Review of the Pesticide-contaminated Collections Workshop
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As part of Symposium 2007, Preserving Aboriginal Heritage: Technical and Traditional Approaches, the Canadian Association for Conservation and the ICOM-CC Working Group on Ethnographic Collections co-sponsored with the Canadian Conservation Institute (CCI) a day long workshop dedicated to pesticide-contaminated collections. Between 40-45 people attended both the morning and afternoon sessions. The morning session provided a general introduction to the issues encountered when dealing with pesticide-contaminated collections. This introduction covered topics such as which pesticides and other toxic materials might be found in museum collections; how to approach assessing collections for pesticide residues; and sampling methods and analytical techniques that can be used for these applications. Three case studies were then presented. Dr. Nancy Odegaard, Arizona State Museum, University of Arizona, presented a case study on the analysis and repatriation of several objects to the Hopi. Jessica Johnson and Jae Anderson, both from the National Museum of the American Indian (NMAI), Odile Madden of the Smithsonian Institution’s Museum Conservation Institute (MCI), and Dr. Aaron Shugar (Buffalo State College) presented a case study on NMAI’s use of x-ray fluorescence spectrometry (XRF) to test objects in their collection for arsenic, mercury and lead prior to loaning or repatriation. Anne MacKay, Chief Conservator at the McCord Museum, Jennifer Poulin (CCI) and Jane Sirois presented a case study on testing objects in the McCord’s collection for organic compounds such as DDT as well as inorganic elements such as arsenic and mercury.

At the end of the morning, Tom Strang (CCI) presented alternatives to using chemical and biological pesticides to control infestations, and outlined integrated pest management strategies. We were also very pleased to welcome Dr. Claire Franklin, a research fellow at the University of Ottawa and Director of The Lifeline Group, who presented a lecture on toxicology, providing knowledge essential to advance our understanding of these issues. Following the presentations, the participants were organized into break-out groups where each group addressed one question related to the morning’s themes and then reported their discussions to the other groups at the morning’s end.

The afternoon session was devoted to handheld x-ray fluorescence (XRF) analysis of contaminated collections. Three papers were presented on this topic. Martin Mastovich, from Thermo Fisher Scientific, outlined the different calibration modes used in handheld XRF and their applications. Odile Madden, from the Smithsonian Institution MCI, focused on the need for and preparation of accurate standards for handheld XRF analysers for the detection of arsenic residues in organic matrices. Dr. Bruce Kaiser, Bruker AXS, covered the physics of x-ray interactions in XRF spectrometry and presented a variety of examples of the analysis of inorganic pesticide residues, namely arsenic, mercury and lead in objects with organic substrates. Jessica Feuer, an applications scientist from Innov-X Systems was also present ensuring that scientists from at least three of the major handheld XRF manufacturers were present to answer
questions, meet the participants and provide advice to those who are using this technique for artifact analysis.

Overall, the day was a success, packed with information ranging from historical literature research, analysis, toxicology, integrated pest management and the intricacies of x-ray fluorescence spectrometry. Information packages containing handouts on topics covered during the day were provided to the participants at the workshop. Discussions in both the morning and afternoon sessions were followed up by distributing the discussion notes from the break-out groups to the participants by e-mail.