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NOTES AND INTERPRETATION ON THE 'THRACIAN STONE' IN ANCIENT SOURCES

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ABSTRACT. Some names of stones have been mentioned in ancient sources, such as the 'Thracia stone' or 'spinus' ('spinos'), which are impossible to be determinated from their descriptions to which mineral species or rock they should be referred. Beside the interpretation of the 'Thracian stone' in ancient Greek and Roman sources as some sort of inflammable raw material (coal, jet etc.), a text from Pliny's '*Natural History*' points out to another interpretation related to green stones (minerals, rocks) including heliotrope. This green variety of jasper (jasperoid) with red spots has been used on the Balkans since the Chalcolithic period, and in the Eastern Rhodopes mountain region on the territory of Bulgaria some artifacts made of this local prestigeos gemmological material have been found, which have been traded in different directions.

БЕЛЕЖКИ И ИНТЕРПРЕТАЦИЯ ВЪРХУ "ТРАКИЙСКИЯ КАМЪК" ПО АНТИЧНИ ИЗВОРИ

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РЕЗЮМЕ. Някои названия на камъни са били отбелязани в антични извори като "Тракийски камък" или "спинос", за които е невъзможно да се даде характеристика от техните описания за даден минерален вид или скала. Освен интерпретацията на "камъка от Тракия" от древногръцките и римските извори като някакъв вид запалимо природно вещество (въглища, гагат и др.) един текст от "Естествената история" на Плиний Стари дава възможност за друга интерпретация, свързана със зелени минерали или скали, включваща и хелиотроп. Тази зелена разновидност на ясписа (ясписоида) с червени петна е била използвана на Балканите още от халколитната епоха, като на територията на България в района на Източните Родопи са намерени артефакти от този местен престижен гемологичен материал, с който се е търгувало в различни посоки.

Introduction

The exact meaning of the 'Thracian stone' or stone from Thrace listed in some ancient sources is not known and has been a subject of different interpretations. Among the few Thracian words to be interpreted, 'stone' has the root *asa(s)* or *as(a)m* in the sense of 'stony' (compare the Old Indian *as'man* for stone, heaven; Avestian *asman*- 'the same' or Pelasgian *asáminthos* 'stone'). Sabazios is a Thracian deity, first identified with 'stone'. The 'Thracian stone' has been mentioned in the works of a lot of ancient authors as Simplicius (VI c. B.C.), Pseudo-Aristotle (III c. B.C.), Nicander (II c. B.C), Dioscorides (I c. B.C.), Gaius Plinius Secundus**,** better known as Pliny the Elder (23-79), Galen (c. 129-199) and Simplicius (V-VI c.).

The Greek sources

Pseudo-Aristotle (an unknown Greek author from about III c. B.C.) in his famous paradoxographical work *'De auscultationibus mirabilibus'* gives the following probably earliest reference to the stone from Thrace: "In Bytinia in Thrace in a shaft a mineral has been found called 'spinos', from which fire appears" (Pseudo-Aristotelis, 1987, p. 250, 832b, 33). He continues further on with the descriptions of the properties of the stone: "In Thrace, as they say, there is a stone, called 'spinos', if splitted and pieced together again it glows, as if coal; if you expose it to the sunshine and pour over it water, it will ignite. Similar is the behavior of the Marei stone" (Pseudo-Aristotelis, 1987, p. 251, 833a, 41; comp. *De Mirab. Auscult*., vol. i., p. 1162).

In this fragment a stone from Thrace has been named as 'spinos'. This name can be found in the first 'mineralogy' by the Greek philosopher Theophrastus of Eresus on Lesbos (Theophrastus Eresius Melanti or Tirtamus of Eres; c. 370-287 B.C.) *'On Stones'* (*Περι λιθων*; c. 306 or 314 B.C.), which has been written under the influence of the ideas of his teacher Aristotle (Kostov, 1988; 2003): "being taken from the mine, it was cut up, and put together in the sun, when it took fire spontaneously, and especially if moistened previously" (Theophrastus, 2005, *On Stones*, II, 13; Carey, Richards, 1956). The stone 'spinus' has been classified among the combustible minerals and according to Moore (1859, p. 150) was either a pyrite or more probable – some sort of an aluminous shale.

