



The Analyst

Volume 2, Issue 2

November 2011

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NPM Gets Important New Equipment

Tom Lera, IAP member and Blount Chair of Research at the Smithsonian National Postal Museum, was successful this year in obtaining funding for not one, but *two* new pieces of equipment for performing forensic analysis of philatelic materials. The first of these, the Bruker Tracer III-SD, is a device that performs X-Ray Fluorescence analysis. The second is the Bruker ALPHA FT-IR which allows for the identification of organic compounds using infrared spectroscopy. When coupled with the VSC-6000, these devices form the basis of a formidable philatelic lab.

The Training Session

Tom arranged to have Dr. Bruce Kaiser, the Chief Scientist of Bruker, visit the NPM in early November and provide a day and a half of hands-on training on the Tracer III-SD to Tom and a team of five other IAP members (see photo). These members, flying in from across the U.S., felt that it was very important to be able to get this experience.

The Tracer III-SD

This compact, hand-held forensic device is being used by thousands of universities

and museums around the world. Applications range from archeology to mineralogy to paintings and sculptures and many more. In simple terms, the Tracer is able to identify elements from sodium to plutonium that occur in the sample being tested. For philatelists, this can be used to determine ink, paper and gum compositions. Such results can be used, for example, to identify specific printings of stamps as the ink pigments vary.

FT-IR

The second piece of equipment is the FT-IR. This device performs Fourier Transformed Infrared Analyses of test samples. Such analyses can identify organic

compounds prevalent in ink pigments after World War I. The application of this technology will be highlighted in later issues of the *Analyst*.

Top Forensic Lab

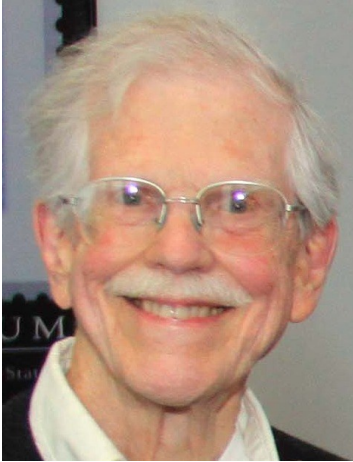
There is no doubt that the NPM is now the preeminent philatelic forensic resource in the world. These resources are available for collectors to use by making arrangements at the NPM through Tom Lera (LeraT@si.edu).

Remember that IAP funds grants for research projects that may use this equipment. Check our web site for additional details. The NPM also has a number of scholarships that can be used to partially fund projects. §§



From left: Lyman Caswell, Mike Plett, Tom Lera, Dr. Bruce Kaiser of Bruker Elemental, Jim Allen, Dave Herendeen and Dr. Ted Liston

Caswell Completes Project



IAP Fellow
Lyman Caswell

Well-known philatelist and exhibitor Lyman Caswell has completed his IAP grant. Awarded in late 2010, his project was entitled ***Colorimetric Analysis of Overprints: The Szeged Issues of Hungary.***

Lyman performed his research using the VSC 6000 at the National Postal Museum in Washington, DC and X-Ray fluorescence (XRF) analysis performed by IAP fellow Ted Liston. The results are scheduled to be published in the January 2012 issue of the ***Collectors Club Philatelist***, one of the premier philatelic

publications in the U.S. The title of the paper is ***Evaluation of Forensic Methods for Overprint Analysis.*** His study confirmed through reflectance spectral techniques the lack of visual difference between the products of the two print shops producing the subject stamps.

The strong chromium signal found in the XRF spectra of one of the print shop overprints proved to be a sure method for identifying the work of this print shop. On the other hand, chromium was absent or very weak in the XRF spectra of the

other print shop and counterfeit overprints. Although the colors of the latter overprints match those of the first print shop, they derive from entirely different, as yet unidentified colorants.

The distribution of data collected during his study showed that at least three different counterfeiting operations existed.

