

SYMPOSIUM IN MEMORIAM. ARTHUR C. AUFDERHEIDE
THE SCIENTIST, THE FRIEND (1922-2013)

PALEOPATHOLOGY

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RODRÍGUEZ-MARTÍN, C. (2021). Paleopathology. *Canarias Arqueológica*, 22: 41-48.
<http://doi.org/10.31939/canarq/2021.22.07>

Abstract. Arthur C. Aufderheide (Art, as he liked to be called by his many friends) was always in love of ancient cultures and archaeology, therefore it is not strange that in the late 1970s - early 1980s feeling old - according to his own words - to study a humanistic career decided to combine his own experience as a pathologist, his adventurer spirit and archae-

ology and what a better field to make the cocktail than paleopathology, a true unknown discipline for him at that moment. As many other paleopathologists, one of his first papers was entitled "The enigma of ancient cranial trepanation" (1985) and since then a big amount of cases, places, persons, etc. formed part of his life until his death in 2013.

Keywords. Art Aufderheide. Paleopathology. Mummies. Ancient cultures.

THE BEGINNING

Since his youth, Art was a lively and very active person and this explains many things that he carried out during his life and his first incursions in the fascinating field of paleopathology in the early years of the 1980s. At that time, Art was head of the Department of Pathology in the Minneapolis Veteran and St. Luke Hospitals, as well as founder of the School of Medicine at the University of Minnesota-Duluth

Campus where he was professor of Pathology and head of the Department of Pathology and Laboratory Medicine and, later, Dean of the School.

Therefore, the mixture of his curiosity for ancient cultures and archaeology with his voyager spirit and his experience as a pathologist favored his introduction in the discipline that was almost unknown for him at that time, although paleopathology was developing quickly during that period in the USA and the rest of the world. To do all this should be impossible without the help, support and love of his wife Mary, the true engine of Art's life.

WHY MUMMIFIED TISSUE PALEOPATHOLOGY?

Paleopathology was growing as never before during the last third of the last century, however paleopathological studies on mummies and mummified tissue were very scarce in comparison with those of skeletal paleopathology due to the scarcity of specimens and the technical requirement and skills needed to carry out these analyses. Of the scarce research on mummies at those years, the most relevant were those of Aidan Cockburn and collaborators on Egyptian mummies from the University of Pennsylvania (PUMs) during the 1970s resulting in the book *Mummies, disease and ancient cultures* (Cockburn, A. & Cockburn, E. eds., 1980) that included chapters on mummies around the world and the work of Marvin Allison and Enrique Gerszten on Chilean and Andean mummies a little bit earlier who published *Paleopathology in Peruvian mummies: application of modern techniques*. (Allison & Gerszten, 1977).

In this context, Art decided to begin his research in the field and to prepare himself to carry out those studies attended a course on soft tissue paleopathology organized and directed by Marvin Allison (Virginia Commonwealth University, Richmond) in 1982. Since then, Art and Marvin were friends and colleagues until the end of their lives.

Shortly after that, Art published one of his first papers on paleopathology "The enigma of ancient cranial trepanation" (1985), although four years before have published a short article entitled "Soft tissue paleopathology – an emerging subspecialty" (1981) in the journal *Human Pathology*, where he made clear his interest and curiosity for this, for him, new branch of human pathology. As the title indicates, Art always consider paleopathology as a subspecialty inside general pathology.

SEARCHING FOR MUMMIES

One of the problems that appeared when he wanted to begin to work on mummies was to find mummified bodies that, as it is well known, is not always easy. So, taking advantage of his adventurer and traveler spirit, he and Mary traveled to different countries around the world searching for institutions curating mummies and contacting with people who was excavating mummies in different areas of the world, mainly in South America. Their trips including the following destinations:

- South America: this was one of the most frequent destinations of the Aufderheides and there were few countries, if any, where he did not land. Chile (the place they visited more frequently during their lives), Peru, Colombia, Argentina, Brazil, were just some of the places where he worked.
- Europe: although Art and Mary travelled around the entire Old World, Spain (the Canary Islands, see below) and Italy, along with the United Kingdom, were three of their favorites countries.
- China: that trip, at the end of the 1980s, constituted one of the most greatest adventures from every point of view in the lives of Art and Mary. They had there the chance to observe mummies that Art never thought could exist, as he told us a few months later.
- Egypt: one of the dreams of Art was to work on Egyptian specimens and to take part in excavations in the sands of Egypt. During his work there, beside the study of pathological specimens, he had the chance to discover a new method of mummification.
- CANARY ISLANDS (TENERIFE): Art and Mary came to the archipelago in the fall of 1988 after reading a short paper of mine in the Paleopathology Newsletter on the history of Canarian paleopathology. After their visit to the Museo Arqueológico to see the mummy and skeletal collections belonging to the prehispanic population of the island, the Guanches, he sent a short inform on the analyses that could be made and, after reviewing it, Rafael González-Antón – Director of the museum at that time – decided to talk to the authorities of the Cabildo de Tenerife (government of the island) who did not hesitate to increase the goals of the project and funded it with a very important amount of money. The project was called *CRONOS. Bioanthropology of Guanche mummies* and was organized by the Museo Arqueológico de Tenerife belonging to the Organismo Autónomo de Museos y Centros of the Cabildo. (Fig. 1)

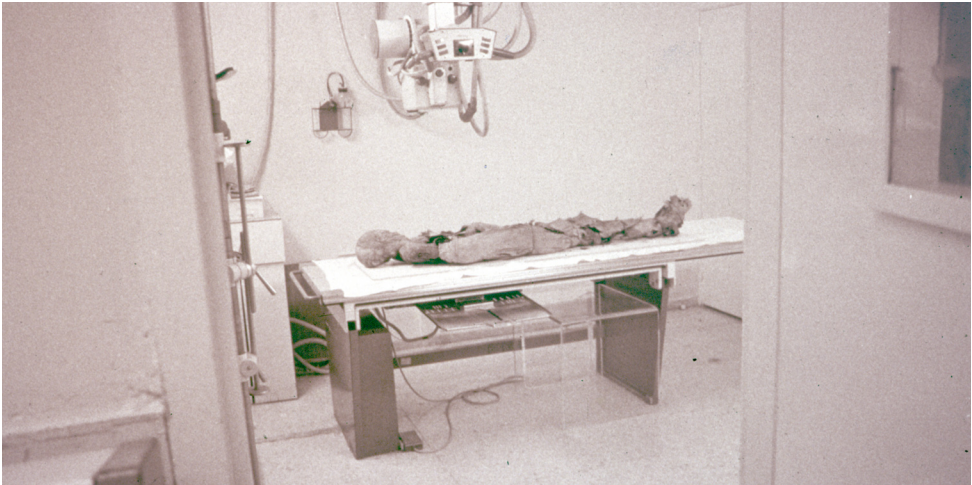


Fig. 1. Guanche mummy under X-Rays during the Cronos Project.

CRONOS consisted in a research on Guanche human remains, an international exhibition entitled *Mummies. Secrets of the past* and the organization of the First World Congress on Mummy Studies, then called International. The exhibition and the congress were opened in February 1992 in Santa Cruz de Tenerife (the capital of the province) and Puerto de la Cruz, respectively. (Fig. 2)

This was one of the most important contributions of the Aufderheides (and I say in plural because Mary was fundamental for its success) to the field of paleopathology, especially referred to mummy and mummified tissue paleopathology. The proof is the organization of nine more world congresses since that year: Cartagena (Colombia,

