

Collection Forum

Fall 1995, Volume 11, Number 2

PAPERS

OBSERVATIONS ON FORMALIN-INDUCED DARKENING OF HERPETOLOGICAL SPECIMENS

JAMES N. STUART

National Biological Service, Museum of Southwestern Biology, University of
New Mexico, Albuquerque, New Mexico 87131

Abstract - Samples of freshly-killed specimens of desert grassland whiptail lizards (*Cnemidophorus uniparens*) were fixed in either 10% or 20% formalin and then subjected to one of six treatments: no immersion in formalin; or immersion in the same formalin concentration as that used for fixation for one day, one week, one month, three months, or six months. Specimens were then transferred to 55% isopropanol and their preservation condition was evaluated 31 months after fixation. Observable differences were detected among the samples in the extent of color pattern conservation and specimen darkening. These differences can be attributed to the formalin concentration used and the amount of time immersed in a formalin solution.

EFFECT OF OSTEOLOGICAL PROCESSING TREATMENTS ON DIMENSIONS AND MOISTURE ABSORPTION POTENTIAL OF RODENT SKULLS

STEPHEN L. WILLIAMS AND HEATHER C. SMITH

Museum of Texas Tech University, Box 43191, Lubbock, Texas 79409-
3191 USA

Abstract - Moisture absorption and anisotropic response of bone are detectable by change in weight and dimension of the bone as it acclimates to different levels of relative humidity (RH). Because of this sensitivity to RH fluctuation, it was speculated that osteological processing treatments also may induce weight and dimensional change. Because considerable variation in processing treatments exists among institutions and time periods, questions are raised about skeletal material used for systematics research. To examine dimensional change of bone attributed to processing treatment, a series of skulls was divided into four groups. Each group was subjected to one treatment: no fluid processing (control); soaking 24 hours in distilled water at ambient temperatures; soaking 24 hours in an ammonia solution at ambient temperatures; or soaking one hour in 90°C distilled water. Size reduction was noted for most dimensions of skulls subjected to fluid treatments; in some cases, dimensional change was significant when compared to the control group. The moisture absorption potential of bone was also influenced by processing treatment. A discussion follows on the influences processing treatment may have on morphometric analyses in systematics research.

FIXATION AND PRESERVATION OF MUSEUM MARINE COLLECTIONS USING FORMALDEHYDE/GLUTARALDEHYDE MIXES

A. B. STEPHENSON AND J. L. RILEY

Auckland Institute and Museum, Private Bag 92018, Auckland, New Zealand

Abstract - A preliminary investigation into the suitability of buffered formaldehyde/glutaraldehyde mixes as general fixatives and storage solutions for marine animals in museum collections was undertaken. By comparison with material held in formaldehyde only, whole specimens in aldehyde mixes show less brittleness, better joint flexure and have undergone less colour changes; while their quality of fixation at the tissue level is at least as good. The buffers sodium orthophosphate and sodium glycerophosphate were tested for their ability to maintain pH stability. Buffer reaction products, in the form of insoluble crystalline deposits, show sodium orthophosphate to be unsatisfactory for some marine invertebrates. A mixture of formaldehyde 2.5% glutaraldehyde 1% buffered by sodium glycerophosphate 2% was found to provide the best specimen preservation results after a period of two years.

SPNHC: THE FIRST TEN YEARS

STEPHEN L. WILLIAMS

Strecker Museum Complex, Baylor University, P.O. Box 97154, Waco, Texas 76798-7154

Abstract - In 1985, the Society for the Preservation of Natural History Collections (SPNHC) was created to meet the concerns of a growing number of individuals involved with the development, management, and care of natural history collections. The Society is unique among natural history professional organizations because of its international scope and multidisciplinary approach to collections management and care. The ten-year history of this organization is impressive, particularly with respect to increasing awareness of the value and requirements of collections, collaborating nationally and internationally with other organizations, and contributing to new knowledge, resources and standards for the natural history profession. In celebration of the Society's ten year anniversary, the history and accomplishments of SPNHC during the last decade are documented.