia was due to a combination of particular circumstances.[11] It is not, therefore, a manifestation of bias to address the possibility of ultimately Greek inspiration while considering cosmological ideas attested outside the Greek world. I already had an occasion to argue for the Greek origins of the notion of the celestial sphere in China,[12] but that story apparently pertained to the late second century BC, when the Chinese established regular communications

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"Inscriptions from Dil'berdzhin"), in: *Drevnyaja Baktrija* (Moscow 1976) 163–69, esp. 165, n. 12 a, reads two inscriptions on amphoras found in Kushan context as Βρο/αχγιδ(ων?) and Βρο/αχγ(ιων), suggesting an echo of the Branchidae; P. Bernard, *Fouilles d'Aï Khanoum* IV (Paris 1985) 123–25 calls for caution.

[10] Various parts of my study were presented before the scholarly audiences at the Needham Research Institute (Cambridge), University of Trier, University College London, St Petersburg State University, and Bard College in 1995–2001.

[11] I presented my understanding of this process in three consecutive papers: "Thales and the Origin of Theoretical Reasoning", *Configurations* 1 (1993) 3, 387–414; "Thales's Prediction of a Solar Eclipse", *Journal for the History of Astronomy* 25 (1994), 275–288; "Фалес, солнечные затмения и возникновение науки в Ионии в начале VI в. до н. э." ("Thales' Explanation of Solar Eclipses and the Emergence of Theoretical Science in Early Sixth-Century Ionia"), *Hyperboreus* 2 (1996): 1, 47–124 [with a detailed English summary].

[12] "Греческое происхождение концепции небесной сферы в китайской космологии" ("Greek Origin of the Notion of the Celestial Sphere in Chinese Cosmology"), in: *ΣΥσσιτια. In memoriam Ju. V. Andrejev* (St Petersburg 2000) 174–184.

with Central Asia and when the city of the Branchidae no longer existed. However, Chinese accounts of the formation of the cosmos, its structure and functioning display a remarkable affinity with the world of Presocratic thought. The existence of a Milesian colony beyond the Oxus offers a natural explanation for this affinity.

According to a standard Chinese view, in the beginning there was formless medley. In the process of separation, the light and pure things formed Heaven, while the heavy and dark ones congealed, forming Earth.[13] This neatly corresponds to the most influential version of Presocratic cosmogonies that Aristotle traces back to Anaximander (540s BC).[14]

The role of opposites in early Presocratic thought was by no means confined to cosmogonical accounts. For instance, it strongly affected the Presocratic medicine. The doctrine of health as the balance or equality of the opposites powers, formulated by Alcmaeon c. 500 BC (B 4 DK), became a standard view in the Greek world. The *Zuozhuan* (last third of the fourth century BC) puts in the mouth of He, a physician from the westernmost Chinese kingdom Qin, essentially the same doctrine (Zhao 1).

Wang Chong (c. 27–97 AD) criticizes a theory which explains the change of the day and night as well as the seasons by alternating preponderance of Yin and Yang fluids or vapours (*Lung-Hêng*, ch. 20). This is exactly Heraclitus' theory of bright and dark exhalations. Significantly, Wang Chong is not aware of some details of the theory that he cites, and these details are connected with the growth of geographical knowledge in Heraclitus' time. According to Heraclitus, "exhalations arise from earth as well as from sea; those from earth are bright and pure, those from sea dark" (D. L. 8. 9, R. D. Hicks' translation, corrected). Heraclitus wrote several decades after Scylax of Caryanda had sailed the Indian Ocean (c. 516 BC). He knew that there was an immense body of water far in the south and thus had a good reason to think that on a winter day the sun makes its way exclusively or so above the sea, while in the summer it moves mostly above the dry land of India, Arabia and Ethiopia.

The Presocratics proceeded from the assumption that nothing comes out of nothing. This made them conclude that the totality of things was always present, and particular things either emerged from a common source (like Water, Air or the Boundless) or were (and are) formed by eternal constituents

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[13] *The Annals of Lü Buwei*, transl. by J. Knoblock and J. Riegel (Stanford 2000) 278 f. (13/I.1); J. S. Major, *Heaven and Earth in Early Han Thought. Chapters Three, Four, and Five of the Huainanzi* (Albany 1993) 62 (3:1); *Lung-Hêng: Philosophical Essays of Wang Ch'ung*, transl. by A. Forke (New York ²1962) 252. The cited works were composed c. 240 BC, c. 139 BC and c. 70 AD respectively.

