

## THE GREEK NAME OF CINNABAR

by

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**ABSTRACT:** The paper deals with the Greek word for ‘cinnabar, vermilion’, namely κιννάβαρι(ς) / τιγγάβαρι. After a short introduction regarding the earliest occurrence of the mineral in the Greek world and its earliest description provided by Theophrastus of Eresus, the author discusses all Greek forms and derivatives of the word. Linguistic data coming from Oriental languages is then examined, i.e. Ancient and Modern Persian, Arabic, Saka Khotanese, Chorasmian, Gāndhārī Prakrit, Armenian and others. The following conclusions are drawn from this study: (1) the name of cinnabar is a *Wanderwort* which was used across a wide area and for a long period of time; (2) the word was probably borrowed into Greek in the late Archaic period; (3) it did not originate from an Iranian language, but from another Oriental language, perhaps used in Asia Minor near Miletus or on the eastern coast of the Black Sea; (4) the Greek forms with τιγγ- are earlier than those with κινν-.

The mineral termed cinnabar (or cinnabarite) is a mercury sulphide (HgS) of red, brownish-red or bright scarlet colour. It was used in antiquity both as a source of mercury and of vermilion, a common red pigment<sup>1</sup>. The earliest certain evidence for the Greeks applying cinnabar comes from the 6<sup>th</sup> century BC<sup>2</sup>. At that time some artists used it as a pigment on stone statues (e.g. the Phrasikleia Kore, dating back to the third quarter of the 6<sup>th</sup> century BC) and wooden panels (the famous Pitsa panels, dated to the last quarter of the 6<sup>th</sup> century BC)<sup>3</sup>.

The oldest description of cinnabar in ancient sources falls at the end of the 4<sup>th</sup> century BC. It appears in the treatise *De lapidibus* (*On Stones*) written by

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<sup>1</sup> On cinnabar and vermilion, see first of all GETTENS, FELLER, CHASE 1972.

<sup>2</sup> There is also a small amount of evidence for cinnabar from the Bronze Age, but we should not draw any far-reaching conclusions on its basis. See BRECOULAKI 2014: 7: “Even though some evidence for cinnabar in the Aegean exists (traces have been found in Euboea, Naxos, Chios, Samos and Thasos), so far it has turned up only in extremely small quantities and mainly in waterborne secondary contexts”; furthermore, she states that “cinnabar is completely unknown throughout the entire vast corpus of Aegean wall-painting, despite the famous ‘thalassocratic’ and the intensive trade with the East” (p. 6 f.).

<sup>3</sup> See CALEY, RICHARDS 1956: 194; BRECOULAKI 2014: 15 f.

Theophrastus of Eresus (sections 58–60)<sup>4</sup>. As regards deposits of the mineral, the author delivers the following information:

γίνεται δὲ καὶ κιννάβαρι τὸ μὲν αὐτοφυὲς τὸ δὲ κατ' ἐργασίαν. αὐτοφυὲς μὲν τὸ περὶ Ἰβηρίαν σκληρόν σφόδρα καὶ λιθῶδες, καὶ τὸ ἐν Κόλχοις. [...] τὸ δὲ κατ' ἐργασίαν ὑπὲρ Ἐφέσου μικρὸν ἐξ ἑνὸς τόπου μόνον. ἔστι δ' ἄμμος ἣν συλλέγουσι λαμπυρίζουσιν καθάπερ ὁ κόκκος...

(58; ed. E.R. CALEY, J.F.C. RICHARDS)

There is also a natural and a prepared kind of cinnabar. The cinnabar of Iberia, which is very hard and stony, is natural, and so is the kind found in Colchis. [...] The prepared kind comes from one place only, a little above Ephesos. It is a sand that shines brightly and resembles scarlet dye...

(transl. by CALEY, RICHARDS 1956: 57)

Setting aside the question of the two kinds of cinnabar<sup>5</sup>, we learn about three places from whence the Greeks obtained the mineral in Theophrastus' times. Some problems of interpretation arise in the case of the geographical name Ἰβηρία, but presumably CALEY and RICHARDS (1956: 195 f.) are right while writing in their commentary as follows:

Pliny, who is quoting from Theophrastus at this point, translates the Greek place name Ἰβηρίαν (Iberia) as *Hispania* (Spain), and those who have commented on this passage in the *Natural History* seem to have assumed generally that Pliny was correct in his translation. [...] But it is actually very doubtful whether the cinnabar deposits on the Iberian Peninsula were known, except perhaps locally, as early as the time of Theophrastus, and still more doubtful whether the Greeks obtained cinnabar from that source. [...] Hence Theophrastus probably meant the other ancient country known by the name of Iberia, a country corresponding to the eastern part of the present Transcaucasian Georgia. Colchis, mentioned here along with Iberia, was situated along with the eastern shore of the Euxine south of the Caucasus, and was therefore a country corresponding to the western part of the present Georgia.