Theophrastus discusses the nature of 'fire-stones' from some places in Thrace: "some of the more frangible are broken into coals, and are more durable; as those in a mine near Bina, and those which the river, brings down; for they take fire when coals are placed upon them, and burn as long as one continues to blow them, and after they expire may again be kindled, so that they can be used for a long time, but their odor is very strong and disagreeable" (Theophrastus, 2005, *On Stones*, 12; '*spinus*' and the '*Thracian stone*' are the same – comment in Hill, 1746, notes, p. 54; cit. after Moore, 1859).

Nicander (Nikandros; middle of the II c. B.C.) is a Greek poet, who mentions the Thracian stone (in the form 'Threicius') in his work '*Theriacá'* ('Against animal's poisons'). The Thracian stone, which Nicander (*Theriac*., v. 45) directs to be burned together with gagates, sulphur, bitumen, and other substances which during their combustion give forth a powerful scent, in order to drive away serpents, was brought, as that author and Dioscorides' inform us, from the Thracian river Pontus (Moore, 1859, p. 146-147).

Dioscorides (flourished about A.D. 60) is a Greek writer. He ascribes the same properties of the Thracian stone as those of *gagates* (*Lib*. v., c. 146; compare Pliny's *'Natural History'*, vol. 36, 34), thus the interpretation of both pointing out to some sort of coal (*gagates* is jet – a black hard coal used as gemmological and ornamental material, but in a broader sense – artifacts made by different types of coal; the name is for the river Gages in Ancient Lycia). Such property of the stone of being kindled by water and extinguished by oil has been assigned by Dioscorides also to asphaltum (Moore, 1859, p. 147). According to Dioscorides, the Thracian stone is bred in a certain river of Scythia and the name of it is Pontus (one opportunity is probably on the west coast of the Black Sea).

Summing up the earliest sources on the stone from Thrace the domination of the coal or jet interpretation has to be considered. From a geographical point of view its origin has been located in different cases on the Balkans, north of the Black Sea or in Asia Minor, and as well as in Media and India.

This interpretation of the Thracian stone has been used in later Medieval lapidaries and up to Modern times: "The Thracian stone, another species of gagates, may be formed of black bitumen or black naphtha; this also burns in water, and is put out by oil" (Rulandus, 1991). That the Thracian stone is bituminous is thought to be shown by its smell, its substance and as well as its black colour. It is supposed to be squalid, crusty and light. In another treatise we find that the Lapis Thracias (Thracus, Threicius) **"**is found in that river of Scythia which is called Pontus, and has the quality of gagates; it burns in water, and is extinguished in oil, like bitumen".

In the Medieval treatise on the techniques of painting '*Mappae Clavicula*' ('Keys to Painting') known since the IX century and from copies in the X and XII century one can find the following ideas about the origin of some gem 'stones' applied in jewellery: "The stone onyx appears in the rocks…; the Thracian stone appears everywhere…" (Haritonovich, 1982; cit. after *Mappae Clavicula.,* 1974. 163, 138).

In the work *'De Natura fossilium'* (1546) of the Medieval scholar Agricola (1518-1575), also strongly influenced by ancient sources and mainly by Pliny the Elder, the 'spinus' stone has been interpreted as jet or under question to schist (Agricola, 1958). He also mentions the Thracia stone: "The gem that some call *thracia* from the place where it occurs and others *pontica* from a river of the same district I believe to be related to agate. These gems contain likenesses of mountains and valleys. They have red and dark lines running through them and are decorated with star-like drops of the same color. They may be green or pale green and are nontransparent. They are distinguished from heliotrope which has bloodred veins and from prase which has blood-red drops similar to stars. When they lack veins and drops they are distinguished from green translucent jasper by their lighter green colour" (chapter 6).