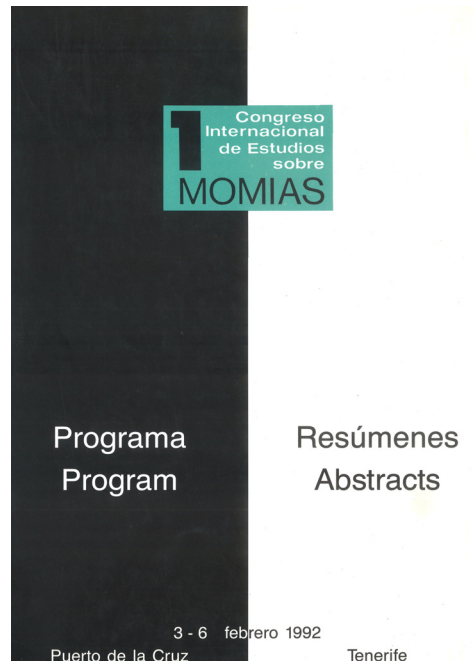


Fig. 2. Cover of the book of abstracts of the First World Congress on Mummy Studies.

1995), Arica (Chile, 1998), Nuuk (Greenland, 2001), Turin (Italy, 2004), Tegui (Lanzarote, Canary Islands, Spain, 2007), San Diego (California, USA, 2011), Río de Janeiro (Brazil, 2013), Lima (Peru, 2016) and the Extraordinary World Congress on Mummy Studies held in Santa Cruz de Tenerife in May 2018 coinciding with the exhibition *Athanatos. Death and immortality in past populations*.

Art and Mary Aufderheide left hundreds of friends in all these countries and places, friends that won't forget them.

THE PALEOBIOLOGY LABORATORY (UNIVERSITY OF MINNESOTA-DULUTH CAMPUS)

The facilities and support that the University of Minnesota at the Duluth Campus put in the hands of Art Aufderheide and the help of collaborators and students permitted the creation (with and important help of Odie Langsjoen, Emeritus Professor in the School of Dentistry in that university) of a laboratory devoted to the pathological and paleobiological studies of ancient specimens inside the Department of Pathology and Laboratory Medicine at the School of Medicine.

In his Laboratory, Art organized a huge collection of mummified tissue samples (5.000-6.000), some of them 10.000 years old, coming from the countries he visited and many others that were sent by his collaborators outside the United States.

HIS FIELDS OF INTEREST

Along his scientific life, Art was interested in different diseases and pathological groups affecting past populations. Some of his most important publications were on the following items:

- Tuberculosis: the presence of TB in the New World and its confirmation through pathological and genetic analyses.
- Other respiratory diseases like pneumonia, pneumoconiosis, ...
- Vascular diseases.
- Neoplasia of different tissues.
- Chagas disease was one of the fields in which Art showed more curiosity working with the Instituto de Enfermedades Tropicales (Universidad de Los Andes, Bogotá, Colombia) directed by Felipe Guhl, among others.
- Lead poisoning, mainly related to sugar and rum production, was another field of great interest for Art, especially during the decade of 1980 and 1990, work-

ing with different collaborators with whom published several papers in the *American Journal of Physical Anthropology* and other books and journals (Aufderheide, 1993).

Art included all these chapters of human paleopathology in *The Cambridge Encyclopedia of human paleopathology* (1998) written by he and me, with a dental chapter of Odin M. Langsjoen (our Odie).

Other fields of interest not strictly related to paleopathology in which Art was interested were the following:

- Chemical dietary reconstruction: Art became specialist in this interesting field of research and worked on different populations around the world. These studies were based in trace elements and stable isotopes (in this case working with one of his most close collaborators, Larry Tieszen from the Augustana College in Sioux Falls, South Dakota).
- Soft tissue taphonomy and pseudopathology. He was very interested in this part of mummy studies as can be seen in his excellent book *The scientific study of mummies* (2003).
- Drug analysis in human hair constituted other important field of research for Art, especially during his stays in South America, focusing mostly in the cocaine content in Andean populations to evaluate its use. One of his closest collaborators was Larry Cartmell, Medical Director at Mercy Hospital School of Medical Technology, Ada, Oklahoma.
- aDNA used mostly for the diagnostic confirmation of infectious pathological conditions. Wilmar Salo from the University of Minnesota-Duluth Campus, one of his closest friends, was his main ally and partner in this fascinating field.