The Greek name for cinnabar which has been adopted, via Latin *cinnabaris* f., into many languages of the world (English *cinnabar*, German *Zinnober*, French *cinabre*, etc.), occurred for the first time in the Classical period. All forms and derivatives attested in the sources can be divided into two groups. Words beginning with κινν- belong to the first group, i.e. κιννάβαρι, -εως / -ιος n. 'cinnabar,

<sup>4</sup> Other ancient descriptions of the features and usage of cinnabar are attested much later, in some texts from Roman times, namely in *De materia medica* (*On Medical Material*) by Dioscorides (V 94; ed. M. WELLMANN), *Naturalis historia* (*Natural History*) by Pliny (XXXIII 111–123; ed. H. BACKHAM), and *De architectura* (*On Architecture*) by Vitruvius (VII 8 f.; ed. F. GRANGER).

<sup>5</sup> On this issue, see CALEY, RICHARDS (1956: 193 f.) who deny the suggestion that an artificial preparation of cinnabar already existed in antiquity and claim that “the real difference between the two kinds was in their mode of occurrence: in some places cinnabar was found in a pure enough state to be used directly, but in others it was mixed with extraneous matter from which it had to be separated”.

vermilion' (from the 5<sup>th</sup>/4<sup>th</sup> cent. BC)<sup>6</sup>, κιννάβαρις, -εως m. 'id.' (4<sup>th</sup> cent. BC)<sup>7</sup> and κιννάβαρις f. 'id.' (5<sup>th</sup> or 6<sup>th</sup> cent. AD)<sup>8</sup>. Moreover, there are the derivatives κινναβάρινος, η, ον 'like cinnabar, like vermilion' (from the 4<sup>th</sup> cent. BC)<sup>9</sup>, κινναβαρίζω 'to have the colour of cinnabar' (1<sup>st</sup> cent. AD)<sup>10</sup>, and κινναβαάριον n. 'an eye-salve' (2<sup>nd</sup> cent. AD)<sup>11</sup>.

It is also worth noting that κιννάβαρις (m. or f.?) is attested in the Roman period as a plant name. It appears in Pseudo-Dioscorides' appendix to the book *De materia medica*, i.e. in the so-called *Recensio Vindobonensis* (commonly abbreviated as *RV*), where it stands as an equivalent for the plant name ἐρυθρόδανον n. 'common madder (*Rubia tinctorum* L.)'<sup>12</sup>. What is important is that the Greeks used this plant to produce a red dye.

The second group are variants that have τιγγ- at the beginning, namely τιγγάβαρι n. 'cinnabar, vermilion' (from the 5<sup>th</sup>/4<sup>th</sup> cent. BC)<sup>13</sup>, as well as the adjective τιγγαβάρινος, η, ον 'like cinnabar, like vermilion' (5<sup>th</sup>/6<sup>th</sup> cent. AD)<sup>14</sup>. Besides, in some later sources the form τιγγάβαρυ n. 'cinnabar, vermilion' is attested (from the 2<sup>nd</sup> cent. AD)<sup>15</sup>, which seems to be secondary. Perhaps we should explain it as a transformation made under the influence of native words such as βαρύς, -εῖα, -ύ 'heavy'.

<sup>6</sup> E.g. Ctes. fr. 1b, 11α, 11β, 45, in: *FGrH* 688 (ed. F. JACOBY); Hp. *Mul.* I 92 (ed. É. LITTRÉ); Arist. *Met.* 378 a (ed. F.H. FOBES). The genitive κινναβάριος is attested in Hdn. III 2, p. 767, l. 7 (ed. A. LENTZ).

<sup>7</sup> Anaxandrides fr. 15 in: *PCG*, vol. 2 (ed. R. KASSEL, C. AUSTIN).