Interpretations according to Pliny the Elder

Pliny's '*Natural History*' is the most important source of information on the ancient knowledge in the field of geological sciences including the use and properties of minerals, rocks, metals and different 'stones' and 'earths' (Kostov, 1988; 2003).

Chapter 30 of Book 33 of Pliny's '*Natural History*' is devoted to the marvelous operations of Nature in soldering metallic substances, and bringing them to a state of perfection: "For smelting copper and iron, pine-wood is the best, Egyptian papyrus being also very good for the purpose. Gold is melted most easily with a fire made of chaff. Limestone and Thracian stone are ignited by the agency of water, this last being extinguished by the application of oil. Fire, however, is extinguished most readily by the application of vinegar, viscus (mistletoe), and unboiled eggs. Earth will under no circumstance ignite. When charcoal has been once quenched, and then again ignited, it gives out a greater heat than before|". The cited text follows the concept of the earlier Greek sources about the Thracian stone. But in a similar way has been described also the jet.

Chapter 34 of Book 36 of Pliny's '*Natural History*' is devoted to jet (*gagates*) and its six remedies, made of it: "Gagates is a stone, so called from Gages, the name of a town and river in Lycia. It is asserted, too, that at Leucolla the sea throws it up, and that it is found over a space twelve stadia in extent. It is black, smooth, light, and porous, differs but little from wood in appearance (in the sence of lignite or brown coal), is of a brittle texture, and emits a disagreeable odour when rubbed. Marks made upon pottery with this stone cannot be effaced. When burnt, it gives out a sulphureous smell; and it is a singular fact, that the application of water ignites it, while that of oil quenches it. The fumes of it, burnt, keep serpents at a distance, and dispel hysterical affections: they detect a tendency also to epilepsy, and act as a test of virginity. A decoction of this stone in wine is curative of tooth-ache; and, in combination with wax, it is good for scrofula. The magicians, it is said, make use of gagates in the practice of what they call axinomancy; and they assure us that it will be sure not to burn, if the thing is about to happen as the party desires". The text gives a broad view to a number of superstitions related to the curative and therapeutic role of different 'stones' in ancient times.

In chapter 68 of Book 37 of Pliny's '*Natural History*' according to the alphabetical list of 'minerals' ('stones') the following minerals have been described: *trichrus* (the three-coloured stone) from Africa, *thelyrrhizos* (interpretation 'female heart'?), *thelycardios* ('female heart'?), *thracia*, *tephrites* (crescent-shaped) and *tecolithos* (of an olive colour). The full Latin text regarding the Thracian stone is: *"Thracia trium generum est, livida aut pallidior, in tertio guttis sanguineis"*. The English translation of the Latin text appears as it follows: "Of Thracia there are three varieties; a green stone, one of a more pallid (pale) colour, and a third with spots like drops of blood". *Livida* in Latin in some cases has been attributed to a bluish or bluish-gray colour.

The analysis of the text points out to the opportunity of a new interpretation of the Thracian stone including a group of three green minerals or rocks. Even now-a-days in archaeological or other publications there are usually a number of non-determined from a mineralogical and petrographical point of view artifacts denoted only as 'greenstones'. If the first two green minerals or rocks (or correspondent varieties) are difficult to be identified (among the most wide spread green minerals and rocks, used as raw material for different artifacts in the Mediterranean region can be listed talc, malachite, chrysocolla, ophiocalcite, serpentine minerals and serpentinite, volcanic tuff, epidote, actinolite, diopside, vesuvianite, aventurine quartz, green chalcedony, green jasper or the rare nephrite and jadeite), the third one is well known to mineralogists – the red blood-like spots appear on a dark green background only in heliotrope.