HIS HUGE BIBLIOGRAPHY

It is impossible to include here the whole bibliography of Art Aufderheide. Hundreds of published papers and meeting presentations were written by his pen. Therefore, we will mention just his books.

- *Human Paleopathology. Current Syntheses and Future Options* (1991). Art and Donald Ortner were the editors of this volume that included articles written by the most known scholars at that time on different paleopathological subjects and fields of research
- *The Cambridge Encyclopedia of Human Paleopathology*, written with Conrado Rodríguez-Martín and published in 1998, this book includes chapters on skele-

tal and soft tissue paleopathology with the description of the different diseases and the most relevant findings until that time. A dental chapter by Odie Langsjoen is included at the end of the book too.

- *The Scientific Study of Mummies* (2003). Art wrote this book as a compilation of his research and the research of other authors on the field, including soft tissue taphonomy, and the significance of mummies, in general, for the scientific community and the impact caused on the general public from different points of view.
- *Overmodelled skulls* (2009). This was his last book, written, edited and published by himself. Although it is not strictly related to paleopathology it is very interesting from the ethnographical and anthropological perspectives.

WHAT DOES ART MEAN FOR PALEOPATHOLOGY?

Arthur Carl Aufderheide can be considered a true “MAESTRO” in the field of paleopathology, mainly soft tissue paleopathology and other related fields. His interest for the pathology affecting different populations in different parts of the world contributed greatly to the development of our discipline as we know it today. But it was not only this interest the feature that characterized Art, it was his constant help to his students, collaborators and the rest of his colleagues, always in an absolutely friendly and kind manner and, also, his enthusiasm in teaching and in every aspect of his life and scientific work.

So I wish to finish this short tribute to Art, and for sure to Mary, saying:

From Tenerife to Cartagena, from Arica to Greenland, Torino and Lanzarote, from there to San Diego, Rio, and Lima, and FROM DULUTH TO THE REST OF THE WORLD:

WITH OUR ETERNAL GRATITUDE DEAR ART AND MARY.

BIBLIOGRAPHY

ALLISON, M.A. & GERSZTEN, E. (1977). *Paleopathology in Peruvian mummies: application of modern techniques*. Richmond (VA): Virginia Commonwealth University.

AUFDERHEIDE, A.C. (1981). Soft tissue paleopathology – an emerging subspecialty. *Human Pathology*, 12, 10: 865-867.

AUFDERHEIDE, A.C. (1985). The enigma of ancient cranial trepanation. *Minnesota Medicine*, 68: 119-122.

AUFDERHEIDE, A.C. (1993). Lead poisoning. In Kiple, K.F. (ed.): *The Cambridge Encyclopedia of Human Disease*. New York: Cambridge University Press, 820-827.

AUFDERHEIDE, A.C. (2003). *The Scientific Study of Mummies*. New York: Cambridge University Press.

AUFDERHEIDE, A.C. (2009). *Overmodelled skulls*. Duluth (MN): Heide Press.

AUFDERHEIDE, A.C. & RODRÍGUEZ-MARTÍN, C. (1998). *The Cambridge Encyclopedia of Human Paleopathology*. New York: Cambridge University Press.

AUFDERHEIDE, A.C., RODRÍGUEZ-MARTÍN, C., ESTÉVEZ, F. & TORBENSON, M. (1995). Chemical Dietary Reconstruction on Tenerife Guanche Diet Using Skeletal Trace Elements Content. *Actas del I Congreso Internacional de Estudios sobre Momias (Puerto de la Cruz, Tenerife)*, Vol. I, pp. 33-40.

COCKBURN, A. and COCKBURN, E. (eds.). (1980). *Mummies, disease and ancient cultures*. New York: Cambridge University Press.

ORTNER, D.J. and AUFDERHEIDE, A.C. (eds.) (1991). *Human paleopathology: current syntheses and future options*. New York and London: Smithsonian Institution Press.

RODRÍGUEZ-MARTÍN, C. & GARCÍA, M. (1988). Paleopathology in the Canary Islands. *Paleopathology Newsletter* (Detroit, USA), 61: 6-7.