Lyman's paper will also appear on the IAP web site after it has been published. §§

IAP at Stampshow 2011

There were three IAP-related meetings at Stampshow in Columbus, OH in August. Dave Herendeen and Tom Lera repeated their talk on sources of research funding from IAP and the NPM. The IAP Status Report was also presented. It

highlighted brief talks by John Barwis and Lyman Caswell discussing some results of IAP-funded research projects and an overall review of the business aspects of IAP.

Dave Herendeen also gave a talk entitled *The Joy of*

Philatelic Research. This presentation will appear at national shows to help inspire our fellow philatelists to try their hand at research activities. All of the talks were well-attended and will be reprised next year in Sacramento. §§

First Electronic *Analyst*

You are reading the first all electronic issue of the *Analyst*.

At the IAP meeting held at Stampshow in Columbus, the 30 or so members in attendance were reminded that one of the IAP goals is to hold overhead expenses to less than 5% of member contributions. In order to achieve this goal, some expenses have been borne by members with extra

contributions outside of the normal membership program.

Members were asked if they would prefer to finance printing of the *Analyst* with special donations, or simply reduce costs (about \$400 per issue) by changing to an electronic delivery. The results were unanimous.— go to an electronic newsletter.

This does allow certain

flexibilities not available to the printed newsletter. The two most important are: the time it takes to get the newsletter printed and mailed is eliminated; and, any number of pages can be prepared.

Still, if any member would like to make a special contribution to allow for printing the *Analyst*, it will be accepted with pleasure. §§



First International Congress Scheduled

A tentative date and venue have now been set for the *First International Congress on Analytical Philately*. The Smithsonian National Postal Museum has graciously agreed to co-sponsor the event and provide the venue for our meeting.

The prospective dates are 12-13 November 2012. Our meeting will conclude ten days of philatelic activities which include the Postal History Symposium, held in Bellefonte, PA, and a special ASDA-sponsored stamp show to be held in the

Historic Hall of the NPM in Washington, DC. These open activities will be followed by the Council of Philatelists meeting and the Sundman Lecture and reception, both held at the NPM.

We intend to have a number of stimulating technical presentations. Additionally, it is planned to have two important keynote speakers that will be announced in the spring.

There will be a nominal registration fee for the Congress which will cover the cost of breakfast and

lunch refreshments. A dinner is planned for the evening of 11 November so that attendees will get to meet one another in an informal environment.

The IAP web site will feature the program schedule as it becomes available, and allow attendees to preregister online.

Because of facility space limitations, attendance will be limited to 35. IAP membership is not required to attend. §§



Venue for the IAP/NPM International Congress Washington, DC

IAP in the News

As a new organization, it is important for the IAP to gain exposure in the philatelic community. IAP directors are working hard and traveling frequently to get this exposure. The goal of these efforts is to raise funds, add members, build relationships with other organizations and find researchers.

Barwis Wins C of C

IAP vice president John Barwis led a large contingent of members into this year's Champion of Champion exhibits at Stampshow 2011 held in August in Columbus, OH. John's winning exhibit was his "Half-Lengths of Victoria, 1850-1859" which was also the basis for his acclaimed book on the same subject. John also had a second exhibit in the running.

Other IAP members competing included Mark Banchik, Alfredo Frohlich, Dave Herendeen, Bob Hisey, Les Lanphear, and Mark Schwartz with two exhibits. Not too bad! §§

Herendeen Named to Council of Philatelists

The Board of Regents of the Smithsonian Institution has voted IAP president Dave Herendeen to the Council of Philatelists of the National Postal Museum. Dave sits on the research committee with other IAP members chairman Roger Brody, Bob Odenweller, Tom Lera, and John Hotchner. §§

Liston Speaks at Collectors Club of New York

IAP fellow and leading proponent of X-Ray Fluorescence Spectroscopy, Dr. Ted Liston of northern Califor-

nia, presented a talk entitled *Scientific Examination of Philatelic Material* at the Collectors Club in March. Ted has been actively involved in analytical philately for many years. §§

Hisey Presentation in Hawaii

Bob Hisey, founding member and Director of IAP, sent his recorded presentation entitled "Stamp Printing Basics for Philatelists" to the 2011 Hawaii StampCamp in November on Oahu.

