

Amy Rachel Davidson

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Education and Professional Training

Stichting Restauratie Atelier Limburg
Maastricht, Netherlands Mar 28-30, 2012

Masterclass: Adhesives, Consolidants and Coatings
Velson Horie instructor

Northern States Conservation Center Dec. 2010
International Academic Projects Jan.-April, 2010
Canadian Conservation Institute Oct. 16-17, 2006
American Institute for Conservation Aug. 15-19, 2005
Harvard Medical School, 1989
Harvard Extension School, 1989 to 1993

Applying Numbers to Collection Objects
Chemistry for Conservators, Velson Horie instructor
Workshop on Adhesives for Paleontology Collections.
Workshop on Adhesives for Conservation, Nebraska.
Human Anatomy/Dissection.
Mammalogy, General Chemistry, Intro and Sedimentary
Geology, Osteology, Vertebrate Structure and Function,
Vertebrate Evolution.

Sculpture Center, New York, 1983 to 1987
Oberlin College, Ohio, 1978

Life-sized figures in clay and cast plaster, life-drawing.
B. A. with a major in Studio Art.

Professional Employment

Fossil Preparation

Jun. 1993 to present

Senior Principal Preparator, Division of Paleontology, American Museum of Natural History, New York, NY.

Preparation of specimens of large to extremely small size in matrices ranging from loosely indurated sandstones to extremely hard volcanoclastics. Prepared specimens include theropod and protoceratopsian dinosaurs (embryos, juveniles, adults), birds, lizards, turtles, Mesozoic and Cenozoic mammals. Molding and casting. Archival labeling and housings. Training and supervision of volunteers.

Jun. 1990 to Jun. 1993

Preparator, Department of Vertebrate Paleontology, Museum of Comparative Zoology, Harvard University, Cambridge, MA.

Two years of intensive training and one year of independent projects with William Amaral in a two-person lab. Micropreparation of medium sized and extremely small specimens, in medium to very hard matrices (hematite, highly indurated mudstone). Prepared specimens include Tertiary mammals, procolophonids, turtles, theropod and prosauropod dinosaurs, aetosaurs, pterosaurs, birds, plagiosaurid and capitosaurid amphibians.

Also responsible for preparation training and supervision of two volunteers, purchasing and management of lab and Greenland expedition supplies, locating sources for new materials and equipment, repair and maintenance of lab and expedition equipment.

1992 to 2000

Freelance Preparator, AMNH and associated institutions. Specializing in micropreparation (including jaw disarticulation) of small mammal skulls, fossils in very hard matrices (including Chilean volcanoclastics) and fossils from the Gobi.

Anatomical Preparation/Collections Management

Jun. 1988 to Mar. 1991 *Curatorial Assistant*, Department of Mammalogy, Museum of Comparative Zoology, Harvard University, Cambridge, MA, and Field Station, Concord, MA. Preparation of skeletons from a wide variety of (mostly mammal) carcasses using dermestid beetles and composting techniques. Also reorganizing of research collection and processing of loans, including detailed anatomical descriptions for loan records.

Modelmaking/Moldmaking

Oct. 1985 to Oct. 1988 *Primary Technician*, M S 2 5/Mark Stein Modelmaking, New York, NY. Small shop producing special effects for television, films and trade shows. Sculpting, molding, casting, general problem-solving under tight deadlines. Materials included silicone, latex, vinyl and Skinflex rubbers, alginate, polyester and epoxy resins, plasters and waxes.

Dec. 1978 to Mar. 1980 *Modelmaker*, Exhibits Central, Smithsonian Institution, Washington, DC. Life-like biological models for National Museum of Natural History and fiberglass reproductions of portrait busts for the National Portrait Gallery. Silicone and dental plaster molds, epoxy casts, vacuum-formed acetate and painted papier-mâché.

Sculpture/Bronze Casting/Moldmaking

Feb. 1983 to May 1985 *Sculptor and Contractor*, Frank D. Paulo Public Memorial, Staten Island, NY. Sculpted a large bronze public monument with two figures installed in an historic landmark park between the Courthouse and Borough Hall. Worked with various groups, including New York City Art and Landmarks Preservation Commissions on sculpture and base design, placement and conservation. Contracted the foundry, supervised molding, casting and installation.

May 1980 to May 1982 *Apprentice*, Johnson Atelier Technical Institute of Sculpture, Princeton, NJ. Trained in all aspects of cast sculpture production, including life-sized figures in plastilene, waste molds and plaster casting, RTV rubber molds, wax casting and finishing, bronze and aluminum casting in ceramic shell, bonded sand and green sand molds, welded re-bar armatures, metal chasing and patination.