<sup>8</sup> Hsch. α 1023' (ed. K. LATTE): ἄδδαν· τὴν κιννάβαριν; Hsch. ψ 4 (ed. P.A. HANSEN, I.C. CUNNINGHAM): ψάδδα· ἡ κιν<ν>άβαρις (in the manuscript: κιννάβαρες); the first lemma is considered to be corrupted.

<sup>9</sup> Since Arist. *HA* 501 a (ed. P. LOUIS).

<sup>10</sup> Dsc. V 76, I and V 105, I (ed. M. WELLMANN).

<sup>11</sup> Gal. *De compositione medicamentorum secundum locos*, in: Claudii Galeni *Opera omnia*, vol. XII, p. 786, l. 5 (ed. C.G. KÜHN).

<sup>12</sup> Ps.-Dsc. III 143 RV (ed. M. WELLMANN).

<sup>13</sup> Diocl. Com. fr. 10, in: *PCG*, vol. V (ed. R. KASSEL, C. AUSTIN); Eust. *Comm. ad Hom. Il.*, vol. I, p. 310, 30 (ed. M. VAN DER VALK): καὶ ὅτι ἐν ῥητορικῷ Λεξικῷ εὐρηται μίλτω συμμιγνύμενον τὸ κιννάβαρι. φησὶ γάρ· τιγγάβαρι τὸ κιννάβαρι Ἀττικοί. Διοκλῆς· «ἡ μίλτος οἶμαι καὶ τὸ τιγγάβαρι». καὶ πάλιν· τιγγάβαρι καὶ μίλτος ἀναμεμιγμένη, οὗ τὴν ἐργασίαν φασὶ πρῶτον εὐρεῖν Καλλίαν Ἀθηναῖον. See also Ael. Dion. τ 17 and Paus. att. τ 29 in: *ERBSE* 1980. Moreover, cf. a corrupted form transmitted in Phot. τ 277 (ed. Ch. THEODORIDIS): τι{α}γγάβαρι· τὸ κιννάβαρι. Διοκλῆς.

<sup>14</sup> Damascius *Vita Isid.* (ap. Photium) fr. 203, l. 23 (ed. C. ZINTZEN).

<sup>15</sup> Hdn. III 1, p. 354 (ed. A. LENTZ): κιννάβαρι, ὅπερ Ἀττικοὶ τιγγάβαρυ; Theognost. *Can.* 730, p. 120 (ed. J.A. CRAMER): κιννάβαρι, Ἀττικοὶ δὲ τιγγάβαρυ. Cf. Heracleon in Hsch. τ 844 (ed. P.A. HANSEN, I.C. CUNNINGHAM): τίγγα· Διοκλῆς ἐν Μελίτταις. Ἡρακλέων δὲ οὐ διελὼν τιγγάβαρυ (this is a conjecture; in the manuscript: ὅτι βαρὺ) τὸ κιννάβαρι[ν] λέγει; τίγγα is no doubt a corrupted form, so it should be emended to τιγγάβαρι or τιγγάβαρυ.

Regarding the etymology of the Greek κιννάβαρις / τιγγάβαρι, the earliest attempt is to be found in the *Etymologiae* by Isidore of Seville (6<sup>th</sup>/7<sup>th</sup> cent. A.D.). His explanation is connected with the popular view that cinnabar is formed from dragon's blood<sup>16</sup>. Accordingly, Isidore tries to juxtapose the word cinnabar with the word dragon:

Cinnabarin a dracone et barro, id est elephanto, cognominatum. Aiunt enim draconum esse sanguinem dum implicant elephantos. Ruunt enim beluae et dracones obruuntur, quorum fusus cruor terram inficit, fitque pigmentum quidquid solo tinxerit. Est autem pulvis coloris rubri.

(XIX 17, 8; ed. W.M. LINDSAY)

Cinnabar (*cinnabaris*) is named from *draco* (gen. *draconis*, 'dragon') and *bar-rus*, that is, 'elephant', for they say that it is the blood of dragons, shed when they entwine themselves around elephants. The elephants charge, and the dragons are overpowered, and the gore they shed dyes the earth, and a pigment is produced from what has stained the soil. It is a red-coloured powder.

(transl. by BARNEY *et al.* 2006: 380)

In modern times, there is a widely held opinion that this word is rather a borrowing from an Oriental language. However, scholars usually provide no linguistic data that could truly support this view. That is why the existing etymological dictionaries of Greek limit themselves only to general statements such as "Fremdwort aus unbekannter orientalischer Quelle" (FRISK 1960–1972: I 855); "Mot d'emprunt, d'origine probablement orientale" (CHANTRAINE 1999: 533); "Foreign word from an unknown (but probably Oriental) source" (BEEKES 2010: 700); δάνειο ανατολ. προελεύσεως (BABINIOTIS 2011: 677)<sup>17</sup>.

