

Collection Forum

Spring 1994, Volume 10, Number 1

Papers

TRANSPORTATION OF FLUID-PRESERVED NATURAL HISTORY SPECIMENS STORED IN GLASS CONTAINERS: NEW SOLUTIONS TO AN OLD PROBLEM

PAUL E CLARK, OLIVER A. CRIMMEN, FRED C. NAGGS, ANDREW D. WAHL, AND MORRIS C. MANSFIELD

The Natural History Museum, Cromwell Road, London SW7 5BD, England (PFC, OAC, FCN) and Mansfield Wahl. Joinery and Polishing Specialists, 14 Woodside Avenue, Ben.fleet, Essex SS7 4NY, England (ADW, MCM)

Abstract - The Zoology Department of The Natural History Museum, London, houses one of the largest and oldest reference collections of fluid preserved biological specimens in the world. Among the many problems associated with the curation of these specimens is that of transporting the glass storage containers within and between the Museum buildings. The Health and Safety Executive (HSE), a part of the Government Department of Employment, inspected the Zoology Department and stated that the trolleys used by the curators were, in their present condition, unsafe and required modification. A solution to the problems they identified involved changes in work practices and structural modifications to the trolleys.

SPIRIT COLLECTIONS: A PRELIMINARY ANALYSIS OF SOME ORGANIC MATERIALS FOUND IN THE STORAGE FLUIDS OF MAMMALS

DAVID W. VON ENDT

Conservation Analytical Laboratory, Smithsonian Institution, Washington, DC 20560

Abstract - This paper presents preliminary data from the analysis of organic materials that were leached from specimens into their liquid storage media. Fluid samples were taken from the storage media of selected holotypes of mammal specimens. Fluids were analyzed for fatty acids and lipids using gas chromatography and gas chromatography-mass spectrometry, and for the presence of individual amino acids using amino acid analysis. A variety of lipids and their constituent fatty acids were found. C(12), C(14), C(16), and C(18), fatty acids were present, as well as a number of C(20), C(22), and C(24), acids. Furthermore, some palmitic to stearic acid (P/S) ratios were high (like those found in plants) in comparison to the low ratios normally associated with animal fat. Amino acid profiles indicated that peptides and amino acids also were being leached into the storage fluids. These profiles indicate general protein loss, including some structural proteins. Structural protein loss is characterized by a higher than expected glycine (in the 30% range) and alanine content. These results form the baseline data from which to study the deterioration of the specimens themselves.

EVALUATION OF THE EFFECTS OF DIFFERENT PRESERVATIVE AND FIXATIVE FLUIDS ON AQUATIC

INVERTEBRATES FROM INTERSTITIAL WATERS

ANA ISABEL CAMACHO AND JOSE BEDOYA

Museo Nacional de Ciencias Naturales, Jose Guitierrez Abascal, 2, Madrid, Spain

Abstract.-Ethyl alcohol has long been used as a general fixing and preserving agent for small aquatic invertebrates. It is recognized that there is no all-purpose fixative, but some fixatives are effective for large numbers of taxonomic groups. The objectives of this study were to determine whether or not it is better to fix samples from interstitial waters in the field, immediately after collection, and to determine which fixatives are best suited for aquatic invertebrates. We tested 70% ethyl alcohol, 5% formaldehyde, Angelier's fluid, and Koenike's fluid on oligochactes, ostracods, copepods, syncarids, isopods, ainhipods, molluscs and water mites. Sixteen possible fixative/preservative combinations were tested. It is not possible to make generalizations about fixing samples from interstitial waters in the field. The taxonomic groups studied differed as to preferred fixatives and preservatives.