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Freer Gallery of Art and Arthur M. Sackler Gallery

Archaeological Research in China (Appendices) 1923-1934

Extracted on Mar-29-2024 09:32:55

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Appendix III. 2.

"southern metals" as they are sometimes called) were gold, silver, and copper. But China has never, to the best of our knowledge, produced much silver; while on the other hand tin seems for every reason much more likely to have been the metal sought along with gold and copper; since without it there could be no bronze.

In this surmise, I am glad to say, I have been confirmed by those Chinese scientists who are not afraid to think for themselves instead of blindly following the "orthodox" commentators.

whatever nationality, who treat of Chinese bronzes have, with a few noteworthy exceptions, either evaded the point or else ignored it entirely.

In this absence of help from the literary sources, ancient or modern, however, there still remains a method which will enable us to help solve the problem in another, though less direct, way.

Just as, in taking shoal-water soundings in thick weather, the tallow "arming" the lead serves to bring up with it samples of sea-bottom whose inspection makes it possible for the navigator to infer with fair accuracy the position of his vessel; so in a somewhat similar manner the impurities of various sorts contained in ancient Chinese bronze objects, and which the metal-workers who cast them did not know how, or (perhaps less probably) did not take the trouble, to remove during the process of smelting, will, once the sample of ore has been matched, tell us the locality where the metal was mined in the first place. For ores of the same metal from two different regions will not display the same list of impurities, in exactly identical percentages. Ancient Chinese bronze was apparently a three-metal alloy, of copper, tin, and lead, mingled in very irregular proportions; for the results of scarcely any two analyses are alike. We do not know, in fact, whether the ancient Chinese metallurgists, any more than their Roman compeers ⁽²⁾, were

(2) Thus Pliny speaks of tin as plumbum album, "white lead", and of lead as plumbum nigrum, "black lead", respectively.

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