In some publications, especially older ones, we can find suggestions that the Greek word has connections to the Modern Persian or/and Arabic word for 'cinnabar, vermilion, red lead'<sup>18</sup>. Indeed, in Modern Persian some variants of this

<sup>16</sup> See first of all Dsc. V 94 (ed. M. WELLMANN): ἔστι δὲ καὶ βαθύχρουν, ὅθεν ἐνόμισάν τινες αὐτὸ αἷμα εἶναι δρακόντιον – "It is also of a deep-color, wherefore some people thought that it is dragon's blood" (transl. by BECK 2005: 374).

<sup>17</sup> Cf. also BOISACQ 1916: 457 ("Origine orientale imprécise"); HOFMANN 1950: 144 ("oriental. Fremdw."); ONION 1966: 176 ("of Oriental origin").

<sup>18</sup> See PRELLWITZ 1905: 223 (Persian *zingāfr* without meaning); CHURCH 1915: 186 (Persian *zanjifrah* without meaning); SKEAT 1924: 110 (Persian *zinjār*, *zingifrah*, *zingāfr* 'red lead, vermilion, cinnabar'); KLEIN 1966–1967: 289 (Persian *shāngārf* 'red lead, cinnabar'); KNAPPERT 1972–1973: 302 (Persian *shāngārf* 'red mercury'). CANNON (1994: 172) connects the Greek word with Arabic *zinjāfr* 'cinnabar'. In turn, IBRAHIM (1991: 158) believes that the Persian *šangārf* 'cinnabar, vermilion' came to Greek through the mediation of the Arabic *zunjufr* and *zinjāfr* 'cinnabar', which is historically unacceptable. On the other hand, the considerations of HERZFELD (1938: 304) who derives the Greek word from Akkadian *šingabarū* are very important; see more in note 31. Moreover, cf. SCHRADER, NEHRING 1917–1929: II, 701 f.; BENVENISTE 1964: 22, n. 88. Cf. also the etymology proposed by JANSEN (1895: 1067), according to which the Greek κιννάβαρις should be connected with the Semitic word *qunābirā* 'graphite', interpreted by him as Nabatean.

name occur, hence STEINGASS (1892), in his *Comprehensive Persian-English Dictionary*, lists the following Persian lexemes: *šangarf* ‘cinnabar, vermilion, a slug’ (p. 763), *sīm-šangarf* ‘cinnabar’ (p. 718), *zinjarf* ‘red lead, vermilion’ (p. 624), *zinjafr* and *zinjifra* ‘red lead’ (p. 624).

Furthermore, STEINGASS provides other, so to speak, Persian-Arabic forms marked with the qualifier *a* which is explained as follows: “Where merely an Arabic element, either as member of a compound or as a formative, combines with the Persian, or where a word is common to both languages without proof positive to which it belongs originally, a small *a* has been prefixed” (p. VIII). There are three such forms: *singarf* ‘cinnabar’ (p. 700), *sinjarf* ‘cinnabar’ (p. 703), and *šanjarf* ‘cinnabar, vermilion’ (p. 762). As for the Arabic language, the dictionary by WEHR (1976: 383) gives two variants, i.e. *zunjufr* and *zinjafr* ‘cinnabar’. At any rate, the Arabic name for cinnabar is no doubt a loanword from Persian which has then been reborrowed again into Persian.

In passing, it is worth stating that the Turkish *zincifre* ‘cinnabar’ derives from the Modern Persian *zinjifra*, the former already being attested in the 16<sup>th</sup> century in the form of *zincifra* ‘id.’ (PELLIOT 1925: 254; ROCCHI 2007: 276). Moreover, the compound form *sīm-šangarf* was presumably taken over as *sibšinkir* ‘vermilion’ into Uyghur (see PELLIOT 1925: 253 f.), a Turkic language spoken in the Xinjiang Uyghur Autonomous Region. In turn, the Arabic *zinjafr* ‘cinnabar’ was borrowed into Swahili as *zinjifuri* ‘red ink’ (see KNAPPERT 1972–1973: 302).

