STICKY SITUATIONS

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Courtesy of Canada Conservation Institute
Conference review:
Symposium 2011 - Adhesives and Consolidants for Conservation: Research and Applications
National Library and Archives of Canada, and the Canadian Conservation Institute, Ottawa
October 17–21, 2011
When it comes to the conservation of cultural property, the simple act of joining or holding things together is not a simple matter at all. Adhesives and consolidants may discolour, bonds may fail, and worse, it may be impossible to remove failed adhesive without damaging precious original material. These considerations are complicated by the diversity of objects which conservators are required to treat - from gut skin parkas to a silk Medici infant's garment, from medical models of painted wax to the caves of Mumbai. Conservators' "life" expectancy (that is, the life expectancy of their treatments!) should exceed the conservator's life expectancy - more than 100 years, or indefinitely would be nice - all this in a world of one-month warranties and buildings with an expected lifespan of 50 years. So great are our expectations, keynote speaker, Charles Velson Horie, asked: "Does What We Want Exist?" Horie is well known to conservators of all stripes as the author of a near-biblical reference "Materials for Conservation" (1987). He stressed the need for institutions to support research projects over the long term - decades in fact, and typically beyond the course of one career.

Grouped by object/material type (glass, stone, textiles, etc.), thirty-seven papers were presented over four days at the National Library and Archives conference venue. A central concern in conservation is the evaluation of new adhesives and consolidants and ongoing reevaluation of familiar ones, both synthetic and natural. The British Library, for example, conducted a systematic review of adhesives in use in their Conservation Department and presented their results at Symposium 2011. Unexpected, undesireable interactions may occur between adhesives and their substrates (Alice Cannon, "Interactions Between Adhesives From Natural Sources and Paper Substrates") or adhesives and consolidants may penetrate the substrate inadequately or too

deeply (Karolina Soppa, Tilly Laaser, Christoph Krekel, "Visualizing the Penetration of Consolidants Using Fluorescent Labelling").

Given the potential and sometimes unknown risks of adhesive use, what about rethinking the entire concept? "Adhesion Without Adhesives" was explored by Canada's Julia Fenn as she described "gecko tapes," which simulate the structure of the underside of gecko toes. The exquisite, intricate design of their toe surface allows geckos to hang from the ceiling via a purely mechanical grip. Outside the relatively small field of heritage preservation, gecko-like adhesives are currently of great practical and commercial interest, with potential applications in medicine, sports, and military, to name a few. Gecko tapes are not yet available commercially, but once released on the market, they should eclipse Velcro in popularity and ubiquity.

As a paintings conservator, I was eager to hear the latest research on a canvas tear mending method known as "Thread by Thread" developed in Germany, but virtually all the topics were of interest, not only because paintings may include materials such as paper or wax, but because like all conservators, I am accustomed to adapting materials and techniques developed for other specializations. Some of the most impressive developments involve consolidation treatments. A common paper treatment, deacidification, is routinely undertaken (and in the case of libraries and archives, en mass) to slow the deterioration of cellulose by introducing an alkaline reserve, but falls short of achieving consolidation. French researchers reported the use of aminopropylmethyldiethoxysilane, mercifully known as AMDES, which not only delivers an alkaline reserve, but partially restores paper strength. When you imagine the volume of archival material in collections worldwide, you will comprehend the import of this previously unimagined possibility. AMDES was also the topic of a paper by Italian researchers showing its use to partially restore the structure, mass, and strength of polyurethane ester foams; this familiar, typically yellow foam used for cushioning in upholstery and mattresses has been utilized by artists as a sculpture medium. In a similar vein, Chinese researchers based at the China National Silk Museum, Hangzhou, described a method where a silk protein is combined with EDGE (ethylene glycol diglycidyl ether) to consolidate fragile silk. Extracted from the ground or soil-laden chambers, archaeological textiles are barely recognizable as anything, so even the theoretical restoration of the aforementioned Medici infant's garment, previously submerged in Florentine mud from the 1966 flood, was an exciting premise (Susanna Conti, Firenze: "Study and Use of Organic and Inorganic Nanostructured Consolidants in the Conservation and Treatment of Archaeological Burial Textiles").

The conference was followed by a novel "Demonstration Day" at the Canadian Conservation Institute (CCI), where attendees could observe materials and methods in actual use in the lab. Externally, CCI is a rather non-descript industrial building in east Ottawa, its banal appearance belying the fascinating work of its scientists and treatment conservators as they face conservation's many challenging and complex problems. A small variation in the way a familiar material is used may offer entirely new or improved treatment options, as amply demonstrated on this day at CCI . For example, the sieving of gelatine adhesive to produce a "mousse" offers greater control in archival repair, or a synthetic resin which is normally dissolved in organic solvents and used in liquid form may be cast in moulds to create coloured fills for damaged glass objects (Steven Koob, The Corning Museum of Glass). A household ultrasonic humidifier can be adapted to deliver a fine

mist of consolidant onto powdery and porous surfaces which might be ruined by other application methods. The papers and demonstrations were wonderfully augmented by 32 superb technical posters displayed during the conference. Mid-week tours of Ottawa conservation facilities included the National Gallery of Canada, Parks Canada, and the Canadian Museum of Civilization, among others.

Symposium 2011 was an appetizing smorgasboard of information, to quote the Program Chair and CCI researcher, Jane Down: "The papers, posters and demonstrations presented at Symposium 2011 represented an enormous amount of excellent work... and the CCI organizing committee was, quite frankly, the best team you could ever want. I will always view this Symposium as the pinnacle of my career, I loved every moment!"

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