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WERTIME, THEODORE

WERTIME, THEODORE (b. Chambersburg, Pa., 31 August 1919; d. Chambersburg, 8 April1982), diplomat and scholar, expert on the history of technology in the ancient Middle East. Upon graduating from Haverford College (Pennsylvania) in 1939, Wertime earned M.A. degree in history from the American University in Washington, D.C. and did additional graduate work in history at Johns Hopkins University in Baltimore. During World War II he served in the Office of Strategic Services in China and subsequently joined the State Department as a China analyst. From 1960 to 1963, he was the Cultural Attaché in the U.S. Embassy in Tehran, and in 1969-72 he served in the same capacity in Athens. Wertime was actively engaged in the study of early fire-based technologies and organized and headed a number of archaeological surveys, including five in Persia. As an employee of the U.S. Information Agency, he edited the Voice of America's Forum and was an officer of its energy program. Upon retiring from government service, he joined the Smithsonian Institution as a research associate and was a visiting scholar at the Universities of Pennsylvania and Minnesota. Wertime wrote and edited a number of books and articles, and arranged several symposia to promote the study of ancient pyrotechnology.

As scientific archaeological investigations in the Middle East intensified during the 20th century, the West was to discover that a multitude of mechanisms of civilization, from farming technology to early metals, writing, and state societies and empires, had evolved in and spread to Europe from the East. In the 1960s Wertime wrote: "Forty years ago a number of European countries

were vying to be known as the original home of the blast furnace—today the competition has moved in space to the Middle East and in time to the much earlier beginnings of the smelting of ores and metals" (Wertime, 1968a, p. 927).

Theodore Wertime made significant contributions to the understanding of the role of Persia and the Middle East in the development of metallurgy. He considered metallurgy to be a part of the technological art, which he called "pyrotechnology" (Goodway, p. 82). Wertime "was not persuaded" by the argument of "independent invention of metallurgy in Europe" (Goodway, p. 82) and wrote that "the uplands of the Middle East" offered a "favourable juxtaposition of mineral and fuel resources" necessary for the emergence of metallurgy (Wertime, 1964b, p. 1258).

Interested in humankind's use of fire to shape materials, Wertime selected excellent expedition members, whose expertise he sought to explicate the superbly chosen sites to which, in his capacity as a diplomat, he was able to negotiate access. Wertime's search for the earliest beginnings of pyrotechnology led him to organize the following expeditions in Persia: metallurgical reconnaissance of archaeological sites in the north with the Ministry of Mines of Iran in 1961 (Wertime, 1968a; Idem, 1968c); a follow-up survey with Cyril Stanley Smith in 1962 (Wertime, 1968a, pp. 931, 934); a survey covering "The Great Persian Desert" as an adjunct to the excavations by Caldwell at Tal-e Eblis in 1966 (Wertime, 1968a, p. 927), a reconnaissance coordinated with Lamberg-Karlowsky's field survey in 1967 (Wertime, 1968c).

Wertime had gained considerable experience and knowledge during expeditions he undertook in the region together with various experts before planning the 1968 survey, which was the largest and the most ambitious of them all and was funded by the Smithsonian Institution and the National Geographic. The team included, in alphabetical order, Robert Brill (glass, glazes, and metals), Sam Bingham (photographer), Fred Klinger (geologist), Fred Matson (ceramics), ʿEzzat-Allāh Negahbān (archaeology), Rodemir Pleiner, Beno Rothernberg and Ronnie Tylecote (archeometallurgists), and John Wertime (one of Theodore Wertime's sons who acted as interpreter). The members of the expedition collected samples according to their own briefs and interests; not all of them were present at all sites, and some of them visited other sites individually.

The surveybegan in Afghanistan on 29 July 1968. By 12 August, the members had reached the border of Persia, from where they went on to Uzbeg Kuh

(Ozbagu?), Deyhuk, Tappa Yaḥyā, Deh-e Sard, Sečāh, Tal-e Eblis, Qatru (Qaṭruya), Kuh-e Sorḵ, Estebanat (Eṣṭehbānāt), Persepolis, Zar-Češma, Pasargadae, Hanašk (Henešg), Talmessi (Tolmešgi), and Miskenni. The toponyms above are spelled as they given in Rodemir Pleiner's unpublished data (Pleiner), and some of them remain ambiguous. After Miskenni, further visits were made to Talmessi, before moving on to Tappa Sialk near Kāšān, and finally to Ahaer. The expedition then moved on to Turkey on September 16 and finished in Ankara on September 25.

The majority of the sites they visited were archeological in nature, but some were modern cities, local bazaars, museums, and modern production centers. Sam Bingham mentions that, wherever an audience could be found, the team would display the material they were interested in, with the curious ones amongst the audience being invited to comment on where they may have seen anything resembling the displayed items (Bingham). These ethnographic and other experimental approaches they employed were modern for that time.

Samples of ceramics were taken to the U.S. by Fred Matson, while Fred Klinger brought with him geological samples that later became the subject of analysis funded by the U.S. Naval Research Laboratory (Domenico et al.). The metallurgical samples from the 1968 survey got tied up in bureaucratic knots in Turkey and were later retrieved by Beno Rothenberg. A few of them were sent to Ronnie Tylecote in England, and the rest were stored in Israel, until Beno Rothenberg and the author of this article, then a student, met by chance, and the samples were transferred from Israel to the Institute of Archaeology of the University College of London in 2002. Since then, the artifacts have been catalogued and cross-referenced with textual data to facilitate research into this important material (Arab). The catalogue has since become the subject of a website to make the artifacts and textual appendix accessible to scholars worldwide: *www.ucl.ac.uk/iams/iransurvey*. The website also contains scanned images of unpublished documents and reports referred to in this article.

Theodore Wertime organized and headed further expeditions after his surveys of Persia. In 1970 and 1971 he carried out surveys in Turkey, followed by a journey in 1973 to sites in Turkey, Cyprus, and the Balkans. The "Eastern desert of Egypt" expedition was next in 1976, and finally an expedition to Greece and Cyprus took place in 1980 (Goodway, pp. 81-82). Wertime published various articles and books, and set up several symposia to promote the study and understanding of "pyrotechnology." The valuable artifacts remaining from the 1968 survey are a testament to Wertime's profound

understanding of the true beginnings and spread of “pyrotechnology,” as well as the crucial role of Persia and the Near East in the development of metallurgy and “other urbanizing technologies” (Wertime, 1973a, p. 886).

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(Roya Arab)

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