

Collection Forum

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Papers

INITIAL RESULTS FROM CLEANING SMALL VERTEBRATE SKELETONS USING THE ENZYME TRYPSIN

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We conducted preliminary studies using the proteolytic enzyme trypsin to accelerate the maceration of a series of small bird skeletons (Aves: Apodidae) and four dolphin flippers (Mammalia: Delphinidae). Although the results from these studies can be considered tentative, they indicate that, under the proper conditions, trypsin speeds the maceration process. Trypsin-accelerated maceration introduces no detectable alteration in the amino acid composition of the cleaned bone as indicated by amino acid analysis, either in the hard, compact bone of bird skeletons, or in the more porous, cancellous bone of dolphins. In addition, amino-acid analysis of a specimen cleaned with a commercial enzyme-containing detergent indicated that about 75% of its bone protein had been destroyed and that oxidation of amino acids had occurred. Methionine sulfone (an amino-acid oxidation product) was identified in the amino-acid chromatogram, and its presence may be used to indicate whether commercial detergents used to clean bone also contain an oxidizing agent.

CHANGES IN pH IN MUSEUM STORAGE FLUIDS, I – EFFECTS OF RESISTALL PAPER LABELS

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The impact of Resistall specimen tag paper on the pH of pure water and ethanol was tested. Resistall paper makes the pH of storage fluids more acidic. The acid from Resistall paper is highly mobile and will effect the pH of storage fluids in less than 4 days. The ratio of Resistall paper to quantity of storage fluid influences the rate of the lowering of the pH. Ethanol slows the process of increasing acidity, but the pattern of lowering the pH is the same for ethanol and pure water. There are some slight differences in how 28# and 36# Resistall effect pH, but the differences are not significant.

EVALUATION OF TEMPERATURE REGIMES FOR THE CONTROL OF INSECT PESTS OF MUSEUM COLLECTIONS

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Inherent dangers associated with the use of chemicals to protect museum collections against pest attack have promoted investigation into alternative control methods. One such method is the use of thermal control. Two species of insects (Coleoptera: Dermestidae) known to attack and damage museum specimens and materials were exposed to high and low temperature regimes for varying time periods. The results show that certain time and temperature combinations were successful in controlling all stages of both species tested. Based on these results, a lethal boundary limit is proposed and the feasibility of using the technique in museum applications is discussed.

SCORE! A METHOD FOR CONSTRUCTING IMPROVED POLYETHYLENE LINERS FOR SPECIMEN TRAYS

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Many specimens are stored in standard-sized, open specimen trays with insufficient padding, potentially resulting in physical damage to specimens. Polyethylene foam tray liners are quick, convenient, and cost-effective solutions for mitigating the risk to specimens and their labels. The method described here (scoring and friction-fitting the liner to a standard-sized tray) results in removable liners with four padded sides and a square bottom, eliminates the mess of glue and the risk of burns from hot-glue applicators, and eliminates seams along the bottom of the tray liner where small fragments could disappear.

Reviews

- Collection Building in Ichthyology and Herpetology, by T.W. Pietsch and W.D. Anderson, Jr. eds.