[14] Aristot. *Phys*. 187 a 12; Anaximander A 12, Anaxagoras B 4 and 15, Archelaus A 4 DK; Diod. 1. 7.

(like four elements, the homoiomeres or atoms). It remained, however, unclear what could trigger the cosmogonical process and why it should have started at one particular moment rather than earlier or later. Both logic and traces of geological catastrophes suggested a plausible solution: a cycle of ever-recurring compositions and destructions of the world was introduced, clearly attested to already by Xenophanes (A 33 DK). Hippasus (c. 500 BC) is the earliest thinker cited for the assertion that "there is a definite time in which the change of the world takes place" (D. L. 8. 84; 18 A 1 DK). The idea was styled the Great Year, and Heraclitus is the earliest thinker cited for a certain length of the Great Year – 10 800 years. About two centuries later, Berosus, a Babylonian émigré, offered to the Greek public the version of the idea that became popular both inside and outside the Greek world. It involved the conjunction of the seven planets. One finds, however, a more primitive version in the *Zhou bi suan jing*, a Chinese treatise composed in Han times. Planets are not involved here, only lunisolar cycles and arithmology. We are told that in 31 920 years "all the reckonings of generation come to an end, and the myriad creatures return to their origin; [from this new origin,] Heaven creates the chronological reckoning [once more]."[15]

The *Zhou bi* is actually the most important text for our purpose. It presents a cosmological system in which the sun and the other celestial bodies rotate only above the earth; their setting and rising is nothing but an optical illusion caused by the distance (as we all know, the objects appear nearer to the horizon as they recede). The solar illumination extends only to a certain distance; when the sun is farther than that it is no longer visible. The same views are attested by Anaximenes (A 7 DK) and Xenophanes (A 41 a DK) of the late sixth century BC. The ones that follow are not clearly formulated in Greek and Latin doxography. Heaven and earth lie in two parallel planes. The (north) celestial pole is the centre of heaven. The daily path of the sun is a circle centred on the celestial pole. It is expanding during one half of a year and then contracting during the other. The radius of this circle at the winter solstice to the radius at the summer solstice is in a ratio of 2 : 1.

Such an amazing proportionality is supposed to have been revealed through the gnomon shadow measurements. One rule (hereafter cited as the shadow rule) is the basis of all calculations: for every 1000 *li* the shadow of an eight-*chi* gnomon diminishes or increases by one *cun*. Thus, if the length of the shadow at the summer solstice noon is 16 *cun*, this means that we are distant by 16 000 *li* from the point directly below the sun – the northern tropic.

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[15] C. Cullen, *Astronomy and Mathematics in Ancient China: The Zhou bi suan jing* (Cambridge 1996) 204.

With all qualifications in due course, the shadow rule was a remarkable empirical discovery. Its application in the *Zhou bi* displays, however, an extraordinary inaccuracy. "In fact a simple trigonometric calculation shows that a latitude change southwards of 0.68°, equivalent to about 75 km, would produce a reduction of summer solstice shadow from 1.6 *cun* to 1.5 *cun*. The distance involved is therefore something like 150 *li* rather than the 1000 *li* quoted".[16] This strongly suggests that the shadow rule was established somewhere outside of China and that, in the process of the transmission, the Chinese *li* was substituted for a foreign measure.

Measurements of the circumference of the earth belong among the glories of Greek science. All methods cited in the sources are based on measuring the distance between two sites on the same meridian. I do not see how the Greeks could measure distances of several hundred miles without resorting to the shadow rule.[17] The ancient authors never discuss how to determine the distance between two sites. They only discuss how to determine which part of the meridian would be the distance involved. Silence about technical matters is rather common for Greek scientific treatises. Besides, it was not attractive for a Greek scientist to refer to an empirical rule that could be not demonstrated.[18] Still we are told that Eratosthenes claimed to obtain the true distance between Rhodes and Alexandria "by means of the shadow-catching gnomon" (Strab. 2. 5. 24).

