

WILLIAM CAMPBELL ROOT, 1904-1969

Archaeologists will remember William C. Root for his extensive work on pre-Columbian metallurgy in the New World. What many do not know is that he also had a distinguished 37-year teaching career at Bowdoin College in Brunswick, Maine. In 1969, The American Chemical Society presented him with the James Norris Flack award for the teaching of chemistry. Root's death on June 13, 1969, in the midst of ceremonies in honor of his retirement, terminated a long career during which he made a unique contribution to archaeology, one which is far larger than his bibliography implies.

The time when Root first became interested in pre-history cannot be fixed precisely but it was probably while he was taking his Ph.D. in Chemistry or as a Research Associate at Harvard University. It is probable that his first work was done for Professor Alfred M. Tozzer on the collection from the Cenote of Sacrifice, Chichen Itza, Yucatan. His first analysis is dated June 1927 but publication was delayed until 1952. This and subsequent work done after 1932 when Root joined the Bowdoin College faculty occupied all his research time and, as a matter of fact, much of any spare time he could find. Over a period of 35 years or more, Root, with a minimum of assistance by students and colleagues, made nearly two thousand analyses of metals from North, Central and South America. The records of this lifetime of research constitute a very complete and beautifully organized study of the metals from the New World together with an extensive analysis of the hypothesis which attempts to relate this



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industry to that of India and southeast Asia. This material when combined with the orderly records of analyses, microfilmed records, spectrographic films, and slides constitutes an unusual and apparently complete source of information concerning metallurgy in pre-historic North, Central and South America. It is also evidence of his thorough and scholarly approach to the archaeological and metallurgical problems. He had the foresight to leave this collection of materials to the Peabody Museum, Harvard University, so that it may be available to interested scholars.

At the time when Root was commencing his research, the idea of collaboration between specialists and archaeologists had hardly been born. It is remarkable to note that although he was trained as a chemist, Root in his unobtrusive way became absorbed in the archaeological problems to which, in the beginning at least, he was contributing unique data. As a result, the analyses of samples opened new vistas for archaeological study and took on meanings which far exceeded the published listing of the chemical research. Root knew the significance of style and sequence and those of us who worked beside him remember his cogent discussions of aboriginal methods of metal working in relation to archaeological sequence and culture diffusion. I believe that the late S. K. Lothrop would agree that Root made major contributions to the study of the significance of

the metal artifacts from Cocle and the Province of Veraguas in Panama. These have been difficult to recognize fully. The same is true of Peru, Columbia and Ecuador. For this area, we are fortunate indeed to have his report on the South Coast of Peru (1949a) and a discussion of metallurgy in the *South American Handbook* (1949b). The metals from the Southwest, particularly bells, were positively identified as coming from Mexico (1937b, 1952) and in 1961 he slew the ghost of the middlewestern Indian as an accomplished metallurgist by showing that the fabrication of tools from Lake Superior copper was, from all indications, done only by hammering. He has, as well, analyzed metal tools from western North America.

As Root gained experience with archaeology he became increasingly concerned with the basis for what is now called the "interdisciplinary approach." At conferences, in conversations, and in some of his papers he comments on the idea that scientists in one field can be interested in contributing to problems in another provided collaboration can be made to work both ways. This broad point of view is no doubt reflected in a Senior Seminar at Bowdoin called "Ancient Civilizations of the Andes," and his contribution to the Senior Center Program at the college of a seminar entitled "The Civilization of the Maya."

Root was a most modest man who carried a very heavy schedule of teaching and research without complaint and with only rare comment which was so reserved that many have never realized what Root accomplished. His family, the college, and science have lost a quiet, effective teacher and scholar and, above all, a very pleasant companion.

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Listed below is a bibliography of the major archaeological contributions of William C. Root.

- 1937a Analysis of aboriginal metal artifacts from Cocle and adjacent regions. In S. K. Lothrop, Cocle, an archaeological study of central Panama. *Peabody Museum, Harvard University, Memoir 7, Appendix II:307-309.*
- 1937b The metallurgy of Arizona and New Mexico. In H. S. Gladwin, et al, Excavations at Snaketown. *Gila Pueblo, Medallion Papers, No. 25, Appendix II: 276-277.*
- 1942 Studies in the use of metals in Pre-Columbian America. *American Philosophical Society, Yearbook, 1941: 232-234.*
- 1943 A study of some copper objects from Guatemala. In B. P. Dutton, Excavations at Tajumulco, Guatemala. *School of American Research, Monograph 9: 115-116.*
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- 1950b Metallurgical analyses and their aid to archaeology. Viking Fund conference, New York.
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- 1953 Report on some metal objects from Zaculeu. In R. B. Woodbury and A. S. Frick, *The Ruins of Zaculeu, Guatemala, Vol. 1.* United Fruit Co.
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- 1962 Report on the metal objects from Mayapan. In H. E. D. Pollack, Mayapan, Yucatan, Mexico. *Carnegie Institute of Washington Publication 9:391-399.*
- 1967 Some notes on pre-Columbian metal casting. In Martin-Levey (ed.), *Archaeological chemistry, a symposium.* University of Pennsylvania Press.
- 1968 A chemist and archaeology. *Nucleus.*