Heliotrope is better to be classified as a colour variety of jasper as it is an aggregate. In some mineralogical or gemmological texts heliotrope has been described as a variety of chalcedony (a fiber type of quartz which forms botryodal aggregates or banded structures known as agates). Heliotrope is known also as 'bloodstone', or 'blood jasper'. As this colour variety is non-transparent and is build by phases with a different mineral composition it has to be listed as one of the varieties of jasper or jasperoid (for the systematic of jasper, jasperoid and jasper-like rocks see Kostov, 2006). Heliotrope as a metasomatic product is found in volcanic areas together with chalcedony – lapidary material is known from India, China, Pakistan, the USA, Brazil and Australia.

Heliotrope appears in chapter 60 of Book 37 of Pliny's '*Natural History*', who describes its origin from Ethiopia, Africa and Cyprus. The '*heliotropum*' is supposed to be of a leek-green colour with blood-red spots or veinlets. Its name is derived from believes that the stone reflects the sun rays when soaked in water: "It has been thus named, from the circumstance that, if placed in a vessel of water and exposed to the full light of the sun, it changes to a reflected colour like that of blood; this being the case with the stone of Ethiopia more particularly. Out of the water, too, it reflects the figure of the sun like a mirror, and it discovers eclipses of that luminary by showing the moon passing over its disk. In the use of this stone, also, we have a most glaring illustration of the impudent effrontery of the adepts in magic, for they say that, if it is combined with the plant heliotropium, and certain incantations are then repeated over it, it will render the person invisible who carries it about him".

The same properties of heliotrope have been mentioned earlier in chapter 34 of Book 37 in the description of the *'prasius'* (prase): "There are numerous other kinds also of green stones. To the more common class belongs prasius; one variety of which is disfigured with spots like blood, while another kind is marked with three streaks of white. To all these stones chrysoprasus is preferred, which is also similar to the colouring matter of the leek, but varies in tint between topazos and gold". It seems that Pliny feels in charge to mention all names of 'stones', known at the time, despite the fact that in cases they duplicate their properties. His knowledge on many ancient sources, a lot of which have been lost in the past, is important in respect of the study of ancient 'mineralogy' and the sources of the raw materials.

Heliotrope has been used as a material in glyptic art in the ancient and early medieval period. Its use is highly esteemed by the gnostics in their magical gems mainly from the 2-3 c. A.D. period (Michel, 2001, fig. 7, 13, 19, 29, 34, 35, 38, 46, 51, 53, 55, and the cited comparative material in different collections and museums).

In Book 1 (part 2) of the '*Occult Philosophy*' of Heinrich Cornelius Agrippa (1486-1535) one can find the following description of helitrope: "Also the Stone Heliotropion [heliotrope] green like the Jasper, or Emrald [emerald], beset with red specks [*i.e.* bloodstone], makes a man constant, renowned, and famous, also it conduceth to long life: And the vertue of it indeed is most wonderfull upon the beams of the Sun, which it is said to turn into blood (*i.e.*) to appear of the colour of blood, as if the Sun were eclipsed" (Agrippa, 2001; English digital edition, 2000).

Heliotrope has been identified since the Chalcolithic period on the territory of Bulgaria. A prehistoric workshop of stone artifacts (including heliotrope) has been found at the village of Sedlare near Momchilgrad in the Eastern Rhodopes (Raduntcheva, 2003). This gemmological material has been listed among the gem minerals and materials on the territory of Bulgaria from the same region (Petrussenko, Kostov, 1992). The best heliotrope in the Caucasus area comes from the Idjevan deposit in Armenia, as well as from the Todan and other deposits in near-by Azerbaijan.

No other information has been reported on the eventual deposit or deposits of heliotrope (bloodstone), which has been highly evaluated not only in ancient, but also in later medieval times. The Eastern Rhodopes may have been one of the earliest sources of this gemmological material in South-East Europe.

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