Evidence for an earlier epoch can be deduced from Herodotus. He gives the measurements of the north-south extension of Egypt, apparently cited from an Ionian authority (2. 7–9): 1500 *stadia* from the sea to Heliopolis, 4860 *stadia* from Heliopolis to Thebes, and 1800 *stadia* from Thebes to Elephantine. Let us suppose that these values represent distances between the latitudes of the places rather than real distances for a ship or traveller. Then the number of meters pro 1 *stadion* for all three distances are 99,8 m, 100,3 m, and 98,5 m respectively. No land survey in the Nile valley could result in such a consistency, but the shadow rule would. To be sure, a *stadion* c. 100 m is unusually short. But measurements of Egypt in Herodotus involve also an unusual ratio between Greek *stadia* and Egyptian *schoenus*: 60 to 1 instead of the standard 30 (or 32) to 1. Both short *stadion*

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[16] *Ibid*. 113 f. and n. 137.

[17] The absolute majority of those who discussed the problem were simply not aware of the shadow rule.

[18] The shadow rule works only within a certain interval. For instance, c. 500 BC the length of the shadow cast by a one-meter gnomon at the summer solstice noon would increase by 18 mm for one degree from 24 to 37 N, but by 21 around 48 N and by 27 around 60 N. I am grateful to Michael Hoskin and Vladimir Tarantaev for clarifying to me relevant mathematical matters.

and unusual ratio reappear in the contexts relevant to Miletus and the Milesians. Pliny (*NH* 5. 112) cites 180 *stadia* as the distance between Miletus and Didyma for the actual length of the road c. 18 km.[19] Classical sources treat Egyptian *schoenus* and Persian *parasang* as measures of equal length. The unusual ratio of 60 *stadia* to 1 *parasang* (= 1 *schoenus*) emerges in connection with Patroclus' account of the region beyond the Oxus (Strab. 11. 11. 5); one supposes that the local Greek informants of Patroclus preserved the antiquated Ionian ratio that had been brought to the region by the Branchidae.

More than that, the gnomon appears in the classical sources as a label of scientific activity of the Milesian Anaximander. Was it not because he could use the shadow rule that he dared to draw the first map of the world? One testimony presents his successor Anaximenes (who taught the same doctrines as one finds in the *Zhou bi*) initiating a systematic observation of gnomon shadow length at various latitudes (Plin. *NH* 2. 187). Step by step, one arrives at the conclusion that the Ionians were both aware of the shadow rule and had appropriate, relatively short measure.[20]

The cosmography of the *Zhou bi* is based on the assumptions that heaven and earth lie in two parallel planes and that the sun is somehow attached to heaven. Although the shadow rule is formulated in the *Zhou bi*, correctly, with the reference to the summer solstice noon only, it is mistakenly used to determine the distance to the subsolar place at the winter solstice noon as well. Moreover, with a rope substituting for the shadow, it is also employed to establish the distance to the subpolar point. Three measurements reveal the amazing cosmic proportionality already mentioned: the radius of the circle described by the sun round the celestial pole at the winter solstice is in a ratio of 2 : 1 to the radius at the summer solstice. But this result is achieved in the *Zhou bi* by means of falsifying the measurement of the subpolar distance. One concludes that the person who did it already knew that the proportionality was a part of the picture. There is quite a narrow strip in the northern hemisphere where the proportionality in question could be suggested on the basis of actual observation. It lies approximately between 37°20′ and 37°40′. One finds Didyma just above the

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[19] So M. Mayer, "Miletus", *RE* XV, 2 (1932) 1650; on other reconstruction, a few kilometres longer. The suggested correction to 80 *stadia* is untenable since the usage of Pliny shows that he would say 10 miles instead of 80 *stadia*. 400 000 *stadia* for the circumference of the earth (Aristot. *Cael*. 298 a 16) and 11 100 *stadia* for the length of the Black Sea (Hdt. 4. 86) are likely expressed in terms of short Ionian *stadion*.

[20] The measurements of Egypt cited by Herodotus were apparently taken with a six-feet gnomon. The traces of the measurements with an eight-feet gnomon can be also discerned in the classical sources.

southern border of this strip, the home of Pythagoras near its northern limit and Miletus (37°31´) in the middle of it!