Exhibit Design/Construction

May to Sept. 1977 *Assistant Designer*, Exploratorium Museum of Science, San Francisco, CA. Designed and assisted in the construction of a permanent interactive exhibit on the nature of shadows.

Field Work

Summers 1993 to 2000 Gobi Desert, Mongolia: AMNH/Mongolian Academy of Sciences joint expeditions

Primary responsibilities included purchasing, packing and shipping all collecting equipment and materials, locating solvents in Mongolia, distributing and maintaining stocks for collecting during the expedition. Also responsible for most of the excavation and jacketing of small specimens and occasionally larger specimens using specialized techniques for fragile bone in very loose sandstone. Camp duties included entering large numbers of specimens into the field catalogue every evening, protecting, sorting and packing all specimens for transport out of the field, inventorying and repacking of all specimens for export, including building crates when necessary. Often arrived in advance of the main crew to prepare for the expedition or remained behind for follow-up work on the shipment.

Jun. to Aug. 1992 Jameson Land, East Greenland: Triassic Fleming Fjord Formation. Museum of Comparative Zoology expedition

Extensive responsibilities before, during and after a major expedition by helicopter. Handled all inventory, purchasing, packing of food and equipment for nine people, and assisted W. Amaral with logistics. Prospecting and

quarrying in very hard rock at two different localities. Unpacked, cleaned, stored equipment. Unpacked specimens, checked them against the field list, stored them in labeled drawers.

July 1991 Wyoming: Bighorn Basin, Paleocene/Eocene Polecat Bench, Willwood, and Fort Union Formations; Como Bluff, Morrison Formation; Redbird, Cretaceous Pierre Shale; Torrington (Harvard Fossil Reserve), Oligocene Brule Formation. Museum of Comparative Zoology expedition.

Lead a three-person expedition funded by the Museum of Comparative Zoology. Responsible for planning, organizing, driving the expedition vehicle, and covering all expenses within budget. Prospecting, surface collecting, quarrying, jacketing, and packing large specimens back to camp.

Teaching

April 20-22, 2013 ***Hands-on Workshop: Seven Adhesives for Fossil Preparation***
Royal Tyrrell Museum, Drumheller, Alberta, Canada
6th Annual Fossil Preparation and Collections Symposium
by invitation of organizers

Conducted two sessions (morning and afternoon) of a four hour workshop- 25 participants per session

Assisted by Greg Brown and Marilyn Fox

All materials other than solvent solutions transported personally from New York, kits assembled on site.

Description: Most fossil preparators work with just a few adhesives and consolidants. This three hour workshop is an introduction to a wider range of commonly used adhesives. Participants construct their own charts using technical information and observation of behavioral differences, such as viscosity in different solvents, solvent-retention effects and the response of hardened samples to handling and warming by dipping in hot water. A group discussion at the end focuses on shared experience and practical tips for consolidation, joining and other fossil preparation tasks. The seven adhesives are Paraloid B-72, Butvar B-76, Butvar B-98, McGean B-15, Primal WS24, Devcon 2 Ton epoxy, and Paleobond PB002. Solvents include acetone, ethanol and ethanol/toluene mixture.

October 15, 2012 ***Hands-on Workshop: Archival Materials***
North Carolina Museum of Natural Sciences, Raleigh, North Carolina

Conducted a three hour evening session primarily for the local fossil club- 15 participants

All materials for the workshop were transported personally from New York, kits assembled on site.

Description: Many materials that are known to deteriorate over time are still commonly used in collections. These include Elmer's glue, Duco cement, nail polish, Wite-out, Scotch tape, adhesive labels, acidic papers, Sharpies and Bic pens. Participants in this workshop experience how easy it is to use long-lasting archival materials instead, including Paraloid B-72, India ink, archival disposable pens, titanium white acrylic paint, acid-free paper, Japanese paper, Ethafoam, Tyvek and polyester batting. The workshop begins with brief instructions after which participants work at their own pace with their own kit of materials. Each participant has a broken mini flowerpot "specimen" to 1) mend with an archival adhesive (Paraloid B-72), 2) label using six different archival methods and 3) house in a labeled, archival "cavity" mount. There is a group discussion at the end. The instructor demonstrates easy ways to mix, dispense and work with Paraloid B-72. Participants take home their kit along with their completed "specimen", written instructions, recipes, a supplier list, a small library of PDF references and a Certificate of Completion. Kit contents include two solutions of Paraloid B-72 in dispensers, archival white paint, a quill pen, archival papers, archival housing materials and samples of facing and backing materials .