Apart from the material existing in modern languages (but note that the term “modern” in the case of Persian and Arabic means a period beginning in the early Middle Ages), some forms can be quoted from older languages. One of them is attested in Old Persian on a royal inscription of Darius the Great. This is a foundation inscription from Susa known as *DSf* in which Darius talks about building his palace in Susa. The inscription is trilingual, i.e. in Old Persian (ed. KENT 1953: 142–144 and SCHMITT 2009: 127–134), Elamite (ed. VALLAT 1972: 8–11) and Akkadian (ed. STEVE 1974: 155–161 and 1987: 74–77). The Persian word we are interested in is *sinkabruš* (*DSf* 37 f.).

An equivalent of the Persian word in Elamite is the form *ši-in-ka<sub>4</sub>-ap-ru-iš*, which is testified twice, namely in the same inscription (*DSf* Elam. 33) as well as in another inscription which is an adaptation of the same text (*DSz* 34; ed. VALLAT 1972: 10–13). As to the Akkadian version of the *DSf*-inscription, the counterpart of the Persian *sinkabruš* is partly damaged, but the reading *š[i-i]n-ga-[ab]-ru-ú*, i.e. *šingabrû* (*DSf* Akkad. 26) has commonly been accepted<sup>19</sup>.

What is important is that scholars connect the Old Persian *sinkabruš* and its Elamite and Akkadian counterparts with the Modern Persian names for

<sup>19</sup> E.g. SODEN 1965–1981: 1103; CAD XVI, 200; HINZ 1973: 151; STEVE 1987: 75 and 77; CDA 338; TAVERNIER 2007: 36. Cf. SCHEIL 1929: 8 (*š[i-i]r-ga-ru-u*); STEVE 1974: 157 (*š[i-i]r-ga-ru-ú*); HERZFELD 1938: 15 and 303–305 (*š[i-i]n-g[a-ba]-ru-u*); FLEMING 1982: 82 (*sirgarru*).

‘cinnabar’ and ‘vermilion’. According to the *communis opinio*, this word has a slightly different meaning, namely a precious stone, usually interpreted as ‘carnelian’, a brownish-red mineral used as a gemstone<sup>20</sup>. The meaning has been postulated on the basis of the linguistic comparison and of the context of the *DSf* inscription itself. The relevant passage in an English translation reads as follows (lines 35–40):

The gold was brought from Sardis and from Bactria, which here was wrought. The precious stone lapis-lazuli and carnelian (*sinkabruš*) which was wrought here, this was brought from Sogdiana. The precious stone turquois, this was brought from Chorasmia, which was wrought here.

(transl. by KENT 1953: 144)<sup>21</sup>

Furthermore, there are some forms from two Middle Iranian languages. The first language is Saka, known from written sources found in Chinese Turkestan. In one of its two dialects, i.e. Khotanese (used in the period c. 300–1000 AD), the adjective *saṃgūrūna* ‘vermilion-coloured’ is once attested (BAILEY 1979: 417). It occurs in a manuscript on paper (PELLIOT 2891)<sup>22</sup> containing a versified text about a journey of a Buddhist monk. The relevant sentence in an English translation reads as follows: “conspicuous in my vermilion-coloured (*saṃgūrūna*) mantle I came among the men” (ed. BAILEY 1969: 80, no. 32, lines 20 f.; the translation of the sentence comes from BAILEY 1979: 417)<sup>23</sup>. Concerning the suffix *-ūna-*, BAILEY (1979: 417) gives the following explanation: “The adjective *-ūna-* suffix is from *-auna-* [...], but here *-ūna-* is rather from *gūna* ‘colour’ as in *dajūna* ‘flame-coloured’”.

The second Middle Iranian language delivering material for the history of the name of cinnabar is Chorasmian, a medieval East Iranian language from

<sup>20</sup> The meaning ‘carnelian’ has been accepted by KENT 1953: 144 and 209; HINZ 1973: 151; STEVE 1974: 157; HINZ, KOCH 1987: 1158; STEVE 1987: 76 and 77; SCHMITT 1993: 274 (with a remark: “wenn es denn dieser Sinn ist”), 2009: 132 (with a question mark) and 2014: 243; VAISSIÈRE 2004: 21 f.; TAVERNIER 2007: 35 f. Cf. HERZFELD 1938: 303–305 (‘Zinnober’); BENVENISTE 1964: 22 (‘cinnabre’); BRANDENSTEIN, MAYRHOFER 1964: 142 (‘eine Edelsteinart’); SODEN 1965–1981: 1103 (‘ein roter Stein aus Sogdien’); BAILEY 1979: 425 (Old Persian: ‘vermilion’; Akkadian: ‘red stone’); FLEMING 1982: 82 (‘carnelian’ or ‘cinnabar’); *CAD* XVI, 200 (‘a precious stone, carnelian?’); *CDA* 338 (‘a red stone’); OLSEN 1999: 906 (‘a sort of precious stone’).

