the quarries are located on the shores of Hind and Sind. This is probably intended for vitriol or sulphate of copper.[1]

In Chinese *t'ou-ši*, the second element *ši* ("stone") does not form part of the transcription; the term means simply "*t'ou* stone," and *t'ou* (*tu) reproduces the first syllable of Persian *tūtiya*, which, on the basis of the Sui Annals, we are obliged to assign also to the Middle-Persian language. To derive the Chinese word from Turkish *tūj*, as proposed by WATTERS,[2] and accepted without criticism by HIRTH,[3] is utterly impossible. The alleged Turkish word occurs only in Osmanli and other modern dialects, where it is plainly a Persian loan-word, but not in Uigur, as wrongly asserted by Hirth. This theory seems to imply that the element *ši* should form part of the transcription; this certainly is out of the question, as 石 represents ancient *šek or *sak, *zak, and could not reproduce a palatal. For the rest, the Chinese records point to Iran, not to the Turks, who had no concern whatever with the whole business.[4] Two variations of the Persian word have penetrated into the languages of Europe. The Arabs carried their *tūtiyā* into Spain, where it appears as *atutia* with the Arabic article; in Portuguese we have *tutia*, in French *tutie*, in Italian *tuzia*, in English *tutty*. A final palatal occurs in the series Osmanli *tuj* or *tunč*, Neo-Greek τούντζι, Albanian *tuč*, Serbian and Bulgarian *tuč*, Rumanian *tuciŭ*. Whether Sanskrit *tuttha*, as has been assumed, is to be connected with the Persian word, remains doubtful to me: the Sanskrit word refers only to green or blue vitriol.[5] It is noteworthy that Persian *birinj* ("brass"), a more recent variant of *piriń* (Kurd *pirinjok*, Armenian *plinj*),[6] has not migrated into any foreign language, for I am far from being convinced that our word "bronze" should be traceable to this type.[7]

The Japanese pronunciation of 鍮石 is *čūseki*. The Japanese used

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[1] A curious error occurs in FELDHAUS' Technik (col. 1367), where it is asserted, "Qazwīnī says about 600 that zinc is known in China, and could also be made flexible there." Qazwīnī wrote his cyclopædia in 1134, and says nothing about zinc in China (cf. RUSKA, Steinbuch des Qazwīnī, p. 11); but he mentions a *tūtiyā* mine in Spain (G. JACOB, Studien in arabischen Geographen, p. 13).

[2] Essays on the Chinese Language, p. 359.

[3] Chau Ju-kua, p. 81. *T'ou-ši* does not mean "white copper" in the passage under notice, but means "brass." "White copper" is a Chinese and quite different alloy (see below, p. 555).

[4] It is likewise odd to connect Italian *tausia* (properly *taunia*) and German *tauschieren* with this word. This is just as well as to derive German *tusche* from an alleged Chinese *t'u-se* (HIRTH, Chines. Studien, p. 226).

[5] P. C. RAY, History of Hindu Chemistry, 2d ed., Vol. II, p. 25.

[6] HÜBSCHMANN, Persische Studien, p. 27.

[7] O. SCHRADER, Sprachvergleichung und Urgeschichte, Vol. II, p. 73.