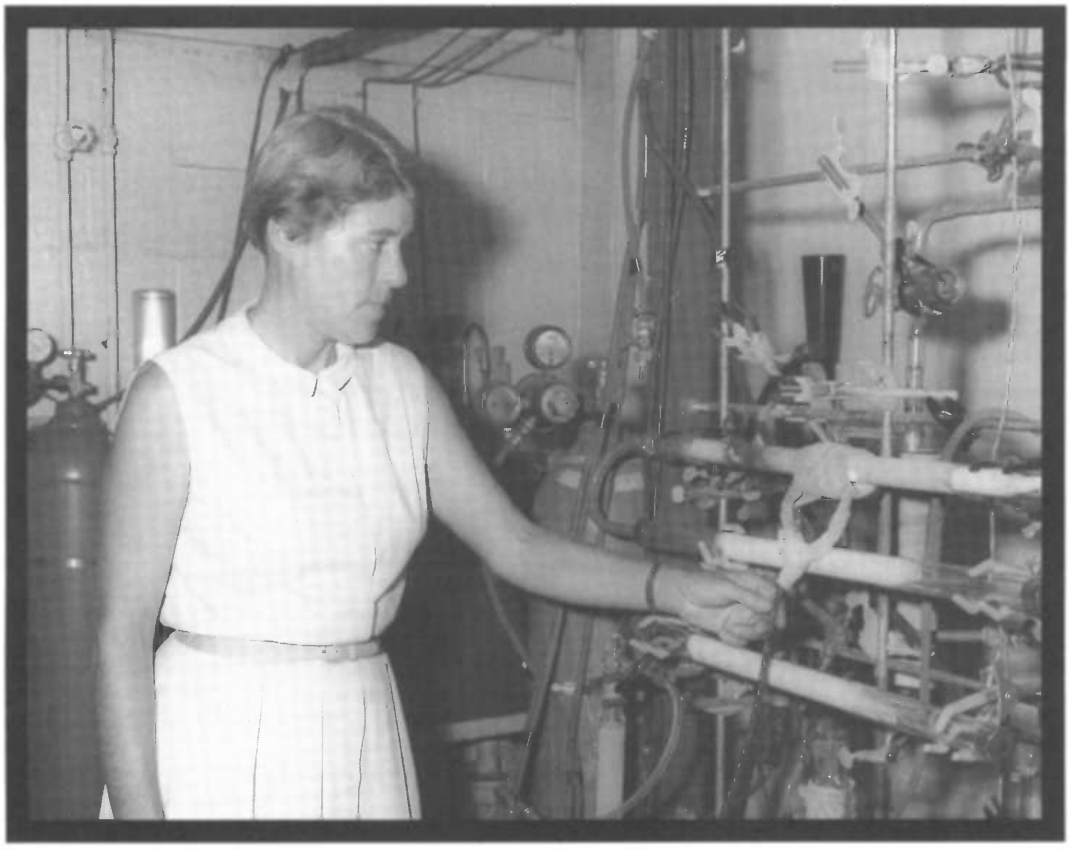

E. K. Ralph and combustion tube for converting ^{14}C samples to CO_2 (possibly 1969). Courtesy of MASCA.

DR. ELIZABETH K. RALPH (5 FEBRUARY 1921 – 23 MARCH 1993)

The scientific life of Elizabeth Ralph was marked by a spirit of pioneering. This spirit was reflected in her work in the new field of radiocarbon dating and eventually led to the establishment, at the University of Pennsylvania, of the second radiocarbon laboratory in the world (after Nobel laureate Willard Libby's laboratory in Chicago).

Problems encountered with the inaccuracies of radiocarbon dating led Beth to another pioneering task – the establishment of correction factors for radiocarbon dates based on precisely dated tree rings. After "intermediate" publication of correction curves resulting from presentations at the 1969 Uppsala, Sweden, and 1972 Wellington, New Zealand meetings, a definitive and much appreciated form was published in 1973. For many years, it remained an important tool for those archaeologists who accepted radiocarbon dating.

Another innovative work that Beth undertook was that of archaeological surveying with magnetometers. She collaborated with manufacturers of magnetometers to improve the sensitivity of the instruments to measure variations in magnetic intensity. The results were the rubidium and cesium magnetometers she used to find the "sunken" city of Sybaris in the very south of Italy. Her explorations there over an 8-yr period became legendary. This work required walking hundreds of miles over archaeological territory, and Beth had the stamina to do it. Her endurance was no doubt reinforced by her membership in the U.S. land hockey team, which often met with tough international competition. During the 1960s, Beth surveyed some 50 archaeological sites in eight countries.

For her contributions to archaeological research through the use of chronometric techniques, Dr. Ralph received the Pomerance Award of the Archaeological Institute of America. With all the research projects, administrative duties as Associate Director for the Museum Applied Science Center for Archaeology (MASCA), as well as Director of the Radiocarbon Laboratory, Beth was indeed a busy person. Yet she always found time to discuss problems of archaeological techniques with both colleagues and graduate students. Her advice to the latter was often instrumental in shaping their subsequent careers.

Beth Ralph graduated from Wellesley College with a major in chemistry. Her graduate degrees in physics and geology were earned at the University of Pennsylvania. Her life's work and major interests are reflected in her publications. A few of her notable publications are listed below.

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