<sup>21</sup> Cf. a German translation by SCHMITT 2009: 132: “Das Gold wurde von Lydien und von Baktrien (herbei)gebracht, das hier verarbeitet worden ist; der graublaue Halbedelstein (Lapislazuli?) und der Karneol (?), der hier verarbeitet worden ist, – der wurde von Sogdien (herbei)gebracht; der dunkelblaue Halbedelstein (Türkis), – der wurde von Chorasmien (herbei)gebracht, der hier verarbeitet worden ist”.

<sup>22</sup> The manuscript contains two different texts: one in Chinese and one in Khotanese. Photos of it are available in the *Gallica*, the digital library of the Bibliothèque nationale de France: <https://gallica.bnf.fr/ark:/12148/btv1b8302256h/f1.image>.

<sup>23</sup> On p. 447, BAILEY translates the sentence as “my dress conspicuous in vermilion, I came among the men”.



Chorasmia, a region situated on the lower course of the Amu Darya river. The most important source for this language is a bilingual Arabic-Chorasmian version of a lexicon called *Muqaddimat al-adab* (*Introduction to Literary Education*), written by al-Zamakhshari (1075–1144), a famous Muslim theologian and philologist (the manuscript with the interlinear Chorasmian text comes from the end of the 12<sup>th</sup> cent.; ed. BENZING 1968). In this text, two Chorasmian words for cinnabar are attested: *symšnkrf* and *šnkrf* (BENZING 1983: 587 and 599)<sup>24</sup>. However, both forms seem to be borrowings from Persian (cf. the Modern Persian forms *sīm-šagarf* and *šangarf* listed above).

Presumably, a Middle Iranian name for cinnabar was borrowed into Gāndhārī Prakrit, another language known from written sources found in Chinese Turkestan (dating to the 3<sup>rd</sup>–4<sup>th</sup> cent. AD). An administrative document from Niya (no. 680), which is a list of sent or received textiles, mentions different kinds of silk (e.g. yellow or red). Among them, there are phrases: *sānapru giṃnita* (col. A, 3) and *sanapru giṃnita* (col. B, 2) which are interpreted as “vermilion silk-roll” (text and translation in BAILEY 1946: 781)<sup>25</sup>. If the explanation is correct, we have here an adjective with the meaning ‘vermilion-coloured’.

One more word that should be recalled is the Classical Armenian *sngoyr* ‘paint, rouge’. The noun *sngoyr* is attested twice in the Bible text: *Ezek.* 23, 40 and *Wis.* 13, 14. The translation was done from the Greek, but only in the latter case do we find an exact one word counterpart, i.e. φῦκος n. ‘orcein (used as rouge)’ applied as an instrumental with the verb ἐρυθραίνω ‘to paint red’; in the former passage the original Greek text is more general, with the expression στιβίζεσθαι τοὺς ὀφθαλμούς ‘to paint eyes (eyelids and eyebrows)’. It is generally agreed that this word is connected with the Old Persian *sinkabru-*, the Modern Persian *šangarf* etc. and it is treated as a Middle Iranian, strictly speaking, Parthian loanword<sup>26</sup>. An intermediate form, which the Classical Armenian comes from, should be, as BENVENISTE (1964: 22) and OLSEN (1999: 906, no. 609) reconstruct, the Armenian *\*singaur-*, where *-au-* is a typical rendering of the Iranian *-af-* before a consonant, as well as the fact that the change of the diphthong *-au-* to *-oy-* is regular in early Armenian<sup>27</sup>.

There is no doubt that the word for cinnabar must be interpreted as a classic example of a *Wanderwort* transferred from one language to another. It extended

<sup>24</sup> For the first word BENZING gives the meaning ‘eine Art Zinnober; eine Flüssigkeit von blauer Farbe’.

<sup>25</sup> Cf. BAILEY 1961: 482 and 1979: 417.