October 15-16, 2012 ***Hands-on Workshop: Archival Materials***
North Carolina Museum of Natural Sciences, Raleigh, North Carolina
72nd Annual meeting of the Society of Vertebrate Paleontology

Conducted two sessions (morning and afternoon) of a three hour workshop- 15 participants per session

Assisted by Greg Brown and Marilyn Fox

All materials for the workshop were transported personally from New York, kits assembled on site.

Description: see above

June 16, 2012 ***Hands-on Workshop: Stabilize this!***
Peabody Museum of Natural History, Yale University, New Haven, Connecticut
27th Annual meeting of the Society for the Preservation of Natural History Collections
Assisted five conservators to teach a one-day workshop on materials and techniques for repairs, labeling and housing objects in natural history collections. 40 participants.

April 13-14, 2012 ***Hands-on Workshop: Working with Paraloid B-72***
Burke Museum, Seattle, Washington
5th Annual Fossil Preparation and Collections Symposium
by invitation of organizers
Conducted two (morning and afternoon) sessions of a four hour workshop- 15 participants per session.
Assisted by Greg Brown and Marilyn Fox
All materials for the workshop except solvents were shipped from New York, kits assembled on site.

Description: Participants share tips and practice many different techniques for applying and manipulating Paraloid B-72, using broken ceramic tiles and glass beads. Participants use their own kits of materials for consolidating, joining and filling, labeling each repair with the method used and mounting their handiwork in an archival display. Participants experience the effects of different viscosities, reactivation with solvent and with a hair drier, use of a backing or facing fabric, filling gaps, injection, manipulating small fragments, effect of substrate porosity, effect of solvent retention in the adhesive, bonding of paper labels and Ethafoam. They also learn techniques for easy mixing, loading tubes, cleaning jars without solvent and preventing stuck lids. Instructions, recipes, supplier lists and references are distributed in hard copy and digital form. Participants take home their display and their kit, including a loaded tube and brush bottle, syringe, dropper bottle with needle tip, some Paraloid B-72 ready to mix, and samples of backing, facing and bulking materials.

May 18-20, 2011 ***Archival Materials and Techniques for Vertebrate Paleontology at the AMNH (talk)***
Hands-on Workshop: Archival Materials and Techniques
Institut Català de Paleontologia, Sabadell, Spain.
II Conservation Workshop
one of five invited international participants

Delivered a 90 minute PowerPoint presentation
Conducted two (morning and afternoon) sessions of a three hour workshop- 15 participants per session
All materials for the workshop except solvents were shipped from New York, kits assembled on site.

Description of workshop: similar to the 2012 Raleigh workshops (above) and 2010 Chicago workshop (below)

May 1, 2010 ***Hands-on Workshop: Archival Materials and Techniques for Fossil Preparation***
Field Museum, Chicago, Illinois
3rd Annual Fossil Preparation and Collections Symposium
by invitation of organizers

Conducted two (morning and afternoon) sessions of a three hour workshop- 15 participants per session
All materials for the workshop except solvents were shipped from New York, kits assembled on site.

Description: This workshop emphasizes hands-on experience to create a take-home sample. Using a pre-made kit with a broken miniature flowerpot "specimen" participants practice mending with Paraloid B-72, making six different archival labels and created a cavity mount housing with a thumbnail reference photograph. Participants receive reference papers on the use of Paraloid B-72 for joining and gap-filling along with a bibliography, written instructions and supplier information. The workshop also includes a group discussion of the completed samples and demonstrations on mixing and dispensing Paraloid B-72.

Sept. 22, 2009 ***The Use of Cyanoacrylates and Butvar B-76 on a Specimen of Shuvuuia deserti (IGM 100/977) from Ukhaa Tolgod, Gobi Desert, Mongolia (talk)***
University of Bristol, United Kingdom
Adhesives: Choice and Reason Workshop
69th Annual meeting of the Society of Vertebrate Paleontology
one of 5 invited speakers for a one day international workshop.

Delivered a 30 minute presentation on a case study

May 21, 2008

Materials for Fossil Preparation: Adhesives, Archival Marking and Archival Housings, One Day Workshop
Royal Tyrrell Museum, Drumheller, Alberta, Canada.
by invitation of the museum

Description: Conducted a day-long workshop for museum fossil preparation and collections staff. This workshop was an expanded version of the One Hour MiniSeminar presented in Arizona, 2008 (see below). See Davidson, 2009 (publications) for a description of this workshop.