The presentation was well-received. It focused on how to identify the printing method used on a stamp, especially in the classic period, an era especially important for Hawaiian issues including the so-called missionaries and the later numeral issues. §§



Champion of Champions and IAP Vice President John Barwis



Dr. Ted Liston

The Usefulness of XRF Analyses



**The Bruker Tracer III-SD
with its vacuum pump and
dedicated computer**

While being trained to use the Bruker Tracer III-SD in November, members of the IAP team performed various analyses on stamps they had brought. While these were primarily intended to provide practice for the team, several very nice results were obtained that show the power of this analytical tool.

Firstly, two distinctly different shades of a classic U.S. stamp were analyzed to see if the shade difference was caused by an actual difference in the pigment composition used during

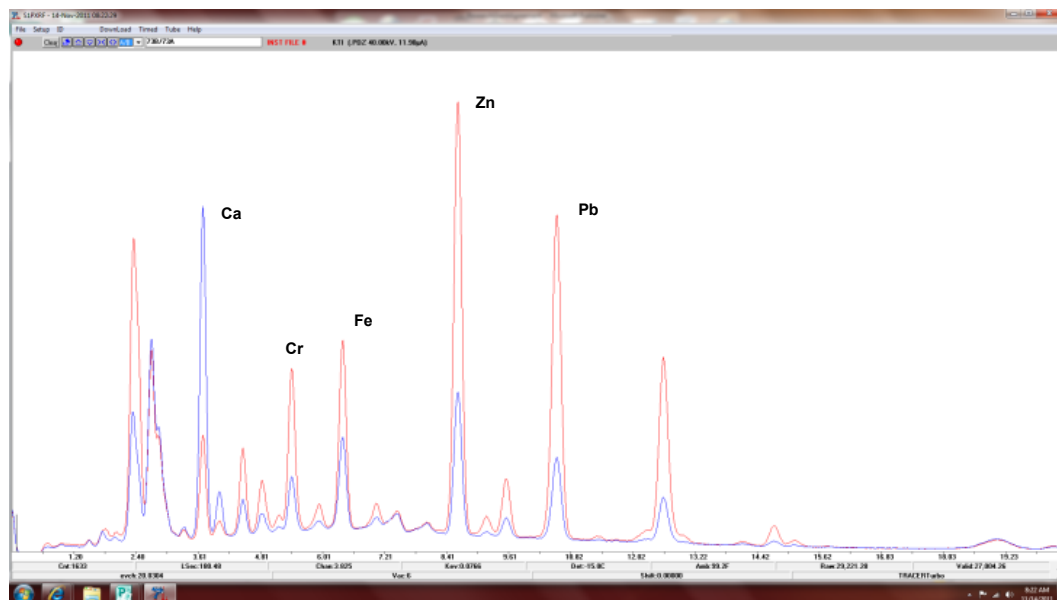
printing. Further, if there was a such difference, how could it be characterized.

The subject stamps were placed on the sensor of the Tracer and sampled for 180 seconds (a number selected so that attendees could perform as many tests as possible.) A spectrum of the emitted photons is shown in the figure. The energies of these photons ranged 3-30 KeV (kilo electron volts).

The two curves in the spectrum represent an overlay of the two stamps. What we are looking for is differences, of which there

are many. Some of the chemical elements have been labeled in the figure. As you can see, major differences occur in the chromium (Cr) and iron (Fe) which are in the red pigment, and in the calcium (Ca), zinc (Zn) and lead (Pb), all of which are often used as whiteners and extenders for pigments.

Attendees expect several technical notes to be published highlighting these and other results. The usefulness of this wonderful new forensic device will prove important in the coming years. §§



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