<sup>26</sup> See BENVENISTE 1964: 21 f.; BRANDENSTEIN, MAYRHOFER 1964: 142; OLSEN 1999: 906, no. 609; SCHMITT 2014: 243. Cf. BAILEY 1961: 482 and 1979: 417; TAVERNIER 2007: 35. Moreover, cf. HÜBSCHMANN (1897: 238, no. 580) who lists this word among Iranian borrowings, but without giving any explanation (he only rejects an improbable earlier suggestion); cf. BENVENISTE 1964: 22.

<sup>27</sup> Cf. BRANDENSTEIN, MAYRHOFER 1964: 142 (*\*singaura-* from *\*singabru-*).

across a wide area for a long period of time, as has been shown not only by the data listed above, but also by some forms from other languages used nowadays in East Asia. In Mongolian, a language belonging to the Altaic family, the noun *šinqu(n)* ‘vermilion’ (SCHARF 1981: 385 f.) is attested. A similar form occurs also in Manchu, an endangered Tungusic language spoken in Manchuria, namely *činuḡun* ‘vermilion’ (SCHARF 1981: 385 f.)<sup>28</sup>. On the one hand, these forms are so remote from the Iranian ones that it is difficult to talk about their direct dependence on each other, but, on the other hand, they are so close that random similarity cannot be taken into consideration<sup>29</sup>.

The forms coming from the Far East are not very significant for the history of the Greek name(s), since the Iranian data is phonetically much closer. Of course, it does not mean that κιννάβαρι(ς) / τιγγάβαρι is an Iranian loanword. Even if it derived from an Iranian form, the borrowing would be taken over not directly, but through another language. First of all, it is difficult to explain why the voiceless stops κ [k] and τ [t] appear as initial sounds in place of the Iranian voiceless fricatives s [s] or š [ʃ]. We do not know any parallel for such a phonetic realisation among Iranian loanwords in Greek<sup>30</sup>. Probably the Greeks borrowed it from a language in which the same word had a stop or an affricate at the beginning<sup>31</sup>.

<sup>28</sup> Cf. PELLIOU (1925: 254 f.) who suggests that they are loanwords from the Modern Persian *šangarf* ‘cinnabar, vermilion’ (he does not exclude a mediation of Sogdian or ancient Uyghur). PELLIOU proposed the following reconstructions: the Mongolian *šinqu* (*šinqu* in his transcription) < \**šinyu* < \**šinyau* < \**šinyaf* (the final -r would disappear) and the Manchu *činuḡun* from the same \**šinyu* + the suffix -*ḡun*.

<sup>29</sup> The existence of the forms in Mongolian and Manchu provokes the question of whether there is also some relevant data in Chinese, the most influential language in the history of East Asia. In the *Modern Chinese-English Technical and General Dictionary* (MCETGD) we can find two names for cinnabar: *dānshā* (p. 234) and *zhūshā* (p. 1747), where *dān* and *zhū* mean ‘red’ (p. 224 and 1724), and *shā* is a noun for ‘sand, powder, ore’ (p. 1110). First of all, the word *dān* is worth noting. Some important details about its history are to be found in the *Etymological Dictionary of Old Chinese* by SCHUESSLER 2007: 204. The author writes that its meaning in Old Chinese was ‘be red; vermilion, cinnabar’. The word was already attested in the older parts of the *Shījīng* (*Book of Songs*), composed during the Western Zhou period (c. 1050–770 BC). Concerning the pronunciation, the initial stop of the word was a voiceless *t*- in Later Han Chinese (1<sup>st</sup>–2<sup>nd</sup> cent. AD), in Middle Chinese (c. 600 AD) and probably in Old Chinese too. Moreover, SCHUESSLER notes that cinnabar “has in antiquity been a mineral from the ancient southern states Bā (Yúnnán) and Yuè (Zhèjiāng)”. Is it possible that the Old Chinese \**tān* (a reconstruction according to SCHUESSLER) is the ultimate source of the Old Persian *sin*-, Greek κιν- / τιγγ-, Mongolian *šin*-, Manchu *čin*- and so on?

<sup>30</sup> On the realisation of the Iranian fricatives in Greek, see BRUST 2008: XXXVII f.