A few decades after founding the city of the Branchidae, Oenopides of Chios demonstrated that the sun moves in a plane which is not parallel to the surface of the earth. This made obvious that there could be no common shadow rule for the summer and winter solstices. Rapid development of Greek astronomy made obsolete any system with celestial bodies rotating above the earth. But the isolation, complete or not, of a small Ionian community beyond the Oxus provided favourable conditions for the old ideas to have been preserved. And not only isolation. In Curtius' detailed narrative, the meeting with the Branchidae immediately followed the crossing of the Oxus by Alexander's army. All plausible places for the crossing, from Termez in the east to Kelif in the west, lie between approximately 37°10´ and 37°20´. The most natural conclusion is that the city of the Branchidae was located more or less on the same latitude as Miletus.

Early contacts between China and the region to which the city of the Branchidae belonged are documented in the so-called Sogdian letters. Though written in the early fourth century AD, they still refer to China as Qin and the Chinese capital as Xianyang, thus reflecting the situation earlier than 200 BC.[21] There are several facts the combination of which suggests that the contacts between Sogdiana and Qin were established, or became relatively important, in the middle of the fourth century BC. The builders of the new Qin capital, Xianyang (founded in 350 BC) seem to have imitated the characteristic features of Ecbatanae,[22] one of the major Iranian cities. The administrative reform (350 BC) and that of taxation (348 BC), though not very specific, are suspiciously similar to the ways of ruling adopted by the Achaemenids. Metallic coins were introduced about the same time (338 BC). As far as I can see, the chronology of Chinese intellectual history agrees with such a scenario too.

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[21] W. B. Henning, "The Date of the Sogdian Ancient Letters", *Bulletin of the School of Oriental Studies* 12 (1948) 601–615, esp. 608 (I am grateful to V. A. Livshiz for the reference to this paper). E. B. Brooks, "Textual Evidence for 04c Sino-Bactrian Contact", in: *The Bronze Age and Early Iron Age Peoples of Eastern Central Asia*, ed. by V. H. Mair, 2 (Philadelphia 1998) 716–726 admits the plausibility of intellectual influence upon China from Hellenised Bactria soon after the expedition of Alexander.

[22] The excavation of the palace site reveals that "the architecture was originally built on very high and large *hangtu* platforms … The murals were polychromic, including such colors as black, brown, yellow, dark red, light red, state blue, and state green" – Hsüeh-ch'in Li, *Eastern Zhou and Qin Civilizations* (New Haven 1985) 232; compare the description of Ecbatanae in Hdt. 1. 98 and Polyb. 10. 25.

A few comments are warranted regarding the presence of a Milesian colony close to India. This fact was emphasized by Samuel Beal. He noted in particular that Maya's giving birth to the Buddha while holding a mighty tree corresponds exactly to Greek accounts of Leto giving birth to Apollo.[23] Although the Homeric hymn to Apollo antedates the emergence of the Buddhism, this similarity can be interpreted in different ways. In general, it is not easy to specify the role of the city of the Branchidae in the intellectual contacts with India since so many Greeks and Indians were subjects to Persian kings and could meet on various occasions. But one point is to be suggested here. The notion of Brahman in the *Upanishads* and that of Tao (as in the *Tao Te Ching* 4; 14; 25; 34; 42 and elsewhere) bear striking similarity to the Milesian notion of Arche, in Anaximander's version in particular. Milesian inspiration for the subsequent highly original developments of these notions seems to me likely, but I have no room here to discuss my contention.

To sum up, the existence of a Milesian colony beyond the Oxus between 479 and 329 BC (or so) is doubtless real. The possibility of radiating Ionian ideas from this centre is also quite real. The pursuit of an archaeological discovery of the city of the Branchidae is very much worth the effort.

Dmitri Panchenko
*Bibliotheca Classica Petropolitana and
Smolny College*

Появление в Индии и Китае представлений, идентичных или близких представлениям досократиков, по-видимому, объясняется распространением идей, ставшим возможным благодаря существованию (479–329 гг. до н. э.) на правом берегу Амударьи города Бранхидов.

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[23] S. Beal, "The Branchidae", *The Indian Antiquary* 1880, 68–71.