April 11, 2008

A One Hour MiniSeminar on Adhesives for Fossil Preparation.
Petrified Forest National Park, Arizona.
First Annual Fossil Preparation and Collections Symposium

Description: This seminar is described in Davidson, 2009 (see publications)

Dec. 6-16, 2004

Workshop for Micropreparation of Fossil Vertebrates
Museo Paleontologico Edigio Feruglio, Patagonia, Argentina
First International Workshop for Micropreparation of Fossil Vertebrates
Workshop funded by the 2004 SVP Preparator's Grant

Instructors: Amy Davidson (micropreparation) Marilyn Fox (molding and casting),
Dr. Alex Kellner (acid preparation).

Collaborated with two other instructors to conduct a ten day workshop for 19 Argentines and Brazilians.

Supervised hands-on training in micropreparation, demonstrated new equipment and materials, presented five PowerPoint lectures and led group discussions on specific techniques.

Oct. 20-22, 1998

Workshop in the mechanical preparation of fossil vertebrates
Department of Geology and Paleontology, National Museum, Rio de Janeiro, Brazil.
by invitation of Dr. Alex Kellner

Provided basic training to 6 students in a rudimentary lab being set up by Dr. Alex Kellner.
Advised and assisted in the purchase of basic equipment and supplies.

Publications

- Davidson, A., L. Kronthal Elkin, and S. Anderson. *Choosing adhesives for fossil vertebrate specimens* In: Adhesive Compendium for Conservation, chapter 7. Down, J. (in press).
- Davidson, A. and G. Brown, 2012. *Paraloid™ B-72: Practical Tips for the Vertebrate Fossil Preparator*. 2012 Collection Forum 26 (1-2): 99-119.
- Davidson, A. and M. Fox. 2011. *The PITT® pen, a possible option for labeling fossil vertebrates*. Society for the Preservation of Natural History Collections (SPNHC) newsletter 25(1): 23-28.
- Brown, M and A. Davidson. 2010. *The use of cyclododecane to protect delicate fossils during transportation*. Journal of Vertebrate Paleontology 30(1): 300-303.
- Bisulca, C., Kronthal Elkin, L., and A. Davidson. 2009 *Consolidation of fragile fossil bone from Ukhaa Tolgod, Mongolia (late Cretaceous) with Conservare OH 100*. Journal of the American Institute for Conservation 48: 37-50.
- Davidson, A. and S. Alderson. 2009. *An introduction to solution and reaction adhesives for fossil preparation*. In: Methods In Fossil Preparation: Proceedings of the First Annual Fossil Preparation and Collections Symposium, pp 53-62. Brown, M.A., Kane, J.F. and W.G. Parker eds.
- Davidson, A.R. 2009. *A report on a mini-seminar on adhesives for fossil preparation*. In: Methods In Fossil Preparation: Proceedings of the First Annual Fossil Preparation and Collections Symposium, pp.111-122. Brown, M.A., Kane, J.F. and W.G. Parker eds.
- Davidson, Amy R. 2003. *Preparation of a fossil dinosaur*. American Institute for Conservation, Objects Specialty Group Postprints 10: 49-61.
- Dashzeveg, D., Novacek, M.J., Norell, M.A., Clark, J.M., Chiappe, L.M., Davidson, A., McKenna, M., Dingus, L., Swisher, C., and P. Altangerel. 1995 *Extraordinary preservation in a new vertebrate assemblage from the Late Cretaceous of Mongolia*. Nature 374: 446-449.

Jenkins, F.A., Shubin, N, H., Amaral, W.A., Gatesy, S.M., Schaff, C.R., Clemmensen, L.B., Downs, W.R., Davidson, A.R., Bonde, N., and F. Osbaeck. 1994. *Late Triassic continental vertebrates and depositional environments of the Fleming Fjord Formation, Jameson Land, East Greenland*. Meddelelser om Gronland, Geoscience 32.

Society of Vertebrate Paleontology Preparators' Symposium

- 2010 A.R. Davidson: *Polytetrafluorethylene (Plumber's) Tape, Tissue and Plaster Bandage Used as a Removable Support for Fossil Preparation*. Pittsburg, PA (poster)
- 2009 A.R. Davidson: *Temporary Gap-Filling to Stabilize an Exploded Matrix for Fossil Preparation: the Sand and Butvar B-76 Technique*. Bristol, UK (poster)
- 2008 A. R. Davidson: *Removing Fossil Ribs: the Thread Technique*. Cleveland, OH (poster)
- 2007 A. R. Davidson: *Preparing to Prepare Your Fossil Vertebrate: Set-Ups to Maximize Speed and Control*. Austin, TX (invited "basics" talk)
- 2006 A.R. Davidson, S. Alderson, M. Fox: *Assembling an Archival Marking Kit for Paleontological Specimens*. Ottawa, ON, Canada (poster)
- 2005 M. Fox, A. R. Davidson, A. Kellner, D. Pol, P. Puerta, H. Silva: *The First International Workshop for Micropreparation of Vertebrate Fossils*. Mesa, AZ (talk)
- L. Kronthal, C. Bisulca, A.R. Davidson: *The Use of Conservare OH-100 for the Stabilization of Particularly Fragile Dinosaur Bone*. Mesa, AZ (talk)
- 2004 A.R. Davidson: *Liquid to Solid and Back; Phase Change in Adhesives*. Denver, CO (talk)
- R. Arenstein, A.R. Davidson & L. Kronthal: *An Investigation of Cyclododecane for Molding Fossil Specimens*. Denver, CO (poster)
- 2003 A.R. Davidson: *Adhesives as Liquids*. St. Paul, MN (talk)
- 2002 A.R. Davidson: *Preparation of Citipati osmolskae*. Norman, OK (talk)
- 2001 SVP Preparators' Symposium Convener. Bozeman, MT
- 2000 A.R. Davidson: *A Demonstration of Preparation Tools and Techniques for Gobi Material*. Mexico City, Mexico (talk)
- 1999 A.R. Davidson: *Seven years in Mongolia: Techniques*. Denver, CO (talk)
- 1998 A.R. Davidson: *A Foot-Controlled, Chip Blowing Needle for Micropreparation of Fossil Vertebrates*. Snowbird, UT (poster)
- 1997 A.R. Davidson: *A Wax Cast from an Alginate Mold: Replicating a Velociraptor from Ukhaa Tolgod, Mongolia*. Chicago, IL (talk)
- 1996 J. Levinson, A.R. Davidson: *Collection and Preparation of Specimens from Ukhaa Tolgod, Mongolia: a Collaboration*. New York, NY (talk)
- 1995 A.R. Davidson: *Collecting and Preparing the Ukhaa Tolgod Specimens*. Pittsburg, PA (talk)
- 1994 A.R. Davidson: *Modifying a Workstation for Micropreparation*. Seattle, WA (talk)

Additional Presentations

- 2005 L., Kronthal, C., Bisulca, A.R. Davidson, *Applying a Conservation Model to the Treatment of Fragile Dinosaur Bone*. Society for the Preservation of Natural History Collections Meeting. London, England (poster)
- 2004 A.R. Davidson: *Preparation of a Fossil Dinosaur: Learning from Conservation*. Society for the Preservation of Natural History Collections Meeting. New York, NY (talk)
- A.R. Davidson: *Preparation of a Fossil Dinosaur: Learning from Conservation*, L. Kronthal, Natural Sciences Conservation at the American Museum of Natural History. Winterthur Museum/University of Delaware Art Conservation Program, Student's Choice Seminar. Winterthur, DE (joint talk)
- L. Kronthal, C. Bisulca, A.R. Davidson: *Conservation of Natural Science Collections, Highlighting the Preservation of the Gobi Desert Fossils* Metropolitan Museum of Art Conservation Seminar Series, New York, NY (joint talk)
- 2003 A.R. Davidson: *Preparation of a Fossil Dinosaur*, American Institute of Conservation Meeting, Objects Specialty Group, Creativity in Conservation Session. Arlington, VA (talk)

Professional Society Membership and Service

Society of Vertebrate Paleontology (member 1991 to present).

SVP Joseph F. Chance Preparators' Award Committee (Worked with two other preparators and the donor to create the Award. Served as Chair 1998 to 2001, member 2002, 2003).

Journal of Vertebrate Paleontology (Associate Editor for 'fossil preparation' related submissions, 2005).

SVP Preparators' Committee: initiated annual meetings given official status in 2002. (member 1998 to present, Convener of first meeting 1998, Moderator 1999, 2000, Continuity Sub-Committee Chair, 2004 to present)

American Institute for Conservation

Society for the Preservation of Natural History Collections

PREPLIST preparators' online discussion list (active contributor 2002 to present)