<sup>31</sup> At first glance, we could take into consideration the Akkadian form *šingabrū* with the transliterated š at the beginning. In the field of Semitic studies, this sign is commonly used to note a voiceless affricate (e.g. in Hebrew or Aramaic), but in Akkadian it is surely a fricative sound (see STEINER 1982: 90; cf. HUEHNEGARD, WOODS [2004: 230 f.] who assume for š, z, s the values of affricates in the post-Old Akkadian period, although they emphasise that in later dialects, i.e. in Babylonian and Assyrian, these sounds became fricatives). So, the form *šingabrū* is rather nothing more than an exact phonetic rendering of a Persian word. Cf. HERZFELD (1938: 304) who believes that the Akkadian *šingabrū* (according to him: *šingabarū*) is phonetically the closest form to the



However, on the basis of the Iranian material, we can draw some conclusions about the history of the Greek word. The most important fact is that the cluster -γγ- [ŋg] is closer to the Iranian -ng- [ŋg/ŋg] / -nk- [ŋk/nk] than -vv- [nn]. An analogical example of -γγ- from Iranian -ng- is χαυαράγγης m. ‘a Sassanid title of a high military official’ (6<sup>th</sup> cent. AD) which is derived from the Middle Persian personal name *Kanārang* (the title was held by the family Kanārangīyān)<sup>32</sup>. Another Oriental loanword with the cluster -γγ- is ζιγγίβερι n. / ζιγγίβερης m./f. ‘ginger’ (from the 1<sup>st</sup> cent. AD), whose counterpart is to be found in Pali *singivera*- ‘id.’<sup>33</sup>.

Accordingly, the cluster -vv- [nn] is secondary and presumably evolved from -γγ- [ŋg] through progressive assimilation. Perhaps the presence of the velar stop κ [k] in the word-initial position is also somehow connected with this phenomenon, but it is difficult to say anything more certain in this respect. At any rate, if we assume that the Greeks borrowed the word for cinnabar only once (although we cannot completely exclude the possibility of two independent loans at different times and/or places), the form τιγγάβαρι should rather be treated as the primary one. This conclusion stands in contrast to previous opinions, according to which the form τιννάβαρι developed from κιννάβαρι<sup>34</sup>.

The linguistic data does not deliver an answer to the question of where and when the word was taken over by the Greeks. Some conclusions can be drawn on the basis of archaeological and literary evidence. We know that cinnabar as a pigment occurred in the Greek world as early as the second half of the 6<sup>th</sup> cent. BC. Therefore it is highly likely that the name itself was also already in use at that time, despite the fact that it is attested in the sources more than a century later (from the turn of the 5<sup>th</sup> and 4<sup>th</sup> cent.).

Concerning a hypothetical place of borrowing, we can rely on Theophrastus’ account, but, of course, we have to remember that there is a two century gap between his treatise, *On Stones*, and the earliest use of cinnabar by the Greeks. However, the deposits of cinnabar mentioned by Theophrastus might be old. If so, there are two possible regions in which the Greeks could have got to know the mineral and its name for the first time, namely Asia Minor, near Miletus, or the eastern coast of the Black Sea with such Greek colonies as Dioscourias

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Greek κιννάβαρι / τιννάβαρι (τιγγάβαρι): “Die Griechen schreiben gewöhnlich κιννάβαρι n. oder κιννάβαρις m. [...], aber auch attisch τιννάβαρι n. Diese zweite Form, ob mit att. τ für σ, oder mit τ für θ aus akk. š [...], steht dem akk. *šingabarū* am Nächsten; in κιννάβαρι scheint eine Kompensation der Gutturale, eine Art Dissimilation vorzuliegen. Beide Formen aber führen, wohl durch Vermittlung, auf die akkadische, nicht auf die altpersische Form”; cf. VAISSIÈRE 2004: 22.

<sup>32</sup> BRUST 2008: 664–666; POURSHARIATI 2008: 266–271.

<sup>33</sup> See BRUST 2008: 269–273; BEEKES 2010: 501.

<sup>34</sup> Concerning the alternation κινν- : τινγγ-, cf. JANSEN 1895: 1067 (“Die späte Form τινγγάβαρι ist ja bei der Herleitung mit zu erwägen; doch ist es wohl sicher, daß sie aus κιννάβαρι verderbt ist; der Übergang von κ zu τ ist ja in neueren Sprachen nicht so selten”) and BEEKES 2010: 700 (“perhaps *ki-* > *k'i-* > *tsi-* ?”).

(nowadays Sukhumi) and Phasis (nowadays Poti) which were founded during the